

# SMPS Stacked MLC Capacitors



U.S. Preferred Styles

## (SM Style) Technical Information on SMPS Capacitors

### ELECTRICAL SPECIFICATIONS

#### Temperature Coefficient

C0G: A Temperature Coefficient -  $0 \pm 30$  ppm/°C, -55° to +125°C

X7R: C Temperature Coefficient -  $\pm 15\%$ , -55° to +125°C

Z5U: E Temperature Coefficient - +22, -56%, +10° to +85°C

#### Capacitance Test (MIL-STD-202 Method 305)

C0G: 25°C,  $1.0 \pm 0.2$  Vrms (open circuit voltage) at 1KHz

X7R: 25°C,  $1.0 \pm 0.2$  Vrms (open circuit voltage) at 1KHz

Z5U: 25°C, 0.5 Vrms max (open circuit voltage) at 1KHz

#### Dissipation Factor 25°C

C0G: 0.15% Max @ 25°C,  $1.0 \pm 0.2$  Vrms (open circuit voltage) at 1KHz

X7R: 2.5% Max @ 25°C,  $1.0 \pm 0.2$  Vrms (open circuit voltage) at 1KHz

Z5U: 3.0% Max @ 25°C, 0.5 Vrms max (open circuit voltage) at 1KHz

#### Insulation Resistance 25°C (MIL-STD-202 Method 302)

C0G and X7R: 100K M $\Omega$  or 1000 M $\Omega$ - $\mu$ F, whichever is less.

Z5U: 10K M $\Omega$  or 1000 M $\Omega$ - $\mu$ F, whichever is less.

#### Insulation Resistance 125°C (MIL-STD-202 Method 302)

C0G and X7R: 10K M $\Omega$  or 100 M $\Omega$ - $\mu$ F, whichever is less.

Z5U: 1K M $\Omega$  or 100 M $\Omega$ - $\mu$ F, whichever is less.

#### Dielectric Withstanding Voltage 25°C (Flash Test)

C0G and X7R: 250% rated voltage for 5 seconds with 50 mA max charging current. (500 Volt units @ 750 VDC)

Z5U: 200% rated voltage for 5 seconds with 50 mA max charging current.

#### Life Test (1000 hrs)

C0G and X7R: 200% rated voltage at +125°C. (500 Volt units @ 600 VDC)

Z5U: 150% rated voltage at +85°C

#### Moisture Resistance (MIL-STD-202 Method 106)

C0G, X7R, Z5U: Ten cycles with no voltage applied.

#### Thermal Shock (MIL-STD-202 Method 107, Condition A)

#### Immersion Cycling (MIL-STD-202 Method 104, Condition B)

#### Resistance To Solder Heat (MIL-STD-202, Method 210, Procedure 2, Condition C)

### Typical ESR (m $\Omega$ ) 24 $\mu$ F Performance

|              | Aluminum<br>Electrolytic | Tantalum | MLC |
|--------------|--------------------------|----------|-----|
| ESR @ 50KHz  | 2,100                    | 140      | 1   |
| ESR @ 100KHz | 2,000                    | 125      | 1   |
| ESR @ 500KHz | 1,600                    | 105      | 2.5 |
| ESR @ 1MHz   | 1,500                    | 105      | 5   |
| ESR @ 5MHz   | 1,200                    | 140      | 10  |
| ESR @ 10MHz  | 1,700                    | 190      | 14  |

### HOW TO ORDER

### AVX Styles: SM-1, SM-2, SM-3, SM-4, SM-5, SM-6

| SM0            | 1                    | 7                                           | C                             | 106                                                                                                                                                                                       | M                                                                                                                                                                               | A                           | N                                                                | 650                                                                                                  |
|----------------|----------------------|---------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| AVX Style      | Size                 | Voltage                                     | Temperature Coefficient       | Capacitance Code                                                                                                                                                                          | Capacitance Tolerance                                                                                                                                                           | Test Level                  | Termination                                                      | Height                                                                                               |
| SM0 = Uncoated | See dimensions chart | 50V = 5<br>100V = 1<br>200V = 2<br>500V = 7 | C0G = A<br>X7R = C<br>Z5U = E | (2 significant digits + no. of zeros)<br>10 pF = 100<br>100 pF = 101<br>1,000 pF = 102<br>22,000 pF = 223<br>220,000 pF = 224<br>1 $\mu$ F = 105<br>10 $\mu$ F = 106<br>100 $\mu$ F = 107 | C0G: J = $\pm 5\%$<br>K = $\pm 10\%$<br>M = $\pm 20\%$<br>X7R: K = $\pm 10\%$<br>M = $\pm 20\%$<br>Z = +80, -20%<br>Z5U: M = $\pm 20\%$<br>Z = +80, -20%<br>P = GMV (+100, -0%) | A = Standard<br>B = Hi-Rel* | N = Straight Lead<br>J = Leads formed in<br>L = Leads formed out | Max<br>Dimension "A"<br>120 = 0.120"<br>240 = 0.240"<br>360 = 0.360"<br>480 = 0.480"<br>650 = 0.650" |

Note: Capacitors with X7R and Z5U Dielectrics are not intended for AC line filtering applications. Contact Plant for recommendations.

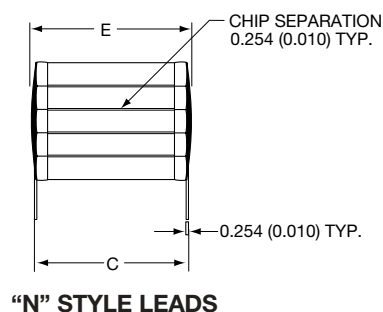
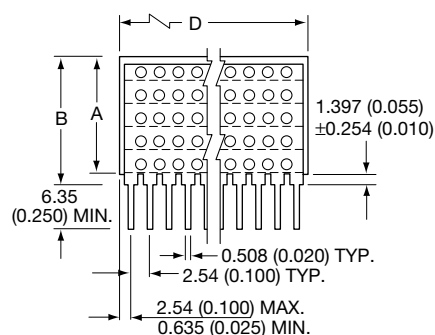
\*Hi-Rel screening for C0G and X7R only. Screening consists of 100% Group A (B Level), Subgroup 1 per MIL-PRF-49470.

# SMPS Stacked MLC Capacitors

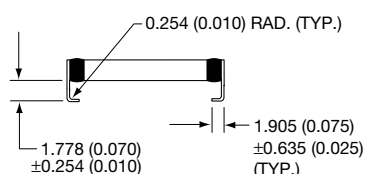
(SM Style) Surface Mount and Thru-Hole Styles (SM0, SM5)



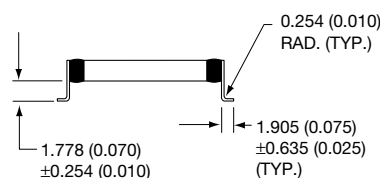
U.S. Preferred Styles



"N" STYLE LEADS



"J" STYLE LEADS



"L" STYLE LEADS

## DIMENSIONS

millimeters (inches)

| Style | A (max.)                              | B (max.)                                                        | C ±.635 (±0.025) | D ±.635 (±0.025) | E (max.)     | No. of Leads per side |
|-------|---------------------------------------|-----------------------------------------------------------------|------------------|------------------|--------------|-----------------------|
| SM-1  | See page 10 for maximum "A" Dimension | For "N" Style Leads, "B" Dimension = "A" Dimension Plus 0.065". | 11.4 (0.450)     | 52.1 (2.050)     | 12.7 (0.500) | 20                    |
| SM-2  |                                       |                                                                 | 20.3 (0.800)     | 38.4 (1.510)     | 22.1 (0.870) | 15                    |
| SM-3  |                                       |                                                                 | 11.4 (0.450)     | 26.7 (1.050)     | 12.7 (0.500) | 10                    |
| SM-4  |                                       | For "J" & "L" Leads, "B" Dimension = "A" Dimension Plus 0.080"  | 10.2 (0.400)     | 10.2 (0.400)     | 11.2 (0.440) | 4                     |
| SM-5  |                                       |                                                                 | 6.35 (0.250)     | 6.35 (0.250)     | 7.62 (0.300) | 3                     |
| SM-6  |                                       |                                                                 | 31.8 (1.250)     | 52.1 (2.050)     | 34.3 (1.350) | 20                    |

Note: For SM5 add 0.127 (0.005) to max. and nominal dimensions A, B, D, & E

# SMPS Stacked MLC Capacitors

(SM Style)



U.S. Preferred Styles

## Max Capacitance (μF) Available Versus Style with Height (A) of 0.120" - 3.05mm

| AVX<br>STYLE | SM01 _____ AN120 |      |      |      | SM02 _____ AN120 |      |      |      | SM03 _____ AN120 |      |      |      | SM04 _____ AN120 |      |      |      | SM05 _____ AN120 |      |      |      | SM06 _____ AN120 |      |      |      |
|--------------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|
|              | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V |
| C0G          | 1.0              | .70  | .40  | .18  | 1.2              | 1.0  | .60  | .26  | .46              | .40  | .20  | .09  | .16              | .13  | .07  | .02  | .05              | .04  | .02  | .01  | 3.2              | 2.4  | 1.3  | .50  |
| X7R          | 27               | 12   | 7.0  | 2.6  | 41               | 18   | 11   | 4.0  | 18               | 6.0  | 3.6  | 1.3  | 7.5              | 1.8  | 1.1  | .40  | 2.8              | .68  | .40  | .16  | 80               | 40   | 24   | 9.4  |
| Z5U          | 84               | 32   | 12   | --   | 110              | 46   | 34   | --   | 40               | 15   | 6.0  | --   | 12               | 4.6  | 3.0  | --   | 4.6              | 1.8  | .72  | --   | 260              | 140  | 92   | --   |

## Max Capacitance (μF) Available Versus Style with Height (A) of 0.240" - 6.10mm

| AVX<br>STYLE | SM01 _____ AN240 |      |      |      | SM02 _____ AN240 |      |      |      | SM03 _____ AN240 |      |      |      | SM04 _____ AN240 |      |      |      | SM05 _____ AN240 |      |      |      | SM06 _____ AN240 |      |      |      |
|--------------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|
|              | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V |
| C0G          | 2.0              | 1.4  | .80  | .36  | 2.4              | 2.0  | 1.2  | .52  | .92              | .80  | .40  | .18  | .32              | .26  | .14  | .05  | .10              | .08  | .05  | .02  | 6.4              | 4.8  | 2.6  | 1.0  |
| X7R          | 54               | 24   | 14   | 5.2  | 82               | 36   | 22   | 8.0  | 36               | 12   | 7.2  | 2.6  | 15               | 3.6  | 2.2  | .80  | 5.6              | 1.3  | .80  | .32  | 160              | 80   | 48   | 18   |
| Z5U          | 160              | 64   | 24   | --   | 230              | 92   | 68   | --   | 80               | 30   | 12   | --   | 24               | 9.2  | 6.0  | --   | 9.2              | 3.6  | 1.4  | --   | 520              | 280  | 180  | --   |

## Max Capacitance (μF) Available Versus Style with Height (A) of 0.360" - 9.14mm

| AVX<br>STYLE | SM01 _____ AN360 |      |      |      | SM02 _____ AN360 |      |      |      | SM03 _____ AN360 |      |      |      | SM04 _____ AN360 |      |      |      | SM05 _____ AN360 |      |      |      | SM06 _____ AN360 |      |      |      |
|--------------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|
|              | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V |
| C0G          | 3.0              | 2.1  | 1.2  | .54  | 3.6              | 3.0  | 1.8  | .78  | 1.3              | 1.2  | .60  | .27  | .48              | .39  | .21  | .07  | .15              | .12  | .07  | .03  | 9.6              | 7.2  | 3.9  | 1.5  |
| X7R          | 82               | 36   | 21   | 7.8  | 120              | 54   | 33   | 12   | 54               | 18   | 10   | 3.9  | 22               | 5.4  | 3.3  | 1.2  | 8.2              | 2.0  | 1.2  | .48  | 240              | 120  | 72   | 28   |
| Z5U          | 250              | 96   | 36   | --   | 350              | 130  | 100  | --   | 120              | 45   | 18   | --   | 36               | 13   | 9.0  | --   | 13               | 5.4  | 2.1  | --   | 780              | 430  | 270  | --   |

## Max Capacitance (μF) Available Versus Style with Height (A) of 0.480" - 12.2mm

| AVX<br>STYLE | SM01 _____ AN480 |      |      |      | SM02 _____ AN480 |      |      |      | SM03 _____ AN480 |      |      |      | SM04 _____ AN480 |      |      |      | SM05 _____ AN480 |      |      |      | SM06 _____ AN480 |      |      |      |
|--------------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|
|              | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V |
| C0G          | 4.0              | 2.8  | 1.6  | .72  | 4.8              | 4.0  | 2.2  | 1.0  | 1.8              | 1.6  | .80  | .36  | .64              | .52  | .28  | .10  | .20              | .16  | .10  | .04  | 12               | 9.6  | 5.2  | 2.0  |
| X7R          | 110              | 48   | 28   | 10   | 160              | 72   | 44   | 16   | 72               | 24   | 14   | 5.2  | 30               | 7.2  | 4.4  | 1.6  | 10               | 2.7  | 1.6  | .64  | 320              | 160  | 96   | 37   |
| Z5U          | 330              | 120  | 48   | --   | 470              | 180  | 130  | --   | 160              | 60   | 24   | --   | 48               | 18   | 12   | --   | 18               | 7.2  | 2.8  | --   | 1000             | 570  | 360  | --   |

## Max Capacitance (μF) Available Versus Style with Height (A) of 0.650" - 16.5mm

| AVX<br>STYLE | SM01 _____ AN650 |      |      |      | SM02 _____ AN650 |      |      |      | SM03 _____ AN650 |      |      |      | SM04 _____ AN650 |      |      |      | SM05 _____ AN650 |      |      |      | SM06 _____ AN650 |      |      |      |
|--------------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|------------------|------|------|------|
|              | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V | 50V              | 100V | 200V | 500V |
| C0G          | 5.0              | 3.5  | 2.0  | .90  | 6.0              | 5.0  | 3.0  | 1.3  | 2.3              | 2.0  | 1.0  | .45  | .80              | .65  | .35  | .12  | .25              | .20  | .12  | .05  | 16               | 12   | 6.5  | 2.5  |
| X7R          | 130              | 60   | 35   | 13   | 200              | 90   | 55   | 20   | 90               | 30   | 18   | 6.5  | 36               | 9.0  | 5.5  | 2.0  | 12               | 3.4  | 2.0  | .80  | 400              | 200  | 120  | 47   |
| Z5U          | 420              | 160  | 60   | --   | 590              | 230  | 170  | --   | 200              | 75   | 30   | --   | 60               | 23   | 15   | --   | 23               | 9.0  | 3.6  | --   | 1300             | 720  | 460  | --   |

# SMPS Stacked MLC Capacitors

(SM Style) SM Military Styles MIL-PRF-49470



U.S. Preferred Styles

## AVX IS QUALIFIED TO MIL-PRF-49470/01 AND MIL-PRF-49470/02

The SMPS capacitors are designed for high current, high-power and high-temperature applications. These capacitors have very low ESR (Equivalent Series Resistance) and ESL (Equivalent Series Inductance). SMPS Series capacitors offer design and component engineers a proven technology specifically designed for programs requiring high reliability performance in harsh environments.

MIL-PRF-49470 SMPS Series capacitors are primarily used in input/output filters of high-power and high-voltage power supplies as well as in bus filters and DC snubbers for high power inverters and other high-current applications. These capacitors are available with through-hole and surface mount leads. The operating temperature is -55°C to +125°C. The MIL-PRF-49470 capacitors are preferred over the DSCC

drawing 87106 capacitors. MIL-PRF-49470 specification was created to produce a robust replacement for DSCC 87106. MIL-PRF-49470 offers two product levels.

Level "B" is the standard reliability. Level "T" is the high reliability suitable for space application.

AVX is qualified to supply MIL-PRF-49470/01 parts. These are unencapsulated ceramic dielectric, switch mode power supply capacitors. AVX is also qualified to supply MIL-PRF-49470/02 parts. These are encapsulated ceramic dielectric, switch mode power supply capacitors.

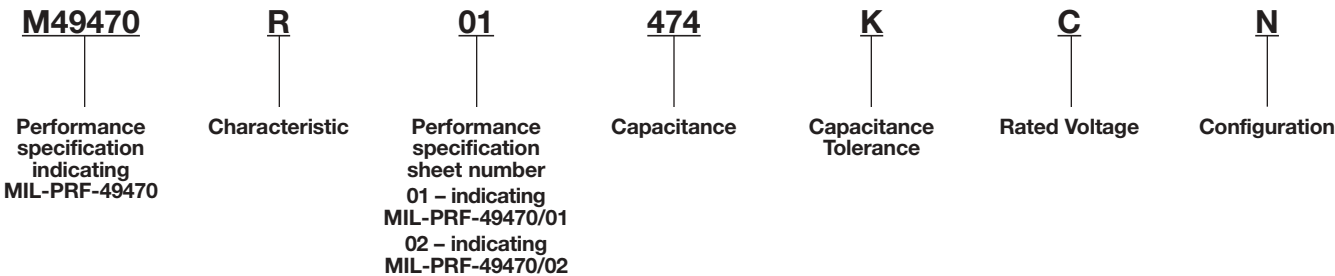
### PLEASE CONTACT THE DSCC WEBSITE

[\[http://www.dscclia.mil/Programs/MilSpec/DocSearch.asp\]](http://www.dscclia.mil/Programs/MilSpec/DocSearch.asp) for details on testing, electrical, mechanical and part number options.

### PLEASE CONTACT THE DSCC WEBSITE

[\[http://www.dscclia.mil/Programs/QmlQpl/\]](http://www.dscclia.mil/Programs/QmlQpl/) for the latest QPL (Qualified Products List).

## HOW TO ORDER



For "T" level parts, replace the "M" in the pin with "T" (for example M49470R01474KCN becomes T49470R01474KCN) MIL-PRF-49470 contains additional capacitors that are not available in 87106, such as additional lead configurations and lower profile parts.

On the pages to follow is the general dimensional outline along with a cross reference from 87106 parts to MIL-PRF-49470 parts.

# SMPS Stacked MLC Capacitors

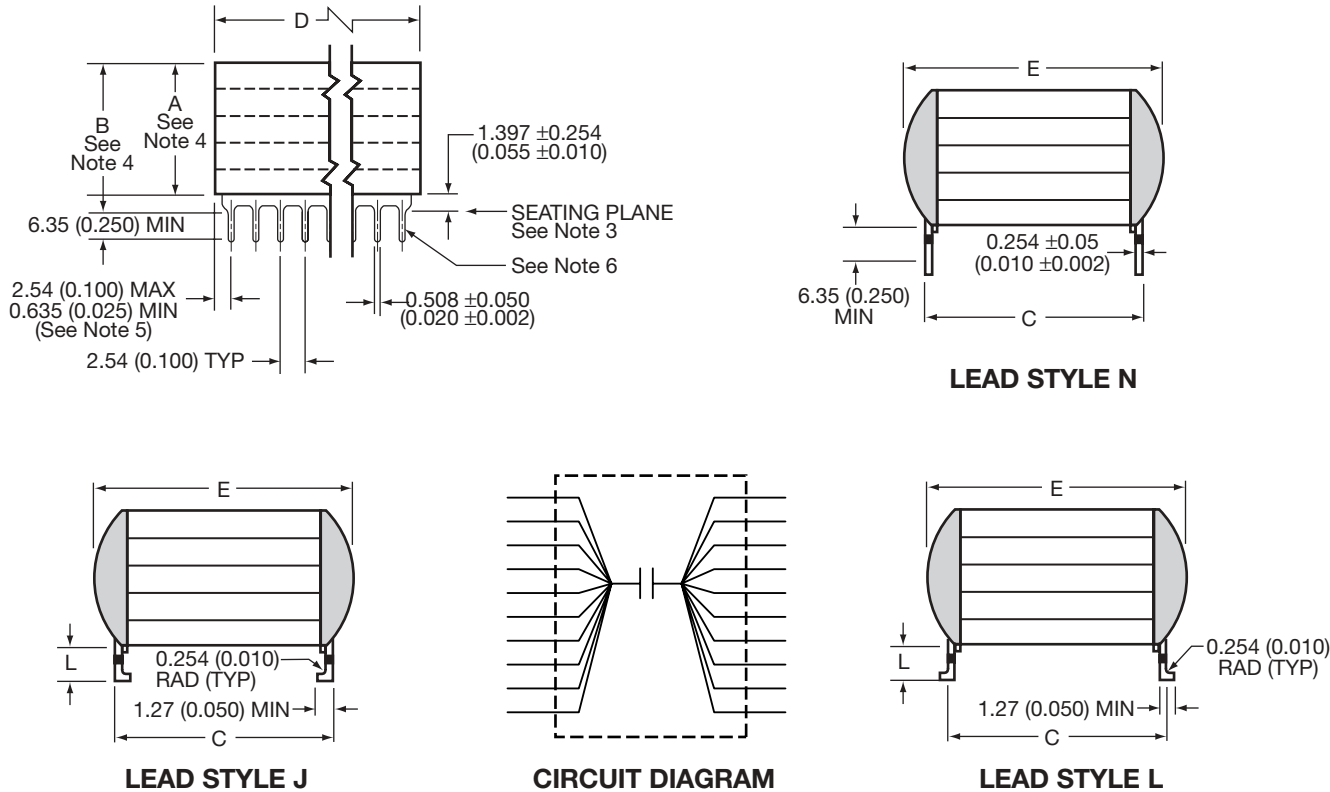
(SM Style) SM Military Styles MIL-PRF-49470/01



U.S. Preferred Styles

## MIL-PRF-49470/01

MIL-PRF-49470/01 - capacitor, fixed, ceramic dielectric, switch mode power supply (general purpose and temperature stable), standard reliability and high reliability unencapsulated, Style PS01.



## DIMENSIONS:

millimeters (inches)

| Case Code | C ±0.635 (±0.025) | D            |              | E (max.)     | Number of Leads per side |
|-----------|-------------------|--------------|--------------|--------------|--------------------------|
|           |                   | Min.         | Max.         |              |                          |
| 1         | 11.4 (0.450)      | 49.5 (1.950) | 52.7 (2.075) | 12.7 (0.500) | 20                       |
| 2         | 20.3 (0.800)      | 36.8 (1.450) | 40.0 (1.535) | 22.1 (0.870) | 15                       |
| 3         | 11.4 (0.450)      | 24.1 (0.950) | 27.3 (1.075) | 12.7 (0.500) | 10                       |
| 4         | 10.2 (0.400)      | 8.89 (0.350) | 10.8 (0.425) | 11.2 (0.440) | 4                        |
| 5         | 6.35 (0.250)      | 6.20 (0.224) | 6.97 (0.275) | 7.62 (0.300) | 3                        |
| 6         | 31.8 (1.250)      | 49.5 (1.950) | 52.7 (2.075) | 34.3 (1.350) | 20                       |

## NOTES:

1. Dimensions are in millimeters (inches)
2. Unless otherwise specified, tolerances are 0.254 (±0.010).
3. Lead frame configuration is shown as typical above the seating plane.
4. See table 1 for specific maximum A dimension. For maximum B dimension, add 1.65 (0.065) to the appropriate A dimension. For all lead styles, the number of chips is determined by the capacitance and voltage rating.
5. For case code 5, dimensions shall be 2.54 (0.100) maximum and 0.305 (0.012) minimum.
6. Lead alignment within pin rows shall be within ±0.10 (0.005).



# SMPS Stacked MLC Capacitors

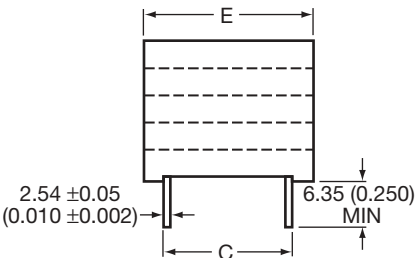
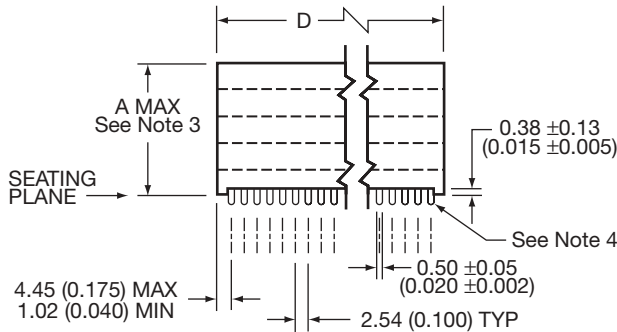
(SM Style) SM Military Styles MIL-PRF-49470/02



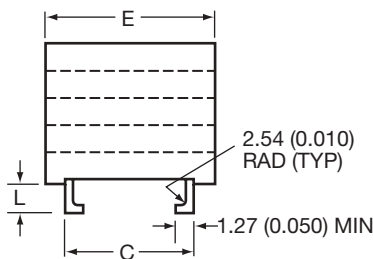
U.S. Preferred Styles

## MIL-PRF-49470/02

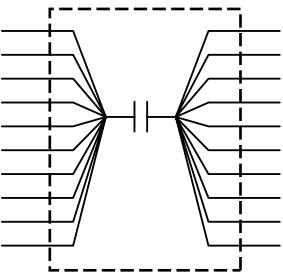
MIL-PRF-49470/02 - capacitor, fixed, ceramic dielectric, switch mode power supply (general purpose and temperature stable), standard reliability and high reliability encapsulated, Style PS02.



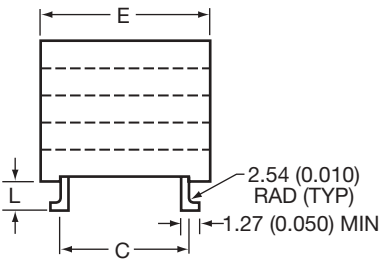
LEAD STYLE N



LEAD STYLE J



CIRCUIT DIAGRAM



LEAD STYLE L

## DIMENSIONS:

millimeters (inches)

| Case Code | C ±0.635 (±0.025) | D ±0.635 (±0.025) | E (max)      | Number of Leads per side |
|-----------|-------------------|-------------------|--------------|--------------------------|
| 1         | 11.4 (0.450)      | 54.7 (2.155)      | 14.7 (0.580) | 20                       |
| 2         | 20.3 (0.800)      | 41.0 (1.615)      | 24.1 (0.950) | 15                       |
| 3         | 11.4 (0.450)      | 29.3 (1.155)      | 14.7 (0.580) | 10                       |
| 4         | 10.2 (0.400)      | 12.3 (0.485)      | 12.3 (0.485) | 4                        |
| 5         | 6.35 (0.250)      | 9.02 (0.355)      | 9.02 (0.355) | 3                        |
| 6         | 31.8 (1.250)      | 54.7 (2.155)      | 36.3 (1.430) | 20                       |

### NOTES:

1. Dimensions are in millimeters (inches)
2. Unless otherwise specified, tolerances are 0.254 (±0.010).
3. See table 1 for specific maximum A dimension. For all lead styles, the number of chips is determined by the capacitance and voltage rating.
4. Lead alignment within pin rows shall be within ±0.10 (0.005).



# SMPS Stacked MLC Capacitors

(SM Style) SM Military Styles MIL-PRF-49470



U.S. Preferred Styles

| 87106- | MIL-PRF-49470 PIN | AVX PART NUMBER | CAP (μF) | TOL  | CASE CODE | VOLT (VDC) |
|--------|-------------------|-----------------|----------|------|-----------|------------|
| 1      | M49470X01105KAN   | SM055C105KHN120 | 1.0      | ±10% | 5         | 50         |
| 2      | M49470X01105MAN   | SM055C105MHN120 | 1.0      | ±20% | 5         | 50         |
| 3      | M49470X01125KAN   | SM055C125KHN120 | 1.2      | ±10% | 5         | 50         |
| 4      | M49470X01125MAN   | SM055C125MHN120 | 1.2      | ±20% | 5         | 50         |
| 5      | M49470X01155KAN   | SM055C155KHN240 | 1.5      | ±10% | 5         | 50         |
| 6      | M49470X01155MAN   | SM055C155MHN240 | 1.5      | ±20% | 5         | 50         |
| 7      | M49470X01185KAN   | SM055C185KHN240 | 1.8      | ±10% | 5         | 50         |
| 8      | M49470X01185MAN   | SM055C185MHN240 | 1.8      | ±20% | 5         | 50         |
| 9      | M49470X01225KAN   | SM055C225KHN240 | 2.2      | ±10% | 5         | 50         |
| 10     | M49470X01225MAN   | SM055C225MHN240 | 2.2      | ±20% | 5         | 50         |
| 11     | M49470X01275KAN   | SM055C275KHN360 | 2.7      | ±10% | 5         | 50         |
| 12     | M49470X01275MAN   | SM055C275MHN360 | 2.7      | ±20% | 5         | 50         |
| 13     | M49470X01335KAN   | SM055C335KHN360 | 3.3      | ±10% | 5         | 50         |
| 14     | M49470X01335MAN   | SM055C335MHN360 | 3.3      | ±20% | 5         | 50         |
| 15     | M49470X01395KAN   | SM055C395KHN480 | 3.9      | ±10% | 5         | 50         |
| 16     | M49470X01395MAN   | SM055C395MHN480 | 3.9      | ±20% | 5         | 50         |
| 17     | M49470X01475KAN   | SM055C475KHN480 | 4.7      | ±10% | 5         | 50         |
| 18     | M49470X01475MAN   | SM055C475MHN480 | 4.7      | ±20% | 5         | 50         |
|        | M49470X01475KAA   | SM045C475KHN240 | 4.7      | ±10% | 4         | 50         |
|        | M49470X01475MAA   | SM045C475MHN240 | 4.7      | ±20% | 4         | 50         |
| 19     | M49470X01565KAN   | SM055C565KHN650 | 5.6      | ±10% | 5         | 50         |
| 20     | M49470X01565MAN   | SM055C565MHN650 | 5.6      | ±20% | 5         | 50         |
|        | M49470X01565KAA   | SM045C565KHN240 | 5.6      | ±10% | 4         | 50         |
|        | M49470X01565MAA   | SM045C565MHN240 | 5.6      | ±20% | 4         | 50         |
| 21     | M49470X01825KAN   | SM045C825KHN360 | 8.2      | ±10% | 4         | 50         |
| 22     | M49470X01825MAN   | SM045C825MHN360 | 8.2      | ±20% | 4         | 50         |
| 23     | M49470X01106KAN   | SM045C106KHN480 | 10       | ±10% | 4         | 50         |
| 24     | M49470X01106MAN   | SM045C106MHN480 | 10       | ±20% | 4         | 50         |
| 25     | M49470X01126KAN   | SM045C126KHN480 | 12       | ±10% | 4         | 50         |
| 26     | M49470X01126MAN   | SM045C126MHN480 | 12       | ±20% | 4         | 50         |
| 27     | M49470X01156KAN   | SM045C156KHN650 | 15       | ±10% | 4         | 50         |
| 28     | M49470X01156MAN   | SM045C156MHN650 | 15       | ±20% | 4         | 50         |
|        | M49470X01156KAA   | SM035C156KHN240 | 15       | ±10% | 3         | 50         |
|        | M49470X01156MAA   | SM035C156MHN240 | 15       | ±20% | 3         | 50         |
| 29     | M49470X01186KAN   | SM035C186KHN240 | 18       | ±10% | 3         | 50         |
| 30     | M49470X01186MAN   | SM035C186MHN240 | 18       | ±20% | 3         | 50         |
| 31     | M49470X01226KAN   | SM035C226KHN360 | 22       | ±10% | 3         | 50         |
| 32     | M49470X01226MAN   | SM035C226MHN360 | 22       | ±20% | 3         | 50         |
| 33     | M49470X01276KAN   | SM035C276KHN360 | 27       | ±10% | 3         | 50         |
| 34     | M49470X01276MAN   | SM035C276MHN360 | 27       | ±20% | 3         | 50         |
| 35     | M49470X01336KAN   | SM035C336KHN360 | 33       | ±10% | 3         | 50         |
| 36     | M49470X01336MAN   | SM035C336MHN360 | 33       | ±20% | 3         | 50         |
| 37     | M49470X01396KAN   | SM035C396KHN480 | 39       | ±10% | 3         | 50         |
| 38     | M49470X01396MAN   | SM035C396MHN480 | 39       | ±20% | 3         | 50         |
| 39     | M49470X01476KAN   | SM035C476KHN650 | 47       | ±10% | 3         | 50         |
| 40     | M49470X01476MAN   | SM035C476MHN650 | 47       | ±20% | 3         | 50         |
|        | M49470X01476KAA   | SM025C476KHN240 | 47       | ±10% | 2         | 50         |
|        | M49470X01476MAA   | SM025C476MHN240 | 47       | ±20% | 2         | 50         |
| 41     | M49470X01686KAN   | SM015C686KHN480 | 68       | ±10% | 1         | 50         |
| 42     | M49470X01686MAN   | SM015C686MHN480 | 68       | ±20% | 1         | 50         |
|        | M49470X01686KAA   | SM025C686KHN360 | 68       | ±10% | 2         | 50         |
|        | M49470X01686MAA   | SM025C686MHN360 | 68       | ±20% | 2         | 50         |
| 43     | M49470X01826KAN   | SM015C826KHN480 | 82       | ±10% | 1         | 50         |
| 44     | M49470X01826MAN   | SM015C826MHN480 | 82       | ±20% | 1         | 50         |
|        | M49470X01826KAA   | SM025C826KHN360 | 82       | ±10% | 2         | 50         |
|        | M49470X01826MAA   | SM025C826MHN360 | 82       | ±20% | 2         | 50         |
| 45     | M49470X01107KAN   | SM015C107KHN650 | 100      | ±10% | 1         | 50         |
| 46     | M49470X01107MAN   | SM015C107MHN650 | 100      | ±20% | 1         | 50         |
|        | M49470X01107KAA   | SM025C107KHN480 | 100      | ±10% | 2         | 50         |
|        | M49470X01107MAA   | SM025C107MHN480 | 100      | ±20% | 2         | 50         |
| 47     | M49470X01157KAN   | SM025C157KHN650 | 150      | ±10% | 2         | 50         |
| 48     | M49470X01157MAN   | SM025C157MHN650 | 150      | ±20% | 2         | 50         |

| 87106- | MIL-PRF-49470 PIN | AVX PART NUMBER | CAP (μF) | TOL  | CASE CODE | VOLT (VDC) |
|--------|-------------------|-----------------|----------|------|-----------|------------|
| 49     | M49470X01187KAN   | SM065C187KHN480 | 180      | ±10% | 6         | 50         |
| 50     | M49470X01187MAN   | SM065C187MHN480 | 180      | ±20% | 6         | 50         |
| 51     | M49470X01227KAN   | SM065C227KHN480 | 220      | ±10% | 6         | 50         |
| 52     | M49470X01227MAN   | SM065C227MHN480 | 220      | ±20% | 6         | 50         |
| 53     | M49470X01277KAN   | SM065C277KHN650 | 270      | ±10% | 6         | 50         |
| 54     | M49470X01277MAN   | SM065C277MHN650 | 270      | ±20% | 6         | 50         |
| 55     | M49470X01684KBN   | SM051C684KHN120 | 0.68     | ±10% | 5         | 100        |
| 56     | M49470X01684MBN   | SM051C684MHN120 | 0.68     | ±20% | 5         | 100        |
| 57     | M49470X01824KBN   | SM051C824KHN240 | 0.82     | ±10% | 5         | 100        |
| 58     | M49470X01824MBN   | SM051C824MHN240 | 0.82     | ±20% | 5         | 100        |
| 59     | M49470X01105KBN   | SM051C105KHN240 | 1.0      | ±10% | 5         | 100        |
| 60     | M49470X01105MBN   | SM051C105MHN240 | 1.0      | ±20% | 5         | 100        |
| 61     | M49470X01125KBN   | SM051C125KHN240 | 1.2      | ±10% | 5         | 100        |
| 62     | M49470X01125MBN   | SM051C125MHN240 | 1.2      | ±20% | 5         | 100        |
| 63     | M49470X01155KBN   | SM051C155KHN360 | 1.5      | ±10% | 5         | 100        |
| 64     | M49470X01155MBN   | SM051C155MHN360 | 1.5      | ±20% | 5         | 100        |
| 65     | M49470X01185KBN   | SM051C185KHN360 | 1.8      | ±10% | 5         | 100        |
| 66     | M49470X01185MBN   | SM051C185MHN360 | 1.8      | ±20% | 5         | 100        |
| 67     | M49470X01225KBN   | SM051C225KHN480 | 2.2      | ±10% | 5         | 100        |
| 68     | M49470X01225MBN   | SM051C225MHN480 | 2.2      | ±20% | 5         | 100        |
|        | M49470X01225KBA   | SM041C225KHN240 | 2.2      | ±10% | 4         | 100        |
|        | M49470X01225MBA   | SM041C225MHN240 | 2.2      | ±20% | 4         | 100        |
| 69     | M49470X01275KBN   | SM051C275KHN480 | 2.7      | ±10% | 5         | 100        |
| 70     | M49470X01275MBN   | SM051C275MHN480 | 2.7      | ±20% | 5         | 100        |
| 71     | M49470X01335KBN   | SM051C335KHN650 | 3.3      | ±10% | 5         | 100        |
| 72     | M49470X01335MBN   | SM051C335MHN650 | 3.3      | ±20% | 5         | 100        |
|        | M49470X01335KBA   | SM041C335KHN240 | 3.3      | ±10% | 4         | 100        |
|        | M49470X01335MBA   | SM041C335MHN240 | 3.3      | ±20% | 4         | 100        |
| 73     | M49470X01395KBN   | SM041C395KHN360 | 3.9      | ±10% | 4         | 100        |
| 74     | M49470X01395MBN   | SM041C395MHN360 | 3.9      | ±20% | 4         | 100        |
| 75     | M49470X01475KBN   | SM041C475KHN360 | 4.7      | ±10% | 4         | 100        |
| 76     | M49470X01475MBN   | SM041C475MHN360 | 4.7      | ±20% | 4         | 100        |
| 77     | M49470X01565KBN   | SM041C565KHN480 | 5.6      | ±10% | 4         | 100        |
| 78     | M49470X01565MBN   | SM041C565MHN480 | 5.6      | ±20% | 4         | 100        |
| 79     | M49470X01685KBN   | SM041C685KHN480 | 6.8      | ±10% | 4         | 100        |
| 80     | M49470X01685MBN   | SM041C685MHN480 | 6.8      | ±20% | 4         | 100        |
| 81     | M49470X01825KBN   | SM041C825KHN650 | 8.2      | ±10% | 4         | 100        |
| 82     | M49470X01825MBN   | SM041C825MHN650 | 8.2      | ±20% | 4         | 100        |
|        | M49470X01825KBA   | SM031C825KHN240 | 8.2      | ±10% | 3         | 100        |
|        | M49470X01825MBA   | SM031C825MHN240 | 8.2      | ±20% | 3         | 100        |
| 83     | M49470X01126KBN   | SM031C126KHN240 | 12       | ±10% | 3         | 100        |
| 84     | M49470X01126MBN   | SM031C126MHN240 | 12       | ±20% | 3         | 100        |
| 85     | M49470X01156KBN   | SM031C156KHN360 | 15       | ±10% | 3         | 100        |
| 86     | M49470X01156MBN   | SM031C156MHN360 | 15       | ±20% | 3         | 100        |
| 87     | M49470X01186KBN   | SM031C186KHN360 | 18       | ±10% | 3         | 100        |
| 88     | M49470X01186MBN   | SM031C186MHN360 | 18       | ±20% | 3         | 100        |
| 89     | M49470X01226KBN   | SM031C226KHN480 | 22       | ±10% | 3         | 100        |
| 90     | M49470X01226MBN   | SM031C226MHN480 | 22       | ±20% | 3         | 100        |
| 91     | M49470X01276KBN   | SM031C276KHN650 | 27       | ±10% | 3         | 100        |
| 92     | M49470X01276MBN   | SM031C276MHN650 | 27       | ±20% | 3         | 100        |
|        | M49470X01276KBA   | SM021C276KHN240 | 27       | ±10% | 2         | 100        |
|        | M49470X01276MBA   | SM021C276MHN240 | 27       | ±20% | 2         | 100        |
| 93     | M49470X01336KBN   | SM011C336KHN360 | 33       | ±10% | 1         | 100        |
| 94     | M49470X01336MBN   | SM011C336MHN360 | 33       | ±20% | 1         | 100        |
|        | M49470X01336KBA   | SM021C336KHN240 | 33       | ±10% | 2         | 100        |
|        | M49470X01336MBA   | SM021C336MHN240 | 33       | ±20% | 2         | 100        |
| 95     | M49470X01396KBN   | SM011C396KHN480 | 39       | ±10% | 1         | 100        |
| 96     | M49470X01396MBN   | SM011C396MHN480 | 39       | ±20% | 1         | 100        |
|        | M49470X01396KBA   | SM021C396KHN360 | 39       | ±10% | 2         | 100        |
|        | M49470X01396MBA   | SM021C396MHN360 | 39       | ±20% | 2         | 100        |
| 97     | M49470X01476KBN   | SM011C476KHN480 | 47       | ±10% | 1         | 100        |
| 98     | M49470X01476MBN   | SM011C476MHN480 | 47       | ±20% | 1         | 100        |

# SMPS Stacked MLC Capacitors

(SM Style) SM Military Styles MIL-PRF-49470



U.S. Preferred Styles

| 87106- | MIL-PRF-49470 PIN | AVX PART NUMBER | CAP (μF) | TOL  | CASE CODE | VOLT (VDC) |
|--------|-------------------|-----------------|----------|------|-----------|------------|
|        | M49470X01476KBA   | SM021C476KHN360 | 47       | ±10% | 2         | 100        |
|        | M49470X01476MBA   | SM021C476MHN360 | 47       | ±20% | 2         | 100        |
| 99     | M49470X01566KBN   | SM011C566KHN650 | 56       | ±10% | 1         | 100        |
| 100    | M49470X01566MBN   | SM011C566MHN650 | 56       | ±20% | 1         | 100        |
| 101    | M49470X01686KBN   | SM021C686KHN480 | 68       | ±10% | 2         | 100        |
| 102    | M49470X01686MBN   | SM021C686MHN480 | 68       | ±20% | 2         | 100        |
| 103    | M49470X01826KBN   | SM021C826KHN650 | 82       | ±10% | 2         | 100        |
| 104    | M49470X01826MBN   | SM021C826MHN650 | 82       | ±20% | 2         | 100        |
| 105    | M49470X01107KBN   | SM061C107KHN360 | 100      | ±10% | 6         | 100        |
| 106    | M49470X01107MBN   | SM061C107MHN360 | 100      | ±20% | 6         | 100        |
| 107    | M49470X01127KBN   | SM061C127KHN360 | 120      | ±10% | 6         | 100        |
| 108    | M49470X01127MBN   | SM061C127MHN360 | 120      | ±20% | 6         | 100        |
| 109    | M49470X01157KBN   | SM061C157KHN480 | 150      | ±10% | 6         | 100        |
| 110    | M49470X01157MBN   | SM061C157MHN480 | 150      | ±20% | 6         | 100        |
| 111    | M49470X01187KBN   | SM061C187KHN650 | 180      | ±10% | 6         | 100        |
| 112    | M49470X01187MBN   | SM061C187MHN650 | 180      | ±20% | 6         | 100        |
| 113    | M49470R01474KCN   | SM052C474KHN240 | 0.47     | ±10% | 5         | 200        |
| 114    | M49470R01474MCN   | SM052C474MHN240 | 0.47     | ±20% | 5         | 200        |
| 115    | M49470R01564KCN   | SM052C564KHN240 | 0.56     | ±10% | 5         | 200        |
| 116    | M49470R01564MCN   | SM052C564MHN240 | 0.56     | ±20% | 5         | 200        |
| 117    | M49470R01684KCN   | SM052C684KHN360 | 0.68     | ±10% | 5         | 200        |
| 118    | M49470R01684MCN   | SM052C684MHN360 | 0.68     | ±20% | 5         | 200        |
| 119    | M49470R01824KCN   | SM052C824KHN360 | 0.82     | ±10% | 5         | 200        |
| 120    | M49470R01824MCN   | SM052C824MHN360 | 0.82     | ±20% | 5         | 200        |
| 121    | M49470R01105KCN   | SM052C105KHN480 | 1.0      | ±10% | 5         | 200        |
| 122    | M49470R01105MCN   | SM052C105MHN480 | 1.0      | ±20% | 5         | 200        |
|        | M49470R01105KCA   | SM042C105KHN120 | 1.0      | ±10% | 4         | 200        |
|        | M49470R01105MCA   | SM042C105MHN120 | 1.0      | ±20% | 4         | 200        |
| 123    | M49470R01125KCN   | SM052C125KHN480 | 1.2      | ±10% | 5         | 200        |
| 124    | M49470R01125MCN   | SM052C125MHN480 | 1.2      | ±20% | 5         | 200        |
|        | M49470R01125KCA   | SM042C125KHN240 | 1.2      | ±10% | 4         | 200        |
|        | M49470R01125MCA   | SM042C125MHN240 | 1.2      | ±20% | 4         | 200        |
| 125    | M49470R01155KCN   | SM052C155KHN650 | 1.5      | ±10% | 5         | 200        |
| 126    | M49470R01155MCN   | SM052C155MHN650 | 1.5      | ±20% | 5         | 200        |
|        | M49470R01155KCA   | SM042C155KHN240 | 1.5      | ±10% | 4         | 200        |
|        | M49470R01155MCA   | SM042C155MHN240 | 1.5      | ±20% | 4         | 200        |
| 127    | M49470R01185KCN   | SM042C185KHN360 | 1.8      | ±10% | 4         | 200        |
| 128    | M49470R01185MCN   | SM042C185MHN360 | 1.8      | ±20% | 4         | 200        |
| 129    | M49470R01225KCN   | SM042C225KHN360 | 2.2      | ±10% | 4         | 200        |
| 130    | M49470R01225MCN   | SM042C225MHN360 | 2.2      | ±20% | 4         | 200        |
| 131    | M49470R01275KCN   | SM042C275KHN480 | 2.7      | ±10% | 4         | 200        |
| 132    | M49470R01275MCN   | SM042C275MHN480 | 2.7      | ±20% | 4         | 200        |
| 133    | M49470R01335KCN   | SM042C335KHN480 | 3.3      | ±10% | 4         | 200        |
| 134    | M49470R01335MCN   | SM042C335MHN480 | 3.3      | ±20% | 4         | 200        |
| 135    | M49470R01395KCN   | SM042C395KHN650 | 3.9      | ±10% | 4         | 200        |
| 136    | M49470R01395MCN   | SM042C395MHN650 | 3.9      | ±20% | 4         | 200        |
|        | M49470R01395KCA   | SM032C395KHN240 | 3.9      | ±10% | 3         | 200        |
|        | M49470R01395MCA   | SM032C395MHN240 | 3.9      | ±20% | 3         | 200        |
| 137    | M49470R01475KCN   | SM032C475KHN240 | 4.7      | ±10% | 3         | 200        |
| 138    | M49470R01475MCN   | SM032C475MHN240 | 4.7      | ±20% | 3         | 200        |
| 139    | M49470R01565KCN   | SM032C565KHN240 | 5.6      | ±10% | 3         | 200        |
| 140    | M49470R01565MCN   | SM032C565MHN240 | 5.6      | ±20% | 3         | 200        |
| 141    | M49470R01685KCN   | SM032C685KHN360 | 6.8      | ±10% | 3         | 200        |
| 142    | M49470R01685MCN   | SM032C685MHN360 | 6.8      | ±20% | 3         | 200        |
| 143    | M49470R01825KCN   | SM032C825KHN360 | 8.2      | ±10% | 3         | 200        |
| 144    | M49470R01825MCN   | SM032C825MHN360 | 8.2      | ±20% | 3         | 200        |
| 145    | M49470R01106KCN   | SM032C106KHN480 | 10       | ±10% | 3         | 200        |
| 146    | M49470R01106MCN   | SM032C106MHN480 | 10       | ±20% | 3         | 200        |
| 147    | M49470R01126KCN   | SM032C126KHN650 | 12       | ±10% | 3         | 200        |
| 148    | M49470R01126MCN   | SM032C126MHN650 | 12       | ±20% | 3         | 200        |
|        | M49470R01126KCA   | SM022C126KHN240 | 12       | ±10% | 2         | 200        |
|        | M49470R01126MCA   | SM022C126MHN240 | 12       | ±20% | 2         | 200        |

| 87106- | MIL-PRF-49470 PIN | AVX PART NUMBER | CAP (μF) | TOL  | CASE CODE | VOLT (VDC) |
|--------|-------------------|-----------------|----------|------|-----------|------------|
| 149    | M49470R01156KCN   | SM012C156KHN360 | 15       | ±10% | 1         | 200        |
| 150    | M49470R01156MCN   | SM012C156MHN360 | 15       | ±20% | 1         | 200        |
|        | M49470R01156KCA   | SM022C156KHN240 | 15       | ±10% | 2         | 200        |
|        | M49470R01156MCA   | SM022C156MHN240 | 15       | ±20% | 2         | 200        |
| 151    | M49470R01186KCN   | SM012C186KHN480 | 18       | ±10% | 1         | 200        |
| 152    | M49470R01186MCN   | SM012C186MHN480 | 18       | ±20% | 1         | 200        |
|        | M49470R01186KCA   | SM022C186KHN360 | 18       | ±10% | 2         | 200        |
|        | M49470R01186MCA   | SM022C186MHN360 | 18       | ±20% | 2         | 200        |
| 153    | M49470R01226KCN   | SM012C226KHN650 | 22       | ±10% | 1         | 200        |
| 154    | M49470R01226MCN   | SM012C226MHN650 | 22       | ±20% | 1         | 200        |
|        | M49470R01226KCA   | SM022C226KHN360 | 22       | ±10% | 2         | 200        |
|        | M49470R01226MCA   | SM022C226MHN360 | 22       | ±20% | 2         | 200        |
| 155    | M49470R01276KCN   | SM012C276KHN650 | 27       | ±10% | 1         | 200        |
| 156    | M49470R01276MCN   | SM012C276MHN650 | 27       | ±20% | 1         | 200        |
|        | M49470R01276KCA   | SM022C276KHN480 | 27       | ±10% | 2         | 200        |
|        | M49470R01276MCA   | SM022C276MHN480 | 27       | ±20% | 2         | 200        |
| 157    | M49470R01336KCN   | SM022C336KHN480 | 33       | ±10% | 2         | 200        |
| 158    | M49470R01336MCN   | SM022C336MHN480 | 33       | ±20% | 2         | 200        |
| 159    | M49470R01396KCN   | SM022C396KHN650 | 39       | ±10% | 2         | 200        |
| 160    | M49470R01396MCN   | SM022C396MHN650 | 39       | ±20% | 2         | 200        |
| 161    | M49470R01476KCN   | SM062C476KHN240 | 47       | ±10% | 6         | 200        |
| 162    | M49470R01476MCN   | SM062C476MHN240 | 47       | ±20% | 6         | 200        |
| 163    | M49470R01566KCN   | SM062C566KHN360 | 56       | ±10% | 6         | 200        |
| 164    | M49470R01566MCN   | SM062C566MHN360 | 56       | ±20% | 6         | 200        |
| 165    | M49470R01686KCN   | SM062C686KHN360 | 68       | ±10% | 6         | 200        |
| 166    | M49470R01686MCN   | SM062C686MHN360 | 68       | ±20% | 6         | 200        |
| 167    | M49470R01826KCN   | SM062C826KHN480 | 82       | ±10% | 6         | 200        |
| 168    | M49470R01826MCN   | SM062C826MHN480 | 82       | ±20% | 6         | 200        |
| 169    | M49470R01107KCN   | SM062C107KHN650 | 100      | ±10% | 6         | 200        |
| 170    | M49470R01107MCN   | SM062C107MHN650 | 100      | ±20% | 6         | 200        |
| 171    | M49470R01127KCN   | SM062C127KHN650 | 120      | ±10% | 6         | 200        |
| 172    | M49470R01127MCN   | SM062C127MHN650 | 120      | ±20% | 6         | 200        |
| 173    | M49470Q01154KEN   | SM057C154KHN120 | 0.15     | ±10% | 5         | 500        |
| 174    | M49470Q01154MEN   | SM057C154MHN120 | 0.15     | ±20% | 5         | 500        |
| 175    | M49470Q01184KEN   | SM057C184KHN240 | 0.18     | ±10% | 5         | 500        |
| 176    | M49470Q01184MEN   | SM057C184MHN240 | 0.18     | ±20% | 5         | 500        |
| 177    | M49470Q01224KEN   | SM057C224KHN240 | 0.22     | ±10% | 5         | 500        |
| 178    | M49470Q01224MEN   | SM057C224MHN240 | 0.22     | ±20% | 5         | 500        |
| 179    | M49470Q01274KEN   | SM057C274KHN240 | 0.27     | ±10% | 5         | 500        |
| 180    | M49470Q01274MEN   | SM057C274MHN240 | 0.27     | ±20% | 5         | 500        |
| 181    | M49470Q01334KEN   | SM057C334KHN360 | 0.33     | ±10% | 5         | 500        |
| 182    | M49470Q01334MEN   | SM057C334MHN360 | 0.33     | ±20% | 5         | 500        |
| 183    | M49470Q01394KEN   | SM057C394KHN360 | 0.39     | ±10% | 5         | 500        |
| 184    | M49470Q01394MEN   | SM057C394MHN360 | 0.39     | ±20% | 5         | 500        |
| 185    | M49470Q01474KEN   | SM057C474KHN360 | 0.47     | ±10% | 5         | 500        |
| 186    | M49470Q01474MEN   | SM057C474MHN360 | 0.47     | ±20% | 5         | 500        |
| 187    | M49470Q01564KEN   | SM057C564KHN480 | 0.56     | ±10% | 5         | 500        |
| 188    | M49470Q01564MEN   | SM057C564MHN480 | 0.56     | ±20% | 5         | 500        |
|        | M49470Q01564KEA   | SM047C564KHN240 | 0.56     | ±10% | 4         | 500        |
|        | M49470Q01564MEA   | SM047C564MHN240 | 0.56     | ±20% | 4         | 500        |
| 189    | M49470Q01684KEN   | SM057C684KHN650 | 0.68     | ±10% | 5         | 500        |
| 190    | M49470Q01684MEN   | SM057C684MHN650 | 0.68     | ±20% | 5         | 500        |
|        | M49470Q01684KEA   | SM047C684KHN360 | 0.68     | ±10% | 4         | 500        |
|        | M49470Q01684MEA   | SM047C684MHN360 | 0.68     | ±20% | 4         | 500        |
| 191    | M49470Q01105KEN   | SM047C105KHN360 | 1.0      | ±10% | 4         | 500        |
| 192    | M49470Q01105MEN   | SM047C105MHN360 | 1.0      | ±20% | 4         | 500        |
| 193    | M49470Q01125KEN   | SM047C125KHN360 | 1.2      | ±10% | 4         | 500        |
| 194    | M49470Q01125MEN   | SM047C125MHN360 | 1.2      | ±20% | 4         | 500        |
| 195    | M49470Q01155KEN   | SM047C155KHN480 | 1.5      | ±10% | 4         | 500        |
| 196    | M49470Q01155MEN   | SM047C155MHN480 | 1.5      | ±20% | 4         | 500        |
| 197    | M49470Q01185KEN   | SM047C185KHN650 | 1.8      | ±10% | 4         | 500        |
| 198    | M49470Q01185MEN   | SM047C185MHN650 | 1.8      | ±20% | 4         | 500        |



# SMPS Stacked MLC Capacitors

(SM Style) SM Military Styles MIL-PRF-49470



U.S. Preferred Styles

| 87106- | MIL-PRF-49470 PIN | AVX PART NUMBER | CAP (μF) | TOL  | CASE CODE | VOLT (VDC) |
|--------|-------------------|-----------------|----------|------|-----------|------------|
|        | M49470Q01185KEA   | SM037C185KHN240 | 1.8      | ±10% | 3         | 500        |
|        | M49470Q01185MEA   | SM037C185MHN240 | 1.8      | ±20% | 3         | 500        |
| 199    | M49470Q01275KEN   | SM037C275KHN360 | 2.7      | ±10% | 3         | 500        |
| 200    | M49470Q01275MEN   | SM037C275MHN360 | 2.7      | ±20% | 3         | 500        |
| 201    | M49470Q01335KEN   | SM037C335KHN360 | 3.3      | ±10% | 3         | 500        |
| 202    | M49470Q01335MEN   | SM037C335MHN360 | 3.3      | ±20% | 3         | 500        |
| 203    | M49470Q01395KEN   | SM037C395KHN360 | 3.9      | ±10% | 3         | 500        |
| 204    | M49470Q01395MEN   | SM037C395MHN360 | 3.9      | ±20% | 3         | 500        |
| 205    | M49470Q01475KEN   | SM037C475KHN480 | 4.7      | ±10% | 3         | 500        |
| 206    | M49470Q01475MEN   | SM037C475MHN480 | 4.7      | ±20% | 3         | 500        |
| 207    | M49470Q01565KEN   | SM037C565KHN650 | 5.6      | ±10% | 3         | 500        |
| 208    | M49470Q01565MEN   | SM037C565MHN650 | 5.6      | ±20% | 3         | 500        |
|        | M49470Q01565KEA   | SM027C565KHN240 | 5.6      | ±10% | 2         | 500        |
|        | M49470Q01565MEA   | SM027C565MHN240 | 5.6      | ±20% | 2         | 500        |
| 209    | M49470Q01825KEN   | SM017C825KHN480 | 8.2      | ±10% | 1         | 500        |
| 210    | M49470Q01825MEN   | SM017C825MHN480 | 8.2      | ±20% | 1         | 500        |
|        | M49470Q01825KEA   | SM027C825KHN360 | 8.2      | ±10% | 2         | 500        |
|        | M49470Q01825MEA   | SM027C825MHN360 | 8.2      | ±20% | 2         | 500        |
| 211    | M49470Q01106KEN   | SM017C106KHN480 | 10       | ±10% | 1         | 500        |
| 212    | M49470Q01106MEN   | SM017C106MHN480 | 10       | ±20% | 1         | 500        |
|        | M49470Q01106KEA   | SM027C106KHN360 | 10       | ±10% | 2         | 500        |
|        | M49470Q01106MEA   | SM027C106MHN360 | 10       | ±20% | 2         | 500        |
| 213    | M49470Q01126KEN   | SM017C126KHN650 | 12       | ±10% | 1         | 500        |
| 214    | M49470Q01126MEN   | SM017C126MHN650 | 12       | ±20% | 1         | 500        |
|        | M49470Q01126KEA   | SM027C126KHN480 | 12       | ±10% | 2         | 500        |
|        | M49470Q01126MEA   | SM027C126MHN480 | 12       | ±20% | 2         | 500        |
| 215    | M49470Q01186KEN   | SM027C186KHN650 | 18       | ±10% | 2         | 500        |
| 216    | M49470Q01186MEN   | SM027C186MHN650 | 18       | ±20% | 2         | 500        |
| 217    | M49470Q01276KEN   | SM067C276KHN360 | 27       | ±10% | 6         | 500        |
| 218    | M49470Q01276MEN   | SM067C276MHN360 | 27       | ±20% | 6         | 500        |
| 219    | M49470Q01336KEN   | SM067C336KHN480 | 33       | ±10% | 6         | 500        |
| 220    | M49470Q01336MEN   | SM067C336MHN480 | 33       | ±20% | 6         | 500        |
| 221    | M49470Q01396KEN   | SM067C396KHN650 | 39       | ±10% | 6         | 500        |
| 222    | M49470Q01396MEN   | SM067C396MHN650 | 39       | ±20% | 6         | 500        |
| 223    | M49470X01685KAN   | SM045C685KHN360 | 6.8      | ±10% | 4         | 50         |
| 224    | M49470X01685MAN   | SM045C685MHN360 | 6.8      | ±20% | 4         | 50         |
| 225    | M49470X01566KAN   | SM015C566KHN360 | 56       | ±10% | 1         | 50         |
| 226    | M49470X01566MAN   | SM015C566MHN360 | 56       | ±20% | 1         | 50         |
|        | M49470X01566KAA   | SM025C566KHN240 | 56       | ±10% | 2         | 50         |
|        | M49470X01566MAA   | SM025C566MHN240 | 56       | ±20% | 2         | 50         |
| 227    | M49470X01127KAN   | SM025C127KHN480 | 120      | ±10% | 2         | 50         |
| 228    | M49470X01127MAN   | SM025C127MHN480 | 120      | ±20% | 2         | 50         |
| 229    | M49470X01106KBN   | SM031C106KHN240 | 10       | ±10% | 3         | 100        |
| 230    | M49470X01106MBN   | SM031C106MHN240 | 10       | ±20% | 3         | 100        |
| 231    | M49470Q01824KEN   | SM047C824KHN360 | 0.82     | ±10% | 4         | 500        |
| 232    | M49470Q01824MEN   | SM047C824MHN360 | 0.82     | ±20% | 4         | 500        |
| 233    | M49470Q01225KEN   | SM037C225KHN240 | 2.2      | ±10% | 3         | 500        |
| 234    | M49470Q01225MEN   | SM037C225MHN240 | 2.2      | ±20% | 3         | 500        |
| 235    | M49470Q01685KEN   | SM017C685KHN480 | 6.8      | ±10% | 1         | 500        |
| 236    | M49470Q01685MEN   | SM017C685MHN480 | 6.8      | ±20% | 1         | 500        |
|        | M49470Q01685KEA   | SM027C685KHN240 | 6.8      | ±10% | 2         | 500        |
|        | M49470Q01685MEA   | SM027C685MHN240 | 6.8      | ±20% | 2         | 500        |
| 237    | M49470Q01156KEN   | SM027C156KHN650 | 15       | ±10% | 2         | 500        |
| 238    | M49470Q01156MEN   | SM027C156MHN650 | 15       | ±20% | 2         | 500        |
| 239    | M49470Q01226KEN   | SM067C226KHN360 | 22       | ±10% | 6         | 500        |
| 240    | M49470Q01226MEN   | SM067C226MHN360 | 22       | ±20% | 6         | 500        |
| 241    | M49470X01105KAJ   | SM055C105KHJ120 | 1.0      | ±10% | 5         | 50         |
| 242    | M49470X01105MAJ   | SM055C105MHJ120 | 1.0      | ±20% | 5         | 50         |
| 243    | M49470X01125KAJ   | SM055C125KHJ120 | 1.2      | ±10% | 5         | 50         |
| 244    | M49470X01125MAJ   | SM055C125MHJ120 | 1.2      | ±20% | 5         | 50         |
| 245    | M49470X01155KAJ   | SM055C155KHJ240 | 1.5      | ±10% | 5         | 50         |
| 246    | M49470X01155MAJ   | SM055C155MHJ240 | 1.5      | ±20% | 5         | 50         |

| 87106- | MIL-PRF-49470 PIN | AVX PART NUMBER | CAP (μF) | TOL  | CASE CODE | VOLT (VDC) |
|--------|-------------------|-----------------|----------|------|-----------|------------|
| 247    | M49470X01185KAJ   | SM055C185KHJ240 | 1.8      | ±10% | 5         | 50         |
| 248    | M49470X01185MAJ   | SM055C185MHJ240 | 1.8      | ±20% | 5         | 50         |
| 249    | M49470X01225KAJ   | SM055C225KHJ240 | 2.2      | ±10% | 5         | 50         |
| 250    | M49470X01225MAJ   | SM055C225MHJ240 | 2.2      | ±20% | 5         | 50         |
| 251    | M49470X01275KAJ   | SM055C275KHJ360 | 2.7      | ±10% | 5         | 50         |
| 252    | M49470X01275MAJ   | SM055C275MHJ360 | 2.7      | ±20% | 5         | 50         |
| 253    | M49470X01335KAJ   | SM055C335KHJ360 | 3.3      | ±10% | 5         | 50         |
| 254    | M49470X01335MAJ   | SM055C335MHJ360 | 3.3      | ±20% | 5         | 50         |
| 255    | M49470X01395KAJ   | SM055C395KHJ480 | 3.9      | ±10% | 5         | 50         |
| 256    | M49470X01395MAJ   | SM055C395MHJ480 | 3.9      | ±20% | 5         | 50         |
| 257    | M49470X01475KAJ   | SM055C475KHJ480 | 4.7      | ±10% | 5         | 50         |
| 258    | M49470X01475MAJ   | SM055C475MHJ480 | 4.7      | ±20% | 5         | 50         |
|        | M49470X01475KAC   | SM045C475KHJ240 | 4.7      | ±10% | 4         | 50         |
|        | M49470X01475MAC   | SM045C475MHJ240 | 4.7      | ±20% | 4         | 50         |
| 259    | M49470X01565KAJ   | SM055C565KHJ650 | 5.6      | ±10% | 5         | 50         |
| 260    | M49470X01565MAJ   | SM055C565MHJ650 | 5.6      | ±20% | 5         | 50         |
|        | M49470X01565KAC   | SM045C565KHJ240 | 5.6      | ±10% | 4         | 50         |
|        | M49470X01565MAC   | SM045C565MHJ240 | 5.6      | ±10% | 4         | 50         |
| 261    | M49470X01685KAJ   | SM045C685KHJ360 | 6.8      | ±10% | 4         | 50         |
| 262    | M49470X01685MAJ   | SM045C685MHJ360 | 6.8      | ±20% | 4         | 50         |
| 263    | M49470X01825KAJ   | SM045C825KHJ360 | 8.2      | ±10% | 4         | 50         |
| 264    | M49470X01825MAJ   | SM045C825MHJ360 | 8.2      | ±20% | 4         | 50         |
| 265    | M49470X01106KAJ   | SM045C106KHJ480 | 10       | ±10% | 4         | 50         |
| 266    | M49470X01106MAJ   | SM045C106MHJ480 | 10       | ±20% | 4         | 50         |
| 267    | M49470X01126KAJ   | SM045C126KHJ480 | 12       | ±10% | 4         | 50         |
| 268    | M49470X01126MAJ   | SM045C126MHJ480 | 12       | ±20% | 4         | 50         |
| 269    | M49470X01156KAJ   | SM045C156KHJ650 | 15       | ±10% | 4         | 50         |
| 270    | M49470X01156MAJ   | SM045C156MHJ650 | 15       | ±20% | 4         | 50         |
|        | M49470X01156KAC   | SM035C156KHJ240 | 15       | ±10% | 3         | 50         |
|        | M49470X01156MAC   | SM035C156MHJ240 | 15       | ±20% | 3         | 50         |
| 271    | M49470X01186KAJ   | SM035C186KHJ240 | 18       | ±10% | 3         | 50         |
| 272    | M49470X01186MAJ   | SM035C186MHJ240 | 18       | ±20% | 3         | 50         |
| 273    | M49470X01226KAJ   | SM035C226KHJ360 | 22       | ±10% | 3         | 50         |
| 274    | M49470X01226MAJ   | SM035C226MHJ360 | 22       | ±20% | 3         | 50         |
| 275    | M49470X01276KAJ   | SM035C276KHJ360 | 27       | ±10% | 3         | 50         |
| 276    | M49470X01276MAJ   | SM035C276MHJ360 | 27       | ±20% | 3         | 50         |
| 277    | M49470X01336KAJ   | SM035C336KHJ360 | 33       | ±10% | 3         | 50         |
| 278    | M49470X01336MAJ   | SM035C336MHJ360 | 33       | ±20% | 3         | 50         |
| 279    | M49470X01396KAJ   | SM035C396KHJ480 | 39       | ±10% | 3         | 50         |
| 280    | M49470X01396MAJ   | SM035C396MHJ480 | 39       | ±20% | 3         | 50         |
| 281    | M49470X01476KAJ   | SM035C476KHJ650 | 47       | ±10% | 3         | 50         |
| 282    | M49470X01476MAJ   | SM035C476MHJ650 | 47       | ±20% | 3         | 50         |
|        | M49470X01476KAC   | SM025C476KHJ240 | 47       | ±10% | 2         | 50         |
|        | M49470X01476MAC   | SM025C476MHJ240 | 47       | ±20% | 2         | 50         |
| 283    | M49470X01566KAJ   | SM015C566KHJ360 | 56       | ±10% | 1         | 50         |
| 284    | M49470X01566MAJ   | SM015C566MHJ360 | 56       | ±20% | 1         | 50         |
|        | M49470X01566KAC   | SM025C566KHJ240 | 56       | ±10% | 2         | 50         |
|        | M49470X01566MAC   | SM025C566MHJ240 | 56       | ±20% | 2         | 50         |
| 285    | M49470X01686KAJ   | SM015C686KHJ480 | 68       | ±10% | 1         | 50         |
| 286    | M49470X01686MAJ   | SM015C686MHJ480 | 68       | ±20% | 1         | 50         |
|        | M49470X01686KAC   | SM025C686KHJ360 | 68       | ±10% | 2         | 50         |
|        | M49470X01686MAC   | SM025C686MHJ360 | 68       | ±20% | 2         | 50         |
| 287    | M49470X01826KAJ   | SM015C826KHJ480 | 82       | ±10% | 1         | 50         |
| 288    | M49470X01826MAJ   | SM015C826MHJ480 | 82       | ±20% | 1         | 50         |
|        | M49470X01826KAC   | SM025C826KHJ360 | 82       | ±10% | 2         | 50         |
|        | M49470X01826MAC   | SM025C826MHJ360 | 82       | ±20% | 2         | 50         |
| 289    | M49470X01107KAJ   | SM015C107KHJ650 | 100      | ±10% | 1         | 50         |
| 290    | M49470X01107MAJ   | SM015C107MHJ650 | 100      | ±20% | 1         | 50         |
|        | M49470X01107KAC   | SM025C107KHJ480 | 100      | ±10% | 2         | 50         |
|        | M49470X01107MAC   | SM025C107MHJ480 | 100      | ±20% | 2         | 50         |
| 291    | M49470X01127KAJ   | SM025C127KHJ480 | 120      | ±10% | 2         | 50         |
| 292    | M49470X01127MAJ   | SM025C127MHJ480 | 120      | ±20% | 2         | 50         |

# SMPS Stacked MLC Capacitors

(SM Style) SM Military Styles MIL-PRF-49470



U.S. Preferred Styles

| 87106- | MIL-PRF-49470 PIN | AVX PART NUMBER | CAP (μF) | TOL  | CASE CODE | VOLT (VDC) |
|--------|-------------------|-----------------|----------|------|-----------|------------|
| 293    | M49470X01157KAJ   | SM025C157KHJ650 | 150      | ±10% | 2         | 50         |
| 294    | M49470X01157MAJ   | SM025C157MHJ650 | 150      | ±20% | 2         | 50         |
| 295    | M49470X01187KAJ   | SM065C187KHJ480 | 180      | ±10% | 6         | 50         |
| 296    | M49470X01187MAJ   | SM065C187MHJ480 | 180      | ±20% | 6         | 50         |
| 297    | M49470X01227KAJ   | SM065C227KHJ480 | 220      | ±10% | 6         | 50         |
| 298    | M49470X01227MAJ   | SM065C227MHJ480 | 220      | ±20% | 6         | 50         |
| 299    | M49470X01277KAJ   | SM065C277KHJ650 | 270      | ±10% | 6         | 50         |
| 300    | M49470X01277MAJ   | SM065C277MHJ650 | 270      | ±20% | 6         | 50         |
| 301    | M49470X01684KBJ   | SM051C684KHJ120 | 0.68     | ±10% | 5         | 100        |
| 302    | M49470X01684MBJ   | SM051C684MHJ120 | 0.68     | ±20% | 5         | 100        |
| 303    | M49470X01824KBJ   | SM051C824KHJ240 | 0.82     | ±10% | 5         | 100        |
| 304    | M49470X01824MBJ   | SM051C824MHJ240 | 0.82     | ±20% | 5         | 100        |
| 305    | M49470X01105KBJ   | SM051C105KHJ240 | 1.0      | ±10% | 5         | 100        |
| 306    | M49470X01105MBJ   | SM051C105MHJ240 | 1.0      | ±20% | 5         | 100        |
| 307    | M49470X01125KBJ   | SM051C125KHJ240 | 1.2      | ±10% | 5         | 100        |
| 308    | M49470X01125MBJ   | SM051C125MHJ240 | 1.2      | ±20% | 5         | 100        |
| 309    | M49470X01155KBJ   | SM051C155KHJ360 | 1.5      | ±10% | 5         | 100        |
| 310    | M49470X01155MBJ   | SM051C155MHJ360 | 1.5      | ±20% | 5         | 100        |
| 311    | M49470X01185KBJ   | SM051C185KHJ360 | 1.8      | ±10% | 5         | 100        |
| 312    | M49470X01185MBJ   | SM051C185MHJ360 | 1.8      | ±20% | 5         | 100        |
| 313    | M49470X01225KBJ   | SM051C225KHJ480 | 2.2      | ±10% | 5         | 100        |
| 314    | M49470X01225MBJ   | SM051C225MHJ480 | 2.2      | ±20% | 5         | 100        |
|        | M49470X01225KBC   | SM041C225KHJ240 | 2.2      | ±10% | 4         | 100        |
|        | M49470X01225MBC   | SM041C225MHJ240 | 2.2      | ±20% | 4         | 100        |
| 315    | M49470X01275KBJ   | SM051C275KHJ480 | 2.7      | ±10% | 5         | 100        |
| 316    | M49470X01275MBJ   | SM051C275MHJ480 | 2.7      | ±20% | 5         | 100        |
| 317    | M49470X01335KBJ   | SM051C335KHJ650 | 3.3      | ±10% | 5         | 100        |
| 318    | M49470X01335MBJ   | SM051C335MHJ650 | 3.3      | ±20% | 5         | 100        |
|        | M49470X01335KBC   | SM041C335KHJ240 | 3.3      | ±10% | 4         | 100        |
|        | M49470X01335MBC   | SM041C335MHJ240 | 3.3      | ±20% | 4         | 100        |
| 319    | M49470X01395KBJ   | SM041C395KHJ360 | 3.9      | ±10% | 4         | 100        |
| 320    | M49470X01395MBJ   | SM041C395MHJ360 | 3.9      | ±20% | 4         | 100        |
| 321    | M49470X01475KBJ   | SM041C475KHJ360 | 4.7      | ±10% | 4         | 100        |
| 322    | M49470X01475MBJ   | SM041C475MHJ360 | 4.7      | ±20% | 4         | 100        |
| 323    | M49470X01565KBJ   | SM041C565KHJ480 | 5.6      | ±10% | 4         | 100        |
| 324    | M49470X01565MBJ   | SM041C565MHJ480 | 5.6      | ±20% | 4         | 100        |
| 325    | M49470X01685KBJ   | SM041C685KHJ480 | 6.8      | ±10% | 4         | 100        |
| 326    | M49470X01685MBJ   | SM041C685MHJ480 | 6.8      | ±20% | 4         | 100        |
| 327    | M49470X01825KBJ   | SM041C825KHJ650 | 8.2      | ±10% | 4         | 100        |
| 328    | M49470X01825MBJ   | SM041C825MHJ650 | 8.2      | ±20% | 4         | 100        |
|        | M49470X01825KBC   | SM031C825KHJ240 | 8.2      | ±10% | 3         | 100        |
|        | M49470X01825MBC   | SM031C825MHJ240 | 8.2      | ±20% | 3         | 100        |
| 329    | M49470X01106KBJ   | SM031C106KHJ240 | 10       | ±10% | 3         | 100        |
| 330    | M49470X01106MBJ   | SM031C106MHJ240 | 10       | ±20% | 3         | 100        |
| 331    | M49470X01126KBJ   | SM031C126KHJ240 | 12       | ±10% | 3         | 100        |
| 332    | M49470X01126MBJ   | SM031C126MHJ240 | 12       | ±20% | 3         | 100        |
| 333    | M49470X01156KBJ   | SM031C156KHJ360 | 15       | ±10% | 3         | 100        |
| 334    | M49470X01156MBJ   | SM031C156MHJ360 | 15       | ±20% | 3         | 100        |
| 335    | M49470X01186KBJ   | SM031C186KHJ360 | 18       | ±10% | 3         | 100        |
| 336    | M49470X01186MBJ   | SM031C186MHJ360 | 18       | ±20% | 3         | 100        |
| 337    | M49470X01226KBJ   | SM031C226KHJ480 | 22       | ±10% | 3         | 100        |
| 338    | M49470X01226MBJ   | SM031C226MHJ480 | 22       | ±20% | 3         | 100        |
| 339    | M49470X01276KBJ   | SM031C276KHJ650 | 27       | ±10% | 3         | 100        |
| 340    | M49470X01276MBJ   | SM031C276MHJ650 | 27       | ±20% | 3         | 100        |
|        | M49470X01276KBC   | SM021C276KHJ240 | 27       | ±10% | 2         | 100        |
|        | M49470X01276MBC   | SM021C276MHJ240 | 27       | ±20% | 2         | 100        |
| 341    | M49470X01336KBJ   | SM011C336KHJ360 | 33       | ±10% | 1         | 100        |
| 342    | M49470X01336MBJ   | SM011C336MHJ360 | 33       | ±20% | 1         | 100        |
|        | M49470X01336KBC   | SM021C336KHJ240 | 33       | ±10% | 2         | 100        |
|        | M49470X01336MBC   | SM021C336MHJ240 | 33       | ±20% | 2         | 100        |
| 343    | M49470X01396KBJ   | SM011C396KHJ480 | 39       | ±10% | 1         | 100        |
| 344    | M49470X01396MBJ   | SM011C396MHJ480 | 39       | ±20% | 1         | 100        |

| 87106- | MIL-PRF-49470 PIN | AVX PART NUMBER | CAP (μF) | TOL  | CASE CODE | VOLT (VDC) |
|--------|-------------------|-----------------|----------|------|-----------|------------|
|        | M49470X01396KBC   | SM021C396KHJ360 | 39       | ±10% | 2         | 100        |
|        | M49470X01396MBC   | SM021C396MHJ360 | 39       | ±20% | 2         | 100        |
| 345    | M49470X01476KBJ   | SM011C476KHJ480 | 47       | ±10% | 1         | 100        |
| 346    | M49470X01476MBJ   | SM011C476MHJ480 | 47       | ±20% | 1         | 100        |
|        | M49470X01476KBC   | SM021C476KHJ360 | 47       | ±10% | 2         | 100        |
|        | M49470X01476MBC   | SM021C476MHJ360 | 47       | ±20% | 2         | 100        |
| 347    | M49470X01566KBJ   | SM011C566KHJ650 | 56       | ±10% | 1         | 100        |
| 348    | M49470X01566MBJ   | SM011C566MHJ650 | 56       | ±20% | 1         | 100        |
| 349    | M49470X01686KBJ   | SM021C686KHJ480 | 68       | ±10% | 2         | 100        |
| 350    | M49470X01686MBJ   | SM021C686MHJ480 | 68       | ±20% | 2         | 100        |
| 351    | M49470X01826KBJ   | SM021C826KHJ650 | 82       | ±10% | 2         | 100        |
| 352    | M49470X01826MBJ   | SM021C826MHJ650 | 82       | ±20% | 2         | 100        |
| 353    | M49470X01107KBJ   | SM061C107KHJ360 | 100      | ±10% | 6         | 100        |
| 354    | M49470X01107MBJ   | SM061C107MHJ360 | 100      | ±20% | 6         | 100        |
| 355    | M49470X01127KBJ   | SM061C127KHJ360 | 120      | ±10% | 6         | 100        |
| 356    | M49470X01127MBJ   | SM061C127MHJ360 | 120      | ±20% | 6         | 100        |
| 357    | M49470X01157KBJ   | SM061C157KHJ480 | 150      | ±10% | 6         | 100        |
| 358    | M49470X01157MBJ   | SM061C157MHJ480 | 150      | ±20% | 6         | 100        |
| 359    | M49470X01187KBJ   | SM061C187KHJ650 | 180      | ±10% | 6         | 100        |
| 360    | M49470X01187MBJ   | SM061C187MHJ650 | 180      | ±20% | 6         | 100        |
| 361    | M49470R01474KCJ   | SM052C474KHJ240 | 0.47     | ±10% | 5         | 200        |
| 362    | M49470R01474MCJ   | SM052C474MHJ240 | 0.47     | ±20% | 5         | 200        |
| 363    | M49470R01564KCJ   | SM052C564KHJ240 | 0.56     | ±10% | 5         | 200        |
| 364    | M49470R01564MCJ   | SM052C564MHJ240 | 0.56     | ±20% | 5         | 200        |
| 365    | M49470R01684KCJ   | SM052C684KHJ360 | 0.68     | ±10% | 5         | 200        |
| 366    | M49470R01684MCJ   | SM052C684MHJ360 | 0.68     | ±20% | 5         | 200        |
| 367    | M49470R01824KCJ   | SM052C824KHJ360 | 0.82     | ±10% | 5         | 200        |
| 368    | M49470R01824MCJ   | SM052C824MHJ360 | 0.82     | ±20% | 5         | 200        |
| 369    | M49470R01105KCJ   | SM052C105KHJ480 | 1.0      | ±10% | 5         | 200        |
| 370    | M49470R01105MCJ   | SM052C105MHJ480 | 1.0      | ±20% | 5         | 200        |
|        | M49470R01105KCC   | SM042C105KHJ120 | 1.0      | ±10% | 4         | 200        |
|        | M49470R01105MCC   | SM042C105MHJ120 | 1.0      | ±20% | 4         | 200        |
| 371    | M49470R01125KCJ   | SM052C125KHJ480 | 1.2      | ±10% | 5         | 200        |
| 372    | M49470R01125MCJ   | SM052C125MHJ480 | 1.2      | ±20% | 5         | 200        |
|        | M49470R01125KCC   | SM042C125KHJ240 | 1.2      | ±10% | 4         | 200        |
|        | M49470R01125MCC   | SM042C125MHJ240 | 1.2      | ±20% | 4         | 200        |
| 373    | M49470R01155KCJ   | SM052C155KHJ650 | 1.5      | ±10% | 5         | 200        |
| 374    | M49470R01155MCJ   | SM052C155MHJ650 | 1.5      | ±20% | 5         | 200        |
|        | M49470R01155KCC   | SM042C155KHJ230 | 1.5      | ±10% | 4         | 200        |
|        | M49470R01155MCC   | SM042C155MHJ230 | 1.5      | ±20% | 4         | 200        |
| 375    | M49470R01185KCJ   | SM042C185KHJ360 | 1.8      | ±10% | 4         | 200        |
| 376    | M49470R01185MCJ   | SM042C185MHJ360 | 1.8      | ±20% | 4         | 200        |
| 377    | M49470R01225KCJ   | SM042C225KHJ360 | 2.2      | ±10% | 4         | 200        |
| 378    | M49470R01225MCJ   | SM042C225MHJ360 | 2.2      | ±20% | 4         | 200        |
| 379    | M49470R01275KCJ   | SM042C275KHJ480 | 2.7      | ±10% | 4         | 200        |
| 380    | M49470R01275MCJ   | SM042C275MHJ480 | 2.7      | ±20% | 4         | 200        |
| 381    | M49470R01335KCJ   | SM042C335KHJ480 | 3.3      | ±10% | 4         | 200        |
| 382    | M49470R01335MCJ   | SM042C335MHJ480 | 3.3      | ±20% | 4         | 200        |
| 383    | M49470R01395KCJ   | SM042C395KHJ650 | 3.9      | ±10% | 4         | 200        |
| 384    | M49470R01395MCJ   | SM042C395MHJ650 | 3.9      | ±20% | 4         | 200        |
|        | M49470R01395KCC   | SM032C395KHJ240 | 3.9      | ±10% | 3         | 200        |
|        | M49470R01395MCC   | SM032C395MHJ240 | 3.9      | ±20% | 3         | 200        |
| 385    | M49470R01475KCJ   | SM032C475KHJ240 | 4.7      | ±10% | 3         | 200        |
| 386    | M49470R01475MCJ   | SM032C475MHJ240 | 4.7      | ±20% | 3         | 200        |
| 387    | M49470R01565KCJ   | SM032C565KHJ240 | 5.6      | ±10% | 3         | 200        |
| 388    | M49470R01565MCJ   | SM032C565MHJ240 | 5.6      | ±20% | 3         | 200        |
| 389    | M49470R01685KCJ   | SM032C685KHJ360 | 6.8      | ±10% | 3         | 200        |
| 390    | M49470R01685MCJ   | SM032C685MHJ360 | 6.8      | ±20% | 3         | 200        |
| 391    | M49470R01825KCJ   | SM032C825KHJ360 | 8.2      | ±10% | 3         | 200        |
| 392    | M49470R01825MCJ   | SM032C825MHJ360 | 8.2      | ±20% | 3         | 200        |
| 393    | M49470R01106KCJ   | SM032C106KHJ480 | 10       | ±10% | 3         | 200        |
| 394    | M49470R01106MCJ   | SM032C106MHJ480 | 10       | ±20% | 3         | 200        |



# SMPS Stacked MLC Capacitors

(SM Style) SM Military Styles MIL-PRF-49470



U.S. Preferred Styles

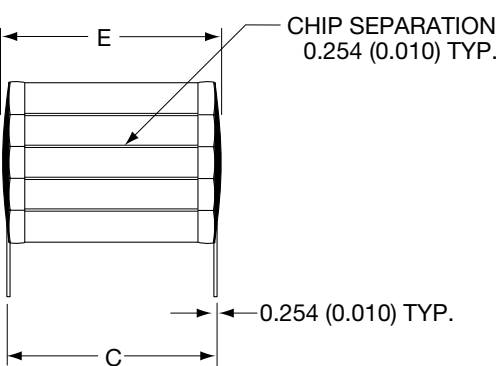
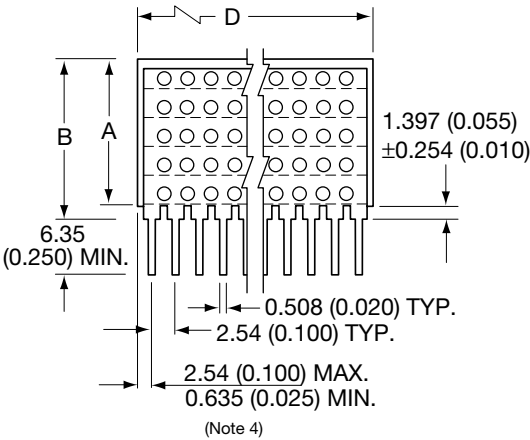
| 87106- | MIL-PRF-49470 PIN | AVX PART NUMBER | CAP (μF) | TOL  | CASE CODE | VOLT (VDC) |
|--------|-------------------|-----------------|----------|------|-----------|------------|
| 395    | M49470R01126KCJ   | SM032C126KHJ650 | 12       | ±10% | 3         | 200        |
| 396    | M49470R01126MCJ   | SM032C126MHJ650 | 12       | ±20% | 3         | 200        |
|        | M49470R01126KCC   | SM022C126KHJ240 | 12       | ±10% | 2         | 200        |
|        | M49470R01126MCC   | SM022C126MHJ240 | 12       | ±20% | 2         | 200        |
| 397    | M49470R01156KCJ   | SM012C156KHJ360 | 15       | ±10% | 1         | 200        |
| 398    | M49470R01156MCJ   | SM012C156MHJ360 | 15       | ±20% | 1         | 200        |
|        | M49470R01156KCC   | SM022C156KHJ240 | 15       | ±10% | 2         | 200        |
|        | M49470R01156MCC   | SM022C156MHJ240 | 15       | ±20% | 2         | 200        |
| 399    | M49470R01186KCJ   | SM012C186KHJ480 | 18       | ±10% | 1         | 200        |
| 400    | M49470R01186MCJ   | SM012C186MHJ480 | 18       | ±20% | 1         | 200        |
|        | M49470R01186KCC   | SM022C186KHJ360 | 18       | ±10% | 2         | 200        |
|        | M49470R01186MCC   | SM022C186MHJ360 | 18       | ±20% | 2         | 200        |
| 401    | M49470R01226KCJ   | SM012C226KHJ650 | 22       | ±10% | 1         | 200        |
| 402    | M49470R01226MCJ   | SM012C226MHJ650 | 22       | ±20% | 1         | 200        |
|        | M49470R01226KCC   | SM022C226KHJ360 | 22       | ±10% | 2         | 200        |
|        | M49470R01226MCC   | SM022C226MHJ360 | 22       | ±20% | 2         | 200        |
| 403    | M49470R01276KCJ   | SM012C276KHJ650 | 27       | ±10% | 1         | 200        |
| 404    | M49470R01276MCJ   | SM012C276MHJ650 | 27       | ±20% | 1         | 200        |
|        | M49470R01276KCC   | SM022C276KHJ480 | 27       | ±10% | 2         | 200        |
|        | M49470R01276MCC   | SM022C276MHJ480 | 27       | ±20% | 2         | 200        |
| 405    | M49470R01336KCJ   | SM022C336KHJ480 | 33       | ±10% | 2         | 200        |
| 406    | M49470R01336MCJ   | SM022C336MHJ480 | 33       | ±20% | 2         | 200        |
| 407    | M49470R01396KCJ   | SM022C396KHJ650 | 39       | ±10% | 2         | 200        |
| 408    | M49470R01396MCJ   | SM022C396MHJ650 | 39       | ±20% | 2         | 200        |
| 409    | M49470R01476KCJ   | SM062C476KHJ240 | 47       | ±10% | 6         | 200        |
| 410    | M49470R01476MCJ   | SM062C476MHJ240 | 47       | ±20% | 6         | 200        |
| 411    | M49470R01566KCJ   | SM062C566KHJ360 | 56       | ±10% | 6         | 200        |
| 412    | M49470R01566MCJ   | SM062C566MHJ360 | 56       | ±20% | 6         | 200        |
| 413    | M49470R01686KCJ   | SM062C686KHJ360 | 68       | ±10% | 6         | 200        |
| 414    | M49470R01686MCJ   | SM062C686MHJ360 | 68       | ±20% | 6         | 200        |
| 415    | M49470R01826KCJ   | SM062C826KHJ480 | 82       | ±10% | 6         | 200        |
| 416    | M49470R01826MCJ   | SM062C826MHJ480 | 82       | ±20% | 6         | 200        |
| 417    | M49470R01107KCJ   | SM062C107KHJ650 | 100      | ±10% | 6         | 200        |
| 418    | M49470R01107MCJ   | SM062C107MHJ650 | 100      | ±20% | 6         | 200        |
| 419    | M49470R01127KCJ   | SM062C127KHJ650 | 120      | ±10% | 6         | 200        |
| 420    | M49470R01127MCJ   | SM062C127MHJ650 | 120      | ±20% | 6         | 200        |
| 421    | M49470Q01154KEJ   | SM057C154KHJ120 | 0.15     | ±10% | 5         | 500        |
| 422    | M49470Q01154MEJ   | SM057C154MHJ120 | 0.15     | ±20% | 5         | 500        |
| 423    | M49470Q01184KEJ   | SM057C184KHJ240 | 0.18     | ±10% | 5         | 500        |
| 424    | M49470Q01184MEJ   | SM057C184MHJ240 | 0.18     | ±20% | 5         | 500        |
| 425    | M49470Q01224KEJ   | SM057C224KHJ240 | 0.22     | ±10% | 5         | 500        |
| 426    | M49470Q01224MEJ   | SM057C224MHJ240 | 0.22     | ±20% | 5         | 500        |
| 427    | M49470Q01274KEJ   | SM057C274KHJ240 | 0.27     | ±10% | 5         | 500        |
| 428    | M49470Q01274MEJ   | SM057C274MHJ240 | 0.27     | ±20% | 5         | 500        |
| 429    | M49470Q01334KEJ   | SM057C334KHJ360 | 0.33     | ±10% | 5         | 500        |
| 430    | M49470Q01334MEJ   | SM057C334MHJ360 | 0.33     | ±20% | 5         | 500        |
| 431    | M49470Q01394KEJ   | SM057C394KHJ360 | 0.39     | ±10% | 5         | 500        |
| 432    | M49470Q01394MEJ   | SM057C394MHJ360 | 0.39     | ±20% | 5         | 500        |
| 433    | M49470Q01474KEJ   | SM057C474KHJ360 | 0.47     | ±10% | 5         | 500        |
| 434    | M49470Q01474MEJ   | SM057C474MHJ360 | 0.47     | ±20% | 5         | 500        |
| 435    | M49470Q01564KEJ   | SM057C564KHJ480 | 0.56     | ±10% | 5         | 500        |
| 436    | M49470Q01564MEJ   | SM057C564MHJ480 | 0.56     | ±20% | 5         | 500        |
|        | M49470Q01564KEC   | SM047C564KHJ240 | 0.56     | ±10% | 4         | 500        |
|        | M49470Q01564MEC   | SM047C564MHJ240 | 0.56     | ±20% | 4         | 500        |
| 437    | M49470Q01684KEJ   | SM057C684KHJ650 | 0.68     | ±10% | 5         | 500        |
| 438    | M49470Q01684MEJ   | SM057C684MHJ650 | 0.68     | ±20% | 5         | 500        |
|        | M49470Q01684KEC   | SM047C684KHJ240 | 0.68     | ±10% | 4         | 500        |
|        | M49470Q01684MEC   | SM047C684MHJ240 | 0.68     | ±20% | 4         | 500        |
| 439    | M49470Q01824KEJ   | SM047C824KHJ360 | 0.82     | ±10% | 4         | 500        |
| 440    | M49470Q01824MEJ   | SM047C824MHJ360 | 0.82     | ±20% | 4         | 500        |
| 441    | M49470Q01105KEJ   | SM047C105KHJ360 | 1.0      | ±10% | 4         | 500        |
| 442    | M49470Q01105MEJ   | SM047C105MHJ360 | 1.0      | ±20% | 4         | 500        |

| 87106- | MIL-PRF-49470 PIN | AVX PART NUMBER | CAP (μF) | TOL  | CASE CODE | VOLT (VDC) |
|--------|-------------------|-----------------|----------|------|-----------|------------|
| 443    | M49470Q01125KEJ   | SM047C125KHJ360 | 1.2      | ±10% | 4         | 500        |
| 444    | M49470Q01125MEJ   | SM047C125MHJ360 | 1.2      | ±20% | 4         | 500        |
| 445    | M49470Q01155KEJ   | SM047C155KHJ480 | 1.5      | ±10% | 4         | 500        |
| 446    | M49470Q01155MEJ   | SM047C155MHJ480 | 1.5      | ±20% | 4         | 500        |
| 447    | M49470Q01185KEJ   | SM047C185KHJ650 | 1.8      | ±10% | 4         | 500        |
| 448    | M49470Q01185MEJ   | SM047C185MHJ650 | 1.8      | ±20% | 4         | 500        |
|        | M49470Q01185KEC   | SM037C185KHJ240 | 1.8      | ±10% | 3         | 500        |
|        | M49470Q01185MEC   | SM037C185MHJ240 | 1.8      | ±20% | 3         | 500        |
| 449    | M49470Q01225KEJ   | SM037C225KHJ240 | 2.2      | ±10% | 3         | 500        |
| 450    | M49470Q01225MEJ   | SM037C225MHJ240 | 2.2      | ±20% | 3         | 500        |
| 451    | M49470Q01275KEJ   | SM037C275KHJ360 | 2.7      | ±10% | 3         | 500        |
| 452    | M49470Q01275MEJ   | SM037C275MHJ360 | 2.7      | ±20% | 3         | 500        |
| 453    | M49470Q01335KEJ   | SM037C335KHJ360 | 3.3      | ±10% | 3         | 500        |
| 454    | M49470Q01335MEJ   | SM037C335MHJ360 | 3.3      | ±20% | 3         | 500        |
| 455    | M49470Q01395KEJ   | SM037C395KHJ360 | 3.9      | ±10% | 3         | 500        |
| 456    | M49470Q01395MEJ   | SM037C395MHJ360 | 3.9      | ±20% | 3         | 500        |
| 457    | M49470Q01475KEJ   | SM037C475KHJ480 | 4.7      | ±10% | 3         | 500        |
| 458    | M49470Q01475MEJ   | SM037C475MHJ480 | 4.7      | ±20% | 3         | 500        |
| 459    | M49470Q01565KEJ   | SM037C565KHJ650 | 5.6      | ±10% | 3         | 500        |
| 460    | M49470Q01565MEJ   | SM037C565MHJ650 | 5.6      | ±20% | 3         | 500        |
|        | M49470Q01565KEC   | SM027C565KHJ240 | 5.6      | ±10% | 2         | 500        |
|        | M49470Q01565MEC   | SM027C565MHJ240 | 5.6      | ±20% | 2         | 500        |
| 461    | M49470Q01685KEJ   | SM017C685KHJ480 | 6.8      | ±10% | 1         | 500        |
| 462    | M49470Q01685MEJ   | SM017C685MHJ480 | 6.8      | ±20% | 1         | 500        |
|        | M49470Q01685KEC   | SM027C685KHJ240 | 6.8      | ±10% | 2         | 500        |
|        | M49470Q01685MEC   | SM027C685MHJ240 | 6.8      | ±20% | 2         | 500        |
| 463    | M49470Q01825KEJ   | SM017C825KHJ480 | 8.2      | ±10% | 1         | 500        |
| 464    | M49470Q01825MEJ   | SM017C825MHJ480 | 8.2      | ±20% | 1         | 500        |
|        | M49470Q01825KEC   | SM027C825KHJ360 | 8.2      | ±10% | 2         | 500        |
|        | M49470Q01825MEC   | SM027C825MHJ360 | 8.2      | ±20% | 2         | 500        |
| 465    | M49470Q01106KEJ   | SM017C106KHJ480 | 10       | ±10% | 1         | 500        |
| 466    | M49470Q01106MEJ   | SM017C106MHJ480 | 10       | ±20% | 1         | 500        |
|        | M49470Q01106KEC   | SM027C106KHJ360 | 10       | ±10% | 2         | 500        |
|        | M49470Q01106MEC   | SM027C106MHJ360 | 10       | ±20% | 2         | 500        |
| 467    | M49470Q01126KEJ   | SM017C126KHJ650 | 12       | ±10% | 1         | 500        |
| 468    | M49470Q01126MEJ   | SM017C126MHJ650 | 12       | ±20% | 1         | 500        |
|        | M49470Q01126KEC   | SM027C126KHJ480 | 12       | ±10% | 2         | 500        |
|        | M49470Q01126MEC   | SM027C126MHJ480 | 12       | ±20% | 2         | 500        |
| 469    | M49470Q01156KEJ   | SM027C156KHJ650 | 15       | ±10% | 2         | 500        |
| 470    | M49470Q01156MEJ   | SM027C156MHJ650 | 15       | ±20% | 2         | 500        |
| 471    | M49470Q01186KEJ   | SM027C186KHJ650 | 18       | ±10% | 2         | 500        |
| 472    | M49470Q01186MEJ   | SM027C186MHJ650 | 18       | ±20% | 2         | 500        |
| 473    | M49470Q01226KEJ   | SM067C226KHJ360 | 22       | ±10% | 6         | 500        |
| 474    | M49470Q01226MEJ   | SM067C226MHJ360 | 22       | ±20% | 6         | 500        |
| 475    | M49470Q01276KEJ   | SM067C276KHJ360 | 27       | ±10% | 6         | 500        |
| 476    | M49470Q01276MEJ   | SM067C276MHJ360 | 27       | ±20% | 6         | 500        |
| 477    | M49470Q01336KEJ   | SM067C336KHJ480 | 33       | ±10% | 6         | 500        |
| 478    | M49470Q01336MEJ   | SM067C336MHJ480 | 33       | ±20% | 6         | 500        |
| 479    | M49470Q01396KEJ   | SM067C396KHJ650 | 39       | ±10% | 6         | 500        |
| 480    | M49470Q01396MEJ   | SM067C396MHJ650 | 39       | ±20% | 6         | 500        |

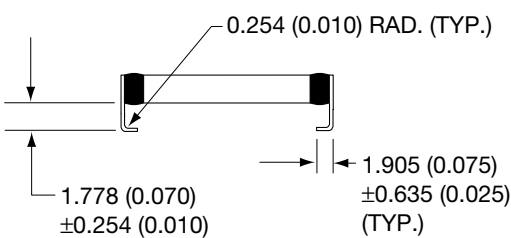
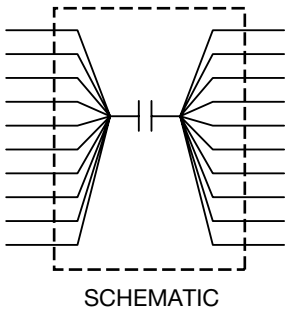
# SMPS Stacked MLC Capacitors



(SM Style) SM Military Styles DSCC Dwg. #87106 & #88011 U.S. Preferred Styles



“N” STYLE LEADS



“J” STYLE LEADS

## DIMENSIONS

millimeters (inches)

| Case Code | A (max.)<br>(See Note 2) | B (max.)<br>(See Note 2) | C ±.635 (±0.025) | D ±.635 (±0.025) | E (max.)     | No. of Leads per side |
|-----------|--------------------------|--------------------------|------------------|------------------|--------------|-----------------------|
| 1         | 16.5 (0.650)             | 18.2 (0.715)             | 11.4 (0.450)     | 52.1 (2.050)     | 12.7 (0.500) | 20                    |
| 2         | 16.5 (0.650)             | 18.2 (0.715)             | 20.3 (0.800)     | 38.4 (1.510)     | 22.1 (0.870) | 15                    |
| 3         | 16.5 (0.650)             | 18.2 (0.715)             | 11.4 (0.450)     | 26.7 (1.050)     | 12.7 (0.500) | 10                    |
| 4         | 16.5 (0.650)             | 18.2 (0.715)             | 10.2 (0.400)     | 10.2 (0.400)     | 11.2 (0.440) | 4                     |
| 5         | 16.5 (0.650)             | 18.2 (0.715)             | 6.35 (0.250)     | 6.35 (0.250)     | 7.62 (0.300) | 3                     |
| 6         | 16.5 (0.650)             | 18.2 (0.715)             | 31.8 (1.250)     | 52.1 (2.050)     | 34.3 (1.350) | 20                    |

### NOTES:

1. Unless otherwise specified, tolerances 0.254 (±0.010).
2. “A” dimensions are maximum (see tables on pages 22 thru 25 for specific part number dimensions).
3. “N” straight leads; “J” leads formed in.
4. For case code 5, dimensions shall be 2.54 (0.100) maximum, 0.305 (0.012) minimum.



# SMPS Stacked MLC Capacitors

(SM Style) SM Military Styles DSCC Dwg. #87106 & #88011



U.S. Preferred Styles

## Ordering Information

**Part Number:** The complete part number shall be as follows:

X7R: 87106 XXX

Drawing number

Dash number  
(see list)

**Ordering Data.** The contract or purchase order should specify the following:

- Complete part number.
- Requirements for delivery of one copy of the quality conformance inspection data with each shipment of parts by the manufacturer.
- Whether the manufacturer performs the group B tests, or provides certification of compliance with group B requirements.
- Requirements for notification of change of products to acquiring activity, if applicable.
- Requirements for packaging and packing.

## Source of Supply.

Vendor CAGE number

96095

Vendor name and address

Olean Advanced Products  
A Division of AVX Corporation  
1695 Seneca Avenue  
Olean, NY 14760

## Performance Characteristics

**Operating Temperature Range.** The operating temperature range shall be -55°C to +125°C.

## Electrical Characteristics.

Rated Voltage. See tables on pages 22, 23, 24 & 25.

**Capacitance.** Measured in accordance with method 305 of MIL-STD-202 (1KHz at 1.0Vrms, open circuit voltage, at +25°C).

**Dissipation Factor (+25°C).** X7R: Dissipation factor shall be 2.5 percent maximum (measured under the same conditions as capacitance.) C0G: Dissipation factor shall be 0.15 percent maximum.

## Temperature Coefficient.

| DSCC Dwg.                  | Bias = 0 volt | Bias = rated voltage |
|----------------------------|---------------|----------------------|
| 88011 All Voltages         | 0±30 ppm/°C   | 0±30 ppm/°C          |
| 87106 50 WVDC and 100 WVDC | ±15%          | +15, -25%            |
| 87106 200 WVDC             | ±15%          | +15, -40%            |
| 87106 500 WVDC             | ±15%          | +15, -50%            |

## Insulation Resistance.

At +25°C, rated voltage: 100K MΩ or 1,000 MΩ-μF, whichever is less.

At +125°C, rated voltage: 10K MΩ or 100 MΩ-μF, whichever is less.

**Dielectric Withstanding Voltage.** Dielectric withstanding voltage shall be 250 percent of rated voltage except 500V rated parts at 150 percent of rated voltage.

**Capacitance Tolerance.** J = ±5 percent, K = ±10 percent, M = ±20 percent.

**Solderability of Terminals.** In accordance with MIL-PRF-49470.

**Resistance to Soldering Heat.** In accordance with MIL-STD-202, method 210, procedure 2, condition B.

**Shock.** In accordance with MIL-PRF-49470.

**Immersion Cycling.** In accordance with MIL-PRF-49470.

**Moisture Resistance.** In accordance with MIL-PRF-49470.

**Life.** Life shall be 200 percent of rated voltage except 500V rated parts at 120 percent of rated voltage applied at +125°C for 1,000 hours.

**Thermal Shock.** MIL-STD-202, method 107, test condition A, except high temperature is +125°C.

**Voltage Conditioning.** In accordance with MIL-PRF-49470, except 500V rated parts at 120 percent of rated voltage at +125°C.

**Terminal Strength.** MIL-STD-202, method 211, condition B, except that each lead shall be bent away from the body 90 degrees from the original position and back, two bends.

**Marking.** Marking shall be in accordance with MIL-STD-1285, except the part number shall be as specified in paragraph 1.2 of 87106, or 88011 with the manufacturer's name or code and date code minimum, except case sizes 4 and 5 shall be marked with coded cap and tolerance minimum. Full marking shall be included on the package.

# SMPS Stacked MLC Capacitors

(SM Style) DSCC #87106 and #88011



U.S. Preferred Styles

**Table II. Group A inspection.**

| Inspection                                                                                                                                                                                   | Requirement paragraph of MIL-PRF-49470          | Test method paragraph of MIL-PRF-49470 | Sampling procedure       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------------|--------------------------|
| <b>Subgroup 1</b><br>Thermal shock and voltage conditioning <u>1/</u>                                                                                                                        | 3.9                                             | 4.8.5                                  | 100% inspection          |
| <b>Subgroup 2</b><br>Visual and mechanical examination:<br>Material<br>Physical dimensions<br>Interface requirements<br>(other than physical dimensions)<br>Marking <u>2/</u><br>Workmanship | 3.4<br>3.1<br>3.5 and 3.5.1<br><br>3.28<br>3.30 | 4.8.4                                  | 13 samples<br>0 failures |

1/ Post checks are required (see paragraph 3.9 of MIL-PRF-49470).

2/ Marking defects are based on visual examination only. Any subsequent electrical defects shall not be used as a basis for determining marking defects.

**Table III. Group B inspection. 1/**

| Inspection                                                                                                                                       | Requirement paragraph of MIL-PRF-49470 | Test method paragraph of MIL-PRF-49470  | Number of sample units to be inspected | Number of defectives permitted <u>2/</u> |             |
|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------|----------------------------------------|------------------------------------------|-------------|
| <b>Subgroup 1 <u>3/</u></b><br>Temperature coefficient<br>Resistance to solvents <u>5/</u> <u>6/</u><br>Immersion<br>Terminal strength <u>5/</u> | <u>4/</u><br>3.23<br>3.18<br>3.24      | <u>4/</u><br>4.8.20<br>4.8.15<br>4.8.10 | 12                                     | 1                                        | <u>6/</u> 1 |
| <b>Subgroup 2</b><br>Resistance to soldering heat<br>Moisture resistance                                                                         | 3.20<br>3.21                           | 4.8.17<br>4.8.18                        | 12                                     | 1                                        |             |
| <b>Subgroup 3</b><br>Marking legibility<br>(laser marking only)                                                                                  | 3.28.1                                 | 4.8.4.1                                 | 6                                      | 1                                        |             |
| <b>Subgroup 4</b><br>Solderability                                                                                                               | 3.15                                   | 4.8.12                                  | 3                                      | 0                                        |             |
| <b>Subgroup 5</b><br>Life                                                                                                                        | 3.26                                   | 4.8.22                                  | 5 minimum<br>per case code             | 0                                        |             |

1/ Unless otherwise specified herein, when necessary, mounting of group B samples shall be at the discretion of the manufacturer.

2/ A sample unit having one or more defects shall be charged as a single defective.

3/ Order of tests is at discretion of manufacturer.

4/ See 3.2.3 of DSCC 87106.

5/ Sample size shall be 3 pieces with zero defectives permitted.

6/ Total of one defect allowed for combination of subgroup 1, subgroup 2, and subgroup 3 inspections.



# SMPS Stacked MLC Capacitors

(SM Style) SM Military Styles DSCC Dwg. #87106 (X7R)



U.S. Preferred Styles

## Electrical characteristics

| DSCC Dwg. 87106- | Cap. Value (µF) | Cap. Tol. | Case Code | Lead Style | Max. A Dimension mm (inches) |
|------------------|-----------------|-----------|-----------|------------|------------------------------|
| <b>50V</b>       |                 |           |           |            |                              |
| 001              | 1.0             | K         | 5         | N          | 3.05 (0.120)                 |
| 002              | 1.0             | M         | 5         | N          | 3.05 (0.120)                 |
| 241              | 1.0             | K         | 5         | J          | 3.05 (0.120)                 |
| 242              | 1.0             | M         | 5         | J          | 3.05 (0.120)                 |
| 003              | 1.2             | K         | 5         | N          | 3.05 (0.120)                 |
| 004              | 1.2             | M         | 5         | N          | 3.05 (0.120)                 |
| 243              | 1.2             | K         | 5         | J          | 3.05 (0.120)                 |
| 244              | 1.2             | M         | 5         | J          | 3.05 (0.120)                 |
| 005              | 1.5             | K         | 5         | N          | 6.10 (0.240)                 |
| 006              | 1.5             | M         | 5         | N          | 6.10 (0.240)                 |
| 245              | 1.5             | K         | 5         | J          | 6.10 (0.240)                 |
| 246              | 1.5             | M         | 5         | J          | 6.10 (0.240)                 |
| 007              | 1.8             | K         | 5         | N          | 6.10 (0.240)                 |
| 008              | 1.8             | M         | 5         | N          | 6.10 (0.240)                 |
| 247              | 1.8             | K         | 5         | J          | 6.10 (0.240)                 |
| 248              | 1.8             | M         | 5         | J          | 6.10 (0.240)                 |
| 009              | 2.2             | K         | 5         | N          | 6.10 (0.240)                 |
| 010              | 2.2             | M         | 5         | N          | 6.10 (0.240)                 |
| 249              | 2.2             | K         | 5         | J          | 6.10 (0.240)                 |
| 250              | 2.2             | M         | 5         | J          | 6.10 (0.240)                 |
| 011              | 2.7             | K         | 5         | N          | 9.14 (0.360)                 |
| 012              | 2.7             | M         | 5         | N          | 9.14 (0.360)                 |
| 251              | 2.7             | K         | 5         | J          | 9.14 (0.360)                 |
| 252              | 2.7             | M         | 5         | J          | 9.14 (0.360)                 |
| 013              | 3.3             | K         | 5         | N          | 9.14 (0.360)                 |
| 014              | 3.3             | M         | 5         | N          | 9.14 (0.360)                 |
| 253              | 3.3             | K         | 5         | J          | 9.14 (0.360)                 |
| 254              | 3.3             | M         | 5         | J          | 9.14 (0.360)                 |
| 015              | 3.9             | K         | 5         | N          | 12.2 (0.480)                 |
| 016              | 3.9             | M         | 5         | N          | 12.2 (0.480)                 |
| 255              | 3.9             | K         | 5         | J          | 12.2 (0.480)                 |
| 256              | 3.9             | M         | 5         | J          | 12.2 (0.480)                 |
| 017              | 4.7             | K         | 5         | N          | 12.2 (0.480)                 |
| 018              | 4.7             | M         | 5         | N          | 12.2 (0.480)                 |
| 257              | 4.7             | K         | 5         | J          | 12.2 (0.480)                 |
| 258              | 4.7             | M         | 5         | J          | 12.2 (0.480)                 |
| 019              | 5.6             | K         | 5         | N          | 16.5 (0.650)                 |
| 020              | 5.6             | M         | 5         | N          | 16.5 (0.650)                 |
| 259              | 5.6             | K         | 5         | J          | 16.5 (0.650)                 |
| 260              | 5.6             | M         | 5         | J          | 16.5 (0.650)                 |
| 223              | 6.8             | K         | 4         | N          | 9.14 (0.360)                 |
| 224              | 6.8             | M         | 4         | N          | 9.14 (0.360)                 |
| 261              | 6.8             | K         | 4         | J          | 9.14 (0.360)                 |
| 262              | 6.8             | M         | 4         | J          | 9.14 (0.360)                 |
| 021              | 8.2             | K         | 4         | N          | 9.14 (0.360)                 |
| 022              | 8.2             | M         | 4         | N          | 9.14 (0.360)                 |
| 263              | 8.2             | K         | 4         | J          | 9.14 (0.360)                 |
| 264              | 8.2             | M         | 4         | J          | 9.14 (0.360)                 |
| 023              | 10              | K         | 4         | N          | 12.2 (0.480)                 |
| 024              | 10              | M         | 4         | N          | 12.2 (0.480)                 |
| 265              | 10              | K         | 4         | J          | 12.2 (0.480)                 |
| 266              | 10              | M         | 4         | J          | 12.2 (0.480)                 |
| 025              | 12              | K         | 4         | N          | 12.2 (0.480)                 |
| 026              | 12              | M         | 4         | N          | 12.2 (0.480)                 |
| 267              | 12              | K         | 4         | J          | 12.2 (0.480)                 |
| 268              | 12              | M         | 4         | J          | 12.2 (0.480)                 |
| 027              | 15              | K         | 4         | N          | 16.5 (0.650)                 |
| 028              | 15              | M         | 4         | N          | 16.5 (0.650)                 |
| 269              | 15              | K         | 4         | J          | 16.5 (0.650)                 |
| 270              | 15              | M         | 4         | J          | 16.5 (0.650)                 |
| 029              | 18              | K         | 3         | N          | 6.10 (0.240)                 |
| 030              | 18              | M         | 3         | N          | 6.10 (0.240)                 |
| 271              | 18              | K         | 3         | J          | 6.10 (0.240)                 |

| DSCC Dwg. 87106- | Cap. Value (µF) | Cap. Tol. | Case Code | Lead Style | Max. A Dimension mm (inches) |
|------------------|-----------------|-----------|-----------|------------|------------------------------|
| <b>50V</b>       |                 |           |           |            |                              |
| 272              | 18              | M         | 3         | J          | 6.10 (0.240)                 |
| 272              | 18              | M         | 3         | J          | 6.10 (0.240)                 |
| 031              | 22              | K         | 3         | N          | 9.14 (0.360)                 |
| 032              | 22              | M         | 3         | N          | 9.14 (0.360)                 |
| 273              | 22              | K         | 3         | J          | 9.14 (0.360)                 |
| 274              | 22              | M         | 3         | J          | 9.14 (0.360)                 |
| 033              | 27              | K         | 3         | N          | 9.14 (0.360)                 |
| 034              | 27              | M         | 3         | N          | 9.14 (0.360)                 |
| 275              | 27              | K         | 3         | J          | 9.14 (0.360)                 |
| 276              | 27              | M         | 3         | J          | 9.14 (0.360)                 |
| 035              | 33              | K         | 3         | N          | 9.14 (0.360)                 |
| 036              | 33              | M         | 3         | N          | 9.14 (0.360)                 |
| 277              | 33              | K         | 3         | J          | 9.14 (0.360)                 |
| 278              | 33              | M         | 3         | J          | 9.14 (0.360)                 |
| 037              | 39              | K         | 3         | N          | 12.2 (0.480)                 |
| 038              | 39              | M         | 3         | N          | 12.2 (0.480)                 |
| 279              | 39              | K         | 3         | J          | 12.2 (0.480)                 |
| 280              | 39              | M         | 3         | J          | 12.2 (0.480)                 |
| 039              | 47              | K         | 3         | N          | 16.5 (0.650)                 |
| 040              | 47              | M         | 3         | N          | 16.5 (0.650)                 |
| 281              | 47              | K         | 3         | J          | 16.5 (0.650)                 |
| 282              | 47              | M         | 3         | J          | 16.5 (0.650)                 |
| 225              | 56              | K         | 1         | N          | 9.14 (0.360)                 |
| 226              | 56              | M         | 1         | N          | 9.14 (0.360)                 |
| 283              | 56              | K         | 1         | J          | 9.14 (0.360)                 |
| 284              | 56              | M         | 1         | J          | 9.14 (0.360)                 |
| 041              | 68              | K         | 1         | N          | 12.2 (0.480)                 |
| 042              | 68              | M         | 1         | N          | 12.2 (0.480)                 |
| 285              | 68              | K         | 1         | J          | 12.2 (0.480)                 |
| 286              | 68              | M         | 1         | J          | 12.2 (0.480)                 |
| 043              | 82              | K         | 1         | N          | 12.2 (0.480)                 |
| 044              | 82              | M         | 1         | N          | 12.2 (0.480)                 |
| 287              | 82              | K         | 1         | J          | 12.2 (0.480)                 |
| 288              | 82              | M         | 1         | J          | 12.2 (0.480)                 |
| 045              | 100             | K         | 1         | N          | 16.5 (0.650)                 |
| 046              | 100             | M         | 1         | N          | 16.5 (0.650)                 |
| 289              | 100             | K         | 1         | J          | 16.5 (0.650)                 |
| 290              | 100             | M         | 1         | J          | 16.5 (0.650)                 |
| 227              | 120             | K         | 2         | N          | 12.2 (0.480)                 |
| 228              | 120             | M         | 2         | N          | 12.2 (0.480)                 |
| 291              | 120             | K         | 2         | J          | 12.2 (0.480)                 |
| 292              | 120             | M         | 2         | J          | 12.2 (0.480)                 |
| 047              | 150             | K         | 2         | N          | 16.5 (0.650)                 |
| 048              | 150             | M         | 2         | N          | 16.5 (0.650)                 |
| 293              | 150             | K         | 2         | J          | 16.5 (0.650)                 |
| 294              | 150             | M         | 2         | J          | 16.5 (0.650)                 |
| 049              | 180             | K         | 6         | N          | 12.2 (0.480)                 |
| 050              | 180             | M         | 6         | N          | 12.2 (0.480)                 |
| 295              | 180             | K         | 6         | J          | 12.2 (0.480)                 |
| 296              | 180             | M         | 6         | J          | 12.2 (0.480)                 |
| 051              | 220             | K         | 6         | N          | 12.2 (0.480)                 |
| 052              | 220             | M         | 6         | N          | 12.2 (0.480)                 |
| 297              | 220             | K         | 6         | J          | 12.2 (0.480)                 |
| 298              | 220             | M         | 6         | J          | 12.2 (0.480)                 |
| 053              | 270             | K         | 6         | N          | 16.5 (0.650)                 |
| 054              | 270             | M         | 6         | N          | 16.5 (0.650)                 |
| 299              | 270             | K         | 6         | J          | 16.5 (0.650)                 |
| 300              | 270             | M         | 6         | J          | 16.5 (0.650)                 |

| DSCC Dwg. 87106- | Cap. Value (µF) | Cap. Tol. | Case Code | Lead Style | Max. A Dimension mm (inches) |
|------------------|-----------------|-----------|-----------|------------|------------------------------|
| <b>100V</b>      |                 |           |           |            |                              |
| 055              | .68             | K         | 5         | N          | 3.05 (0.120)                 |
| 056              | .68             | M         | 5         | N          | 3.05 (0.120)                 |
| 301              | .68             | K         | 5         | J          | 3.05 (0.120)                 |
| 302              | .68             | M         | 5         | J          | 3.05 (0.120)                 |
| 057              | .82             | K         | 5         | N          | 6.10 (0.240)                 |
| 058              | .82             | M         | 5         | N          | 6.10 (0.240)                 |
| 303              | .82             | K         | 5         | J          | 6.10 (0.240)                 |
| 304              | .82             | M         | 5         | J          | 6.10 (0.240)                 |
| 059              | 1.0             | K         | 5         | N          | 6.10 (0.240)                 |
| 060              | 1.0             | M         | 5         | N          | 6.10 (0.240)                 |
| 305              | 1.0             | K         | 5         | J          | 6.10 (0.240)                 |
| 306              | 1.0             | M         | 5         | J          | 6.10 (0.240)                 |
| 061              | 1.2             | K         | 5         | N          | 6.10 (0.240)                 |
| 062              | 1.2             | M         | 5         | N          | 6.10 (0.240)                 |
| 307              | 1.2             | K         | 5         | J          | 6.10 (0.240)                 |
| 308              | 1.2             | M         | 5         | J          | 6.10 (0.240)                 |
| 063              | 1.5             | K         | 5         | N          | 9.14 (0.360)                 |
| 064              | 1.5             | M         | 5         | N          | 9.14 (0.360)                 |
| 309              | 1.5             | K         | 5         | J          | 9.14 (0.360)                 |
| 310              | 1.5             | M         | 5         | J          | 9.14 (0.360)                 |
| 065              | 1.8             | K         | 5         | N          | 9.14 (0.360)                 |
| 066              | 1.8             | M         | 5         | N          | 9.14 (0.360)                 |
| 311              | 1.8             | K         | 5         | J          | 9.14 (0.360)                 |
| 312              | 1.8             | M         | 5         | J          | 9.14 (0.360)                 |
| 067              | 2.2             | K         | 5         | N          | 12.2 (0.480)                 |
| 068              | 2.2             | M         | 5         | N          | 12.2 (0.480)                 |
| 313              | 2.2             | K         | 5         | J          | 12.2 (0.480)                 |
| 314              | 2.2             | M         | 5         | J          | 12.2 (0.480)                 |
| 069              | 2.7             | K         | 5         | N          | 12.2 (0.480)                 |
| 070              | 2.7             | M         | 5         | N          | 12.2 (0.480)                 |
| 315              | 2.7             | K         | 5         | J          | 12.2 (0.480)                 |
| 316              | 2.7             | M         | 5         | J          | 12.2 (0.480)                 |
| 071              | 3.3             | K         | 5         | N          | 16.5 (0.650)                 |
| 072              | 3.3             | M         | 5         | N          | 16.5 (0.650)                 |
| 317              | 3.3             | K         | 5         | J          | 16.5 (0.650)                 |
| 318              | 3.3             | M         | 5         | J          | 16.5 (0.650)                 |
| 073              | 3.9             | K         | 4         | N          | 9.14 (0.360)                 |
| 074              | 3.9             | M         | 4         | N          | 9.14 (0.360)                 |
| 319              | 3.9             | K         | 4         | J          | 9.14 (0.360)                 |
| 320              | 3.9             | M         | 4         | J          | 9.14 (0.360)                 |
| 075              | 4.7             | K         | 4         | N          | 9.14 (0.360)                 |
| 076              | 4.7             | M         | 4         | N          | 9.14 (0.360)                 |
| 321              | 4.7             | K         | 4         | J          | 9.14 (0.360)                 |
| 322              | 4.7             | M         | 4         | J          | 9.14 (0.360)                 |
| 077              | 5.6             | K         | 4         | N          | 12.2 (0.480)                 |
| 078              | 5.6             | M         | 4         | N          | 12.2 (0.480)                 |
| 323              | 5.6             | K         | 4         | J          | 12.2 (0.480)                 |
| 324              | 5.6             | M         | 4         | J          | 12.2 (0.480)                 |
| 079              | 6.8             | K         | 4         | N          | 12.2 (0.480)                 |
| 080              | 6.8             | M         | 4         | N          | 12.2 (0.480)                 |
| 325              | 6.8             | K         | 4         | J          | 12.2 (0.480)                 |
| 326              | 6.8             | M         | 4         | J          | 12.2 (0.480)                 |
| 081              | 8.2             | K         | 4         | N          | 16.5 (0.650)                 |
| 082              | 8.2             | M         | 4         | N          | 16.5 (0.650)                 |
| 327              | 8.2             | K         | 4         | J          | 16.5 (0.650)                 |
| 328              | 8.2             | M         | 4         | J          | 16.5 (0.650)                 |
| 229              | 10              | K         | 3         | N          | 6.10 (0.240)                 |
| 230              | 10              | M         | 3         | N          | 6.10 (0.240)                 |
| 329              | 10              | K         | 3         | J          | 6.10 (0.240)                 |
| 330              | 10              | M         | 3         | J          | 6.10 (0.240)                 |
| 083              | 12              | K         | 3         | N          | 6.10 (0.240)                 |
| 084              | 12              | M         | 3         | N          | 6.10 (0.240)                 |
| 331              | 12              | K         | 3         | J          | 6.10 (0.240)                 |
| 332              | 12              | M         | 3         | J          | 6.10 (0.240)                 |

# SMPS Stacked MLC Capacitors

(SM Style) SM Military Styles DSCC Dwg. #87106 (X7R)



U.S. Preferred Styles

## Electrical characteristics

| DSCC Dwg. 87106- | Cap. Value (µF) | Cap. Tol. | Case Code | Lead Style | Max. A Dimension mm (inches) |
|------------------|-----------------|-----------|-----------|------------|------------------------------|
| <b>100V</b>      |                 |           |           |            |                              |
| 085              | 15              | K         | 3         | N          | 9.14 (0.360)                 |
| 086              | 15              | M         | 3         | N          | 9.14 (0.360)                 |
| 333              | 15              | K         | 3         | J          | 9.14 (0.360)                 |
| 334              | 15              | M         | 3         | J          | 9.14 (0.360)                 |
| 087              | 18              | K         | 3         | N          | 9.14 (0.360)                 |
| 088              | 18              | M         | 3         | N          | 9.14 (0.360)                 |
| 335              | 18              | K         | 3         | J          | 9.14 (0.360)                 |
| 336              | 18              | M         | 3         | J          | 9.14 (0.360)                 |
| 089              | 22              | K         | 3         | N          | 12.2 (0.480)                 |
| 090              | 22              | M         | 3         | N          | 12.2 (0.480)                 |
| 337              | 22              | M         | 3         | K          | 12.2 (0.480)                 |
| 338              | 22              | M         | 3         | J          | 12.2 (0.480)                 |
| 091              | 27              | K         | 3         | N          | 16.5 (0.650)                 |
| 092              | 27              | M         | 3         | N          | 16.5 (0.650)                 |
| 339              | 27              | K         | 3         | J          | 16.5 (0.650)                 |
| 340              | 27              | M         | 3         | J          | 16.5 (0.650)                 |
| 093              | 33              | K         | 1         | N          | 9.14 (0.360)                 |
| 094              | 33              | M         | 1         | N          | 9.14 (0.360)                 |
| 341              | 33              | K         | 1         | J          | 9.14 (0.360)                 |
| 342              | 33              | M         | 1         | J          | 9.14 (0.360)                 |
| 095              | 39              | K         | 1         | N          | 12.2 (0.480)                 |
| 096              | 39              | M         | 1         | N          | 12.2 (0.480)                 |
| 343              | 39              | K         | 1         | J          | 12.2 (0.480)                 |
| 344              | 39              | M         | 1         | J          | 12.2 (0.480)                 |
| 097              | 47              | K         | 1         | N          | 12.2 (0.480)                 |
| 098              | 47              | M         | 1         | N          | 12.2 (0.480)                 |
| 345              | 47              | K         | 1         | J          | 12.2 (0.480)                 |
| 346              | 47              | M         | 1         | J          | 12.2 (0.480)                 |
| 099              | 56              | K         | 1         | N          | 16.5 (0.650)                 |
| 100              | 56              | M         | 1         | N          | 16.5 (0.650)                 |
| 347              | 56              | K         | 1         | J          | 16.5 (0.650)                 |
| 348              | 56              | M         | 1         | J          | 16.5 (0.650)                 |
| 101              | 68              | K         | 2         | N          | 12.2 (0.480)                 |
| 102              | 68              | M         | 2         | N          | 12.2 (0.480)                 |
| 349              | 68              | K         | 2         | J          | 12.2 (0.480)                 |
| 350              | 68              | M         | 2         | J          | 12.2 (0.480)                 |
| 103              | 82              | K         | 2         | N          | 16.5 (0.650)                 |
| 104              | 82              | M         | 2         | N          | 16.5 (0.650)                 |
| 351              | 82              | K         | 2         | J          | 16.5 (0.650)                 |
| 352              | 82              | M         | 2         | J          | 16.5 (0.650)                 |
| 105              | 100             | K         | 6         | N          | 9.14 (0.360)                 |
| 106              | 100             | M         | 6         | N          | 9.14 (0.360)                 |
| 353              | 100             | K         | 6         | J          | 9.14 (0.360)                 |
| 354              | 100             | M         | 6         | J          | 9.14 (0.360)                 |
| 107              | 120             | K         | 6         | N          | 9.14 (0.360)                 |
| 108              | 120             | M         | 6         | N          | 9.14 (0.360)                 |
| 355              | 120             | K         | 6         | J          | 9.14 (0.360)                 |
| 356              | 120             | M         | 6         | J          | 9.14 (0.360)                 |
| 109              | 150             | K         | 6         | N          | 12.2 (0.480)                 |
| 110              | 150             | M         | 6         | N          | 12.2 (0.480)                 |
| 357              | 150             | K         | 6         | J          | 12.2 (0.480)                 |
| 358              | 150             | M         | 6         | J          | 12.2 (0.480)                 |
| 111              | 180             | K         | 6         | N          | 16.5 (0.650)                 |
| 112              | 180             | M         | 6         | N          | 16.5 (0.650)                 |
| 359              | 180             | K         | 6         | J          | 16.5 (0.650)                 |
| 360              | 180             | M         | 6         | J          | 16.5 (0.650)                 |

| DSCC Dwg. 87106- | Cap. Value (µF) | Cap. Tol. | Case Code | Lead Style | Max. A Dimension mm (inches) |
|------------------|-----------------|-----------|-----------|------------|------------------------------|
| <b>200V</b>      |                 |           |           |            |                              |
| 113              | .47             | K         | 5         | N          | 6.10 (0.240)                 |
| 114              | .47             | M         | 5         | N          | 6.10 (0.240)                 |
| 361              | .47             | K         | 5         | J          | 6.10 (0.240)                 |
| 362              | .47             | M         | 5         | J          | 6.10 (0.240)                 |
| 115              | .56             | K         | 5         | N          | 6.10 (0.240)                 |
| 116              | .56             | M         | 5         | N          | 6.10 (0.240)                 |
| 363              | .56             | K         | 5         | J          | 6.10 (0.240)                 |
| 364              | .56             | M         | 5         | J          | 6.10 (0.240)                 |
| 117              | .68             | K         | 5         | N          | 9.14 (0.360)                 |
| 118              | .68             | M         | 5         | N          | 9.14 (0.360)                 |
| 365              | .68             | K         | 5         | J          | 9.14 (0.360)                 |
| 366              | .68             | M         | 5         | J          | 9.14 (0.360)                 |
| 119              | .82             | K         | 5         | N          | 9.14 (0.360)                 |
| 120              | .82             | M         | 5         | N          | 9.14 (0.360)                 |
| 367              | .82             | M         | 5         | J          | 9.14 (0.360)                 |
| 368              | .82             | M         | 5         | J          | 9.14 (0.360)                 |
| 121              | 1.0             | K         | 5         | N          | 12.2 (0.480)                 |
| 122              | 1.0             | M         | 5         | N          | 12.2 (0.480)                 |
| 369              | 1.0             | K         | 5         | J          | 12.2 (0.480)                 |
| 370              | 1.0             | M         | 5         | J          | 12.2 (0.480)                 |
| 123              | 1.2             | K         | 5         | N          | 12.2 (0.480)                 |
| 124              | 1.2             | M         | 5         | N          | 12.2 (0.480)                 |
| 371              | 1.2             | K         | 5         | J          | 12.2 (0.480)                 |
| 372              | 1.2             | M         | 5         | J          | 12.2 (0.480)                 |
| 125              | 1.5             | K         | 5         | N          | 16.5 (0.650)                 |
| 126              | 1.5             | M         | 5         | N          | 16.5 (0.650)                 |
| 373              | 1.5             | K         | 5         | J          | 16.5 (0.650)                 |
| 374              | 1.5             | M         | 5         | J          | 16.5 (0.650)                 |
| 127              | 1.8             | K         | 4         | N          | 9.14 (0.360)                 |
| 128              | 1.8             | M         | 4         | N          | 9.14 (0.360)                 |
| 375              | 1.8             | K         | 4         | J          | 9.14 (0.360)                 |
| 376              | 1.8             | M         | 4         | J          | 9.14 (0.360)                 |
| 129              | 2.2             | K         | 4         | N          | 9.14 (0.360)                 |
| 130              | 2.2             | M         | 4         | N          | 9.14 (0.360)                 |
| 377              | 2.2             | K         | 4         | J          | 9.14 (0.360)                 |
| 378              | 2.2             | M         | 4         | J          | 9.14 (0.360)                 |
| 131              | 2.7             | K         | 4         | N          | 12.2 (0.480)                 |
| 132              | 2.7             | M         | 4         | N          | 12.2 (0.480)                 |
| 379              | 2.7             | K         | 4         | J          | 12.2 (0.480)                 |
| 380              | 2.7             | M         | 4         | J          | 12.2 (0.480)                 |
| 133              | 3.3             | K         | 4         | N          | 12.2 (0.480)                 |
| 134              | 3.3             | M         | 4         | N          | 12.2 (0.480)                 |
| 381              | 3.3             | K         | 4         | J          | 12.2 (0.480)                 |
| 382              | 3.3             | M         | 4         | J          | 12.2 (0.480)                 |
| 135              | 3.9             | K         | 4         | N          | 16.5 (0.650)                 |
| 136              | 3.9             | M         | 4         | N          | 16.5 (0.650)                 |
| 383              | 3.9             | K         | 4         | J          | 16.5 (0.650)                 |
| 384              | 3.9             | M         | 4         | J          | 16.5 (0.650)                 |
| 137              | 4.7             | K         | 3         | N          | 6.10 (0.240)                 |
| 138              | 4.7             | M         | 3         | N          | 6.10 (0.240)                 |
| 385              | 4.7             | K         | 3         | J          | 6.10 (0.240)                 |
| 386              | 4.7             | M         | 3         | J          | 6.10 (0.240)                 |
| 139              | 5.6             | K         | 3         | N          | 6.10 (0.240)                 |
| 140              | 5.6             | M         | 3         | N          | 6.10 (0.240)                 |
| 387              | 5.6             | K         | 3         | J          | 6.10 (0.240)                 |
| 388              | 5.6             | M         | 3         | J          | 6.10 (0.240)                 |
| 141              | 6.8             | K         | 3         | N          | 9.14 (0.360)                 |
| 142              | 6.8             | M         | 3         | N          | 9.14 (0.360)                 |
| 389              | 6.8             | K         | 3         | J          | 9.14 (0.360)                 |
| 390              | 6.8             | M         | 3         | J          | 9.14 (0.360)                 |
| 143              | 8.2             | K         | 3         | N          | 9.14 (0.360)                 |
| 144              | 8.2             | M         | 3         | N          | 9.14 (0.360)                 |
| 391              | 8.2             | K         | 3         | J          | 9.14 (0.360)                 |
| 392              | 8.2             | M         | 3         | J          | 9.14 (0.360)                 |

| DSCC Dwg. 87106- | Cap. Value (µF) | Cap. Tol. | Case Code | Lead Style | Max. A Dimension mm (inches) |
|------------------|-----------------|-----------|-----------|------------|------------------------------|
| <b>200V</b>      |                 |           |           |            |                              |
| 145              | 10              | K         | 3         | N          | 12.2 (0.480)                 |
| 146              | 10              | M         | 3         | N          | 12.2 (0.480)                 |
| 393              | 10              | K         | 3         | J          | 12.2 (0.480)                 |
| 394              | 10              | M         | 3         | J          | 12.2 (0.480)                 |
| 147              | 12              | K         | 3         | N          | 16.5 (0.650)                 |
| 148              | 12              | M         | 3         | N          | 16.5 (0.650)                 |
| 395              | 12              | K         | 3         | J          | 16.5 (0.650)                 |
| 396              | 12              | M         | 3         | J          | 16.5 (0.650)                 |
| 149              | 15              | K         | 1         | N          | 9.14 (0.360)                 |
| 150              | 15              | M         | 1         | N          | 9.14 (0.360)                 |
| 397              | 15              | K         | 1         | J          | 9.14 (0.360)                 |
| 398              | 15              | M         | 1         | J          | 9.14 (0.360)                 |
| 151              | 18              | K         | 1         | N          | 12.2 (0.480)                 |
| 152              | 18              | M         | 1         | N          | 12.2 (0.480)                 |
| 399              | 18              | K         | 1         | J          | 12.2 (0.480)                 |
| 400              | 18              | M         | 1         | J          | 12.2 (0.480)                 |
| 153              | 22              | K         | 1         | N          | 16.5 (0.650)                 |
| 154              | 22              | M         | 1         | N          | 16.5 (0.650)                 |
| 401              | 22              | K         | 1         | J          | 16.5 (0.650)                 |
| 402              | 22              | M         | 1         | J          | 16.5 (0.650)                 |
| 155              | 27              | K         | 1         | N          | 16.5 (0.650)                 |
| 156              | 27              | M         | 1         | N          | 16.5 (0.650)                 |
| 403              | 27              | K         | 1         | J          | 16.5 (0.650)                 |
| 404              | 27              | M         | 1         | J          | 16.5 (0.650)                 |
| 157              | 33              | K         | 2         | N          | 12.2 (0.480)                 |
| 158              | 33              | M         | 2         | N          | 12.2 (0.480)                 |
| 405              | 33              | K         | 2         | J          | 12.2 (0.480)                 |
| 406              | 33              | M         | 2         | J          | 12.2 (0.480)                 |
| 159              | 39              | K         | 2         | N          | 16.5 (0.650)                 |
| 160              | 39              | M         | 2         | N          | 16.5 (0.650)                 |
| 407              | 39              | K         | 2         | J          | 16.5 (0.650)                 |
| 408              | 39              | M         | 2         | J          | 16.5 (0.650)                 |
| 161              | 47              | K         | 6         | N          | 6.10 (0.240)                 |
| 162              | 47              | M         | 6         | N          | 6.10 (0.240)                 |
| 409              | 47              | K         | 6         | J          | 6.10 (0.240)                 |
| 410              | 47              | M         | 6         | J          | 6.10 (0.240)                 |
| 163              | 56              | K         | 6         | N          | 9.14 (0.360)                 |
| 164              | 56              | M         | 6         | N          | 9.14 (0.360)                 |
| 411              | 56              | K         | 6         | J          | 9.14 (0.360)                 |
| 412              | 56              | M         | 6         | J          | 9.14 (0.360)                 |
| 165              | 68              | K         | 6         | N          | 9.14 (0.360)                 |
| 166              | 68              | M         | 6         | N          | 9.14 (0.360)                 |
| 413              | 68              | K         | 6         | J          | 9.14 (0.360)                 |
| 414              | 68              | M         | 6         | J          | 9.14 (0.360)                 |
| 167              | 82              | K         | 6         | N          | 12.2 (0.480)                 |
| 168              | 82              | M         | 6         | N          | 12.2 (0.480)                 |
| 415              | 82              | K         | 6         | J          | 12.2 (0.480)                 |
| 416              | 82              | M         | 6         | J          | 12.2 (0.480)                 |
| 169              | 100             | K         | 6         | N          | 16.5 (0.650)                 |
| 170              | 100             | M         | 6         | N          | 16.5 (0.650)                 |
| 417              | 100             | K         | 6         | J          | 16.5 (0.650)                 |
| 418              | 100             | M         | 6         | J          | 16.5 (0.650)                 |
| 171              | 120             | K         | 6         | N          | 16.5 (0.650)                 |
| 172              | 120             | M         | 6         | N          | 16.5 (0.650)                 |
| 419              | 120             | K         | 6         | J          | 16.5 (0.650)                 |
| 420              | 120             | M         | 6         | J          | 16.5 (0.650)                 |



# SMPS Stacked MLC Capacitors

(SM Style) SM Military Styles DSCC Dwg. #87106 (X7R)



U.S. Preferred Styles

## Electrical characteristics

| DSCC Dwg. 87106- | Cap. Value (μF) | Cap. Tol. | Case Code | Lead Style | Max. A Dimension mm (inches) |
|------------------|-----------------|-----------|-----------|------------|------------------------------|
| 500V             |                 |           |           |            |                              |
| 173              | .15             | K         | 5         | N          | 3.05 (0.120)                 |
| 174              | .15             | M         | 5         | N          | 3.05 (0.120)                 |
| 421              | .15             | K         | 5         | J          | 3.05 (0.120)                 |
| 422              | .15             | M         | 5         | J          | 3.05 (0.120)                 |
| 175              | .18             | K         | 5         | N          | 6.10 (0.240)                 |
| 176              | .18             | M         | 5         | N          | 6.10 (0.240)                 |
| 423              | .18             | K         | 5         | J          | 6.10 (0.240)                 |
| 424              | .18             | M         | 5         | J          | 6.10 (0.240)                 |
| 177              | .22             | K         | 5         | N          | 6.10 (0.240)                 |
| 178              | .22             | M         | 5         | N          | 6.10 (0.240)                 |
| 425              | .22             | K         | 5         | J          | 6.10 (0.240)                 |
| 426              | .22             | M         | 5         | J          | 6.10 (0.240)                 |
| 179              | .27             | K         | 5         | N          | 6.10 (0.240)                 |
| 180              | .27             | M         | 5         | N          | 6.10 (0.240)                 |
| 427              | .27             | K         | 5         | J          | 6.10 (0.240)                 |
| 428              | .27             | M         | 5         | J          | 6.10 (0.240)                 |
| 181              | .33             | K         | 5         | N          | 9.14 (0.360)                 |
| 182              | .33             | M         | 5         | N          | 9.14 (0.360)                 |
| 429              | .33             | K         | 5         | J          | 9.14 (0.360)                 |
| 430              | .33             | M         | 5         | J          | 9.14 (0.360)                 |
| 183              | .39             | K         | 5         | N          | 9.14 (0.360)                 |
| 184              | .39             | M         | 5         | N          | 9.14 (0.360)                 |
| 431              | .39             | K         | 5         | J          | 9.14 (0.360)                 |
| 432              | .39             | M         | 5         | J          | 9.14 (0.360)                 |
| 185              | .47             | K         | 5         | N          | 9.14 (0.360)                 |
| 186              | .47             | M         | 5         | N          | 9.14 (0.360)                 |
| 433              | .47             | K         | 5         | J          | 9.14 (0.360)                 |
| 434              | .47             | M         | 5         | J          | 9.14 (0.360)                 |
| 187              | .56             | K         | 5         | N          | 12.2 (0.480)                 |
| 188              | .56             | M         | 5         | N          | 12.2 (0.480)                 |
| 435              | .56             | K         | 5         | J          | 12.2 (0.480)                 |
| 436              | .56             | M         | 5         | J          | 12.2 (0.480)                 |
| 189              | .68             | K         | 5         | N          | 16.5 (0.650)                 |
| 190              | .68             | M         | 5         | N          | 16.5 (0.650)                 |
| 437              | .68             | K         | 5         | J          | 16.5 (0.650)                 |
| 438              | .68             | M         | 5         | J          | 16.5 (0.650)                 |
| 231              | .82             | K         | 4         | N          | 9.14 (0.360)                 |
| 232              | .82             | M         | 4         | N          | 9.14 (0.360)                 |
| 439              | .82             | K         | 4         | J          | 9.14 (0.360)                 |
| 440              | .82             | M         | 4         | J          | 9.14 (0.360)                 |
| 191              | 1.0             | K         | 4         | N          | 9.14 (0.360)                 |
| 192              | 1.0             | M         | 4         | N          | 9.14 (0.360)                 |
| 441              | 1.0             | K         | 4         | J          | 9.14 (0.360)                 |
| 442              | 1.0             | M         | 4         | J          | 9.14 (0.360)                 |
| 193              | 1.2             | K         | 4         | N          | 9.14 (0.360)                 |
| 194              | 1.2             | M         | 4         | N          | 9.14 (0.360)                 |
| 443              | 1.2             | K         | 4         | J          | 9.14 (0.360)                 |
| 444              | 1.2             | M         | 4         | J          | 9.14 (0.360)                 |
| 195              | 1.5             | K         | 4         | N          | 12.2 (0.480)                 |
| 196              | 1.5             | M         | 4         | N          | 12.2 (0.480)                 |
| 445              | 1.5             | K         | 4         | J          | 12.2 (0.480)                 |
| 446              | 1.5             | M         | 4         | J          | 12.2 (0.480)                 |
| 197              | 1.8             | K         | 4         | N          | 16.5 (0.650)                 |
| 198              | 1.8             | M         | 4         | N          | 16.5 (0.650)                 |
| 447              | 1.8             | K         | 4         | J          | 16.5 (0.650)                 |
| 448              | 1.8             | M         | 4         | J          | 16.5 (0.650)                 |
| 233              | 2.2             | K         | 3         | N          | 6.10 (0.240)                 |
| 234              | 2.2             | M         | 3         | N          | 6.10 (0.240)                 |
| 449              | 2.2             | K         | 3         | J          | 6.10 (0.240)                 |
| 450              | 2.2             | M         | 3         | J          | 6.10 (0.240)                 |
| 199              | 2.7             | K         | 3         | N          | 9.14 (0.360)                 |
| 200              | 2.7             | M         | 3         | N          | 9.14 (0.360)                 |
| 451              | 2.7             | K         | 3         | J          | 9.14 (0.360)                 |
| 452              | 2.7             | M         | 3         | J          | 9.14 (0.360)                 |

| DSCC Dwg. 87106- | Cap. Value (μF) | Cap. Tol. | Case Code | Lead Style | Max. A Dimension mm (inches) |
|------------------|-----------------|-----------|-----------|------------|------------------------------|
| 500V             |                 |           |           |            |                              |
| 201              | 3.3             | K         | 3         | N          | 9.14 (0.360)                 |
| 202              | 3.3             | M         | 3         | N          | 9.14 (0.360)                 |
| 453              | 3.3             | K         | 3         | J          | 9.14 (0.360)                 |
| 454              | 3.3             | M         | 3         | J          | 9.14 (0.360)                 |
| 203              | 3.9             | K         | 3         | N          | 9.14 (0.360)                 |
| 204              | 3.9             | M         | 3         | N          | 9.14 (0.360)                 |
| 455              | 3.9             | K         | 3         | J          | 9.14 (0.360)                 |
| 456              | 3.9             | M         | 3         | J          | 9.14 (0.360)                 |
| 205              | 4.7             | K         | 3         | N          | 12.2 (0.480)                 |
| 206              | 4.7             | M         | 3         | N          | 12.2 (0.480)                 |
| 457              | 4.7             | K         | 3         | J          | 12.2 (0.480)                 |
| 458              | 4.7             | M         | 3         | J          | 12.2 (0.480)                 |
| 207              | 5.6             | K         | 3         | N          | 16.5 (0.650)                 |
| 208              | 5.6             | M         | 3         | N          | 16.5 (0.650)                 |
| 459              | 5.6             | K         | 3         | J          | 16.5 (0.650)                 |
| 460              | 5.6             | M         | 3         | J          | 16.5 (0.650)                 |
| 235              | 6.8             | K         | 1         | N          | 12.2 (0.480)                 |
| 236              | 6.8             | M         | 1         | N          | 12.2 (0.480)                 |
| 461              | 6.8             | K         | 1         | J          | 12.2 (0.480)                 |
| 462              | 6.8             | M         | 1         | J          | 12.2 (0.480)                 |
| 209              | 8.2             | K         | 1         | N          | 12.2 (0.480)                 |
| 210              | 8.2             | M         | 1         | N          | 12.2 (0.480)                 |
| 463              | 8.2             | K         | 1         | J          | 12.2 (0.480)                 |
| 464              | 8.2             | M         | 1         | J          | 12.2 (0.480)                 |
| 211              | 10              | K         | 1         | N          | 12.2 (0.480)                 |
| 212              | 10              | M         | 1         | N          | 12.2 (0.480)                 |
| 465              | 10              | K         | 1         | J          | 12.2 (0.480)                 |
| 466              | 10              | M         | 1         | J          | 12.2 (0.480)                 |
| 213              | 12              | K         | 1         | N          | 16.5 (0.650)                 |
| 214              | 12              | M         | 1         | N          | 16.5 (0.650)                 |
| 467              | 12              | K         | 1         | J          | 16.5 (0.650)                 |
| 468              | 12              | M         | 1         | J          | 16.5 (0.650)                 |
| 237              | 15              | K         | 2         | N          | 16.5 (0.650)                 |
| 238              | 15              | M         | 2         | N          | 16.5 (0.650)                 |
| 469              | 15              | K         | 2         | J          | 16.5 (0.650)                 |
| 470              | 15              | M         | 2         | J          | 16.5 (0.650)                 |
| 215              | 18              | K         | 2         | N          | 16.5 (0.650)                 |
| 216              | 18              | M         | 2         | N          | 16.5 (0.650)                 |
| 471              | 18              | K         | 2         | J          | 16.5 (0.650)                 |
| 472              | 18              | M         | 2         | J          | 16.5 (0.650)                 |
| 239              | 22              | K         | 6         | N          | 9.14 (0.360)                 |
| 240              | 22              | M         | 6         | N          | 9.14 (0.360)                 |
| 473              | 22              | K         | 6         | J          | 9.14 (0.360)                 |
| 474              | 22              | M         | 6         | J          | 9.14 (0.360)                 |
| 217              | 27              | K         | 6         | N          | 9.14 (0.360)                 |
| 218              | 27              | M         | 6         | N          | 9.14 (0.360)                 |
| 475              | 27              | K         | 6         | J          | 9.14 (0.360)                 |
| 476              | 27              | M         | 6         | J          | 9.14 (0.360)                 |
| 219              | 33              | K         | 6         | N          | 12.2 (0.480)                 |
| 220              | 33              | M         | 6         | N          | 12.2 (0.480)                 |
| 477              | 33              | K         | 6         | J          | 12.2 (0.480)                 |
| 478              | 33              | M         | 6         | J          | 12.2 (0.480)                 |
| 221              | 39              | K         | 6         | N          | 16.5 (0.650)                 |
| 222              | 39              | M         | 6         | N          | 16.5 (0.650)                 |
| 479              | 39              | K         | 6         | J          | 16.5 (0.650)                 |
| 480              | 39              | M         | 6         | J          | 16.5 (0.650)                 |

# SMPS Stacked MLC Capacitors

(SM Style) SM Military Styles DSCC Dwg. #88011 (C0G)



U.S. Preferred Styles

## CG (C0G) Electrical characteristics per MIL-C-20

| DSCC Dwg. 88011- | Cap. Value (µF) | Cap. Tol. | Case Code | Lead Style | Max. A Dimension mm (inches) |
|------------------|-----------------|-----------|-----------|------------|------------------------------|
| <b>50V</b>       |                 |           |           |            |                              |
| 001*             | .056            | J         | 5         | N          | 3.05 (0.120)                 |
| 002*             | .056            | K         | 5         | N          | 3.05 (0.120)                 |
| 003*             | .068            | J         | 5         | N          | 6.10 (0.240)                 |
| 004*             | .068            | K         | 5         | N          | 6.10 (0.240)                 |
| 005*             | .082            | J         | 5         | N          | 6.10 (0.240)                 |
| 006*             | .082            | K         | 5         | N          | 6.10 (0.240)                 |
| 007*             | .10             | J         | 5         | N          | 6.10 (0.240)                 |
| 008*             | .10             | K         | 5         | N          | 6.10 (0.240)                 |
| 009*             | .12             | J         | 5         | N          | 9.14 (0.360)                 |
| 010*             | .12             | K         | 5         | N          | 9.14 (0.360)                 |
| 011*             | .15             | J         | 5         | N          | 9.14 (0.360)                 |
| 012*             | .15             | K         | 5         | N          | 9.14 (0.360)                 |
| 013*             | .18             | J         | 5         | N          | 12.2 (0.480)                 |
| 014*             | .18             | K         | 5         | N          | 12.2 (0.480)                 |
| 015*             | .22             | J         | 5         | N          | 12.2 (0.480)                 |
| 016*             | .22             | K         | 5         | N          | 12.2 (0.480)                 |
| 017*             | .27             | J         | 5         | N          | 16.5 (0.650)                 |
| 018*             | .27             | K         | 5         | N          | 16.5 (0.650)                 |
| 019*             | .33             | J         | 4         | N          | 9.14 (0.360)                 |
| 020*             | .33             | K         | 4         | N          | 9.14 (0.360)                 |
| 021*             | .39             | J         | 4         | N          | 12.2 (0.480)                 |
| 022*             | .39             | K         | 4         | N          | 12.2 (0.480)                 |
| 023*             | .47             | J         | 4         | N          | 12.2 (0.480)                 |
| 024*             | .47             | K         | 4         | N          | 12.2 (0.480)                 |
| 025*             | .56             | J         | 4         | N          | 16.5 (0.650)                 |
| 026*             | .56             | K         | 4         | N          | 16.5 (0.650)                 |
| 027*             | .68             | J         | 3         | N          | 6.10 (0.240)                 |
| 028*             | .68             | K         | 3         | N          | 6.10 (0.240)                 |
| 029*             | .82             | J         | 3         | N          | 6.10 (0.240)                 |
| 030*             | .82             | K         | 3         | N          | 6.10 (0.240)                 |
| 031*             | 1.0             | J         | 3         | N          | 9.14 (0.360)                 |
| 032*             | 1.0             | K         | 3         | N          | 9.14 (0.360)                 |
| 033*             | 1.2             | J         | 3         | N          | 9.14 (0.360)                 |
| 034*             | 1.2             | K         | 3         | N          | 9.14 (0.360)                 |
| 035*             | 1.5             | J         | 3         | N          | 12.2 (0.480)                 |
| 036*             | 1.5             | K         | 3         | N          | 12.2 (0.480)                 |
| 037*             | 1.8             | J         | 3         | N          | 12.2 (0.480)                 |
| 038*             | 1.8             | K         | 3         | N          | 12.2 (0.480)                 |
| 039*             | 2.2             | J         | 3         | N          | 16.5 (0.650)                 |
| 040*             | 2.2             | K         | 3         | N          | 16.5 (0.650)                 |
| 041*             | 2.7             | J         | 1         | N          | 9.14 (0.360)                 |
| 042*             | 2.7             | K         | 1         | N          | 9.14 (0.360)                 |
| 043*             | 3.3             | J         | 1         | N          | 12.2 (0.480)                 |
| 044*             | 3.3             | K         | 1         | N          | 12.2 (0.480)                 |
| 045*             | 3.9             | J         | 1         | N          | 12.2 (0.480)                 |
| 046*             | 3.9             | K         | 1         | N          | 12.2 (0.480)                 |
| 047*             | 4.7             | J         | 1         | N          | 16.5 (0.650)                 |
| 048*             | 4.7             | K         | 1         | N          | 16.5 (0.650)                 |
| 049*             | 5.6             | J         | 2         | N          | 16.5 (0.650)                 |
| 050*             | 5.6             | K         | 2         | N          | 16.5 (0.650)                 |
| 051*             | 6.8             | J         | 6         | N          | 9.14 (0.360)                 |
| 052*             | 6.8             | K         | 6         | N          | 9.14 (0.360)                 |
| 053*             | 8.2             | J         | 6         | N          | 9.14 (0.360)                 |
| 054*             | 8.2             | K         | 6         | N          | 9.14 (0.360)                 |
| 055*             | 10              | J         | 6         | N          | 12.2 (0.480)                 |
| 056*             | 10              | K         | 6         | N          | 12.2 (0.480)                 |
| 057*             | 12              | J         | 6         | N          | 12.2 (0.480)                 |
| 058*             | 12              | K         | 6         | N          | 12.2 (0.480)                 |
| 059*             | 15              | J         | 6         | N          | 16.5 (0.650)                 |
| 060*             | 15              | K         | 6         | N          | 16.5 (0.650)                 |
| <b>100V</b>      |                 |           |           |            |                              |
| 061*             | .047            | J         | 5         | N          | 6.10 (0.240)                 |
| 062*             | .047            | K         | 5         | N          | 6.10 (0.240)                 |
| 063*             | .056            | J         | 5         | N          | 6.10 (0.240)                 |
| 064*             | .056            | K         | 5         | N          | 6.10 (0.240)                 |
| 065*             | .068            | J         | 5         | N          | 6.10 (0.240)                 |
| 066*             | .068            | K         | 5         | N          | 6.10 (0.240)                 |
| 067*             | .082            | J         | 5         | N          | 6.10 (0.240)                 |
| 068*             | .082            | K         | 5         | N          | 6.10 (0.240)                 |
| 069*             | .10             | J         | 5         | N          | 9.14 (0.360)                 |
| 070*             | .10             | K         | 5         | N          | 9.14 (0.360)                 |
| 071*             | .12             | J         | 5         | N          | 9.14 (0.360)                 |
| 072*             | .12             | K         | 5         | N          | 9.14 (0.360)                 |
| 073*             | .15             | J         | 5         | N          | 12.2 (0.480)                 |
| 074*             | .15             | K         | 5         | N          | 12.2 (0.480)                 |
| 075*             | .18             | J         | 5         | N          | 12.2 (0.480)                 |
| 076*             | .18             | K         | 5         | N          | 12.2 (0.480)                 |
| 077*             | .22             | J         | 5         | N          | 16.5 (0.650)                 |
| 078*             | .22             | K         | 5         | N          | 16.5 (0.650)                 |
| 079*             | .27             | J         | 4         | N          | 9.14 (0.360)                 |

| DSCC Dwg. 88011-        | Cap. Value (µF) | Cap. Tol. | Case Code | Lead Style | Max. A Dimension mm (inches) |
|-------------------------|-----------------|-----------|-----------|------------|------------------------------|
| <b>100V (continued)</b> |                 |           |           |            |                              |
| 080*                    | .27             | K         | 4         | N          | 9.14 (0.360)                 |
| 081*                    | .33             | J         | 4         | N          | 12.2 (0.480)                 |
| 082*                    | .33             | K         | 4         | N          | 12.2 (0.480)                 |
| 083*                    | .39             | J         | 4         | N          | 12.2 (0.480)                 |
| 084*                    | .39             | K         | 4         | N          | 12.2 (0.480)                 |
| 085*                    | .47             | J         | 4         | N          | 16.5 (0.650)                 |
| 086*                    | .47             | K         | 4         | N          | 16.5 (0.650)                 |
| 087*                    | .56             | J         | 4         | N          | 16.5 (0.650)                 |
| 088*                    | .56             | K         | 4         | N          | 16.5 (0.650)                 |
| 089*                    | .68             | J         | 3         | N          | 6.10 (0.240)                 |
| 090*                    | .68             | K         | 3         | N          | 6.10 (0.240)                 |
| 091*                    | .82             | J         | 3         | N          | 9.14 (0.360)                 |
| 092*                    | .82             | K         | 3         | N          | 9.14 (0.360)                 |
| 093*                    | 1.0             | J         | 3         | N          | 9.14 (0.360)                 |
| 094*                    | 1.0             | K         | 3         | N          | 9.14 (0.360)                 |
| 095*                    | 1.2             | J         | 3         | N          | 12.2 (0.480)                 |
| 096*                    | 1.2             | K         | 3         | N          | 12.2 (0.480)                 |
| 097*                    | 1.5             | J         | 3         | N          | 12.2 (0.480)                 |
| 098*                    | 1.5             | K         | 3         | N          | 12.2 (0.480)                 |
| 099*                    | 1.8             | J         | 3         | N          | 16.5 (0.650)                 |
| 100*                    | 1.8             | K         | 3         | N          | 16.5 (0.650)                 |
| 101*                    | 2.2             | J         | 1         | N          | 12.2 (0.480)                 |
| 102*                    | 2.2             | K         | 1         | N          | 12.2 (0.480)                 |
| 103*                    | 2.7             | J         | 1         | N          | 12.2 (0.480)                 |
| 104*                    | 2.7             | K         | 1         | N          | 12.2 (0.480)                 |
| 105*                    | 3.3             | J         | 1         | N          | 16.5 (0.650)                 |
| 106*                    | 3.3             | K         | 1         | N          | 16.5 (0.650)                 |
| 107*                    | 3.9             | J         | 2         | N          | 12.2 (0.480)                 |
| 108*                    | 3.9             | K         | 2         | N          | 12.2 (0.480)                 |
| 109*                    | 4.7             | J         | 2         | N          | 16.5 (0.650)                 |
| 110*                    | 4.7             | K         | 2         | N          | 16.5 (0.650)                 |
| 111*                    | 5.6             | J         | 6         | N          | 9.14 (0.360)                 |
| 112*                    | 5.6             | K         | 6         | N          | 9.14 (0.360)                 |
| 113*                    | 6.8             | J         | 6         | N          | 9.14 (0.360)                 |
| 114*                    | 6.8             | K         | 6         | N          | 9.14 (0.360)                 |
| 115*                    | 8.2             | J         | 6         | N          | 12.2 (0.480)                 |
| 116*                    | 8.2             | K         | 6         | N          | 12.2 (0.480)                 |
| 117*                    | 10              | J         | 6         | N          | 16.5 (0.650)                 |
| 118*                    | 10              | K         | 6         | N          | 16.5 (0.650)                 |
| 119*                    | 12              | J         | 6         | N          | 16.5 (0.650)                 |
| 120*                    | 12              | K         | 6         | N          | 16.5 (0.650)                 |
| <b>200V</b>             |                 |           |           |            |                              |
| 121*                    | .022            | J         | 5         | N          | 3.05 (0.120)                 |
| 122*                    | .022            | K         | 5         | N          | 3.05 (0.120)                 |
| 123*                    | .027            | J         | 5         | N          | 6.10 (0.240)                 |
| 124*                    | .027            | K         | 5         | N          | 6.10 (0.240)                 |
| 125*                    | .033            | J         | 5         | N          | 6.10 (0.240)                 |
| 126*                    | .033            | K         | 5         | N          | 6.10 (0.240)                 |
| 127*                    | .039            | J         | 5         | N          | 6.10 (0.240)                 |
| 128*                    | .039            | K         | 5         | N          | 6.10 (0.240)                 |
| 129*                    | .047            | J         | 5         | N          | 9.14 (0.360)                 |
| 130*                    | .047            | K         | 5         | N          | 9.14 (0.360)                 |
| 131*                    | .056            | J         | 5         | N          | 9.14 (0.360)                 |
| 132*                    | .056            | K         | 5         | N          | 9.14 (0.360)                 |
| 133*                    | .068            | J         | 5         | N          | 12.2 (0.480)                 |
| 134*                    | .068            | K         | 5         | N          | 12.2 (0.480)                 |
| 135*                    | .082            | J         | 5         | N          | 12.2 (0.480)                 |
| 136*                    | .082            | K         | 5         | N          | 12.2 (0.480)                 |
| 137*                    | .10             | J         | 5         | N          | 16.5 (0.650)                 |
| 138*                    | .10             | K         | 5         | N          | 16.5 (0.650)                 |
| 139*                    | .12             | J         | 4         | N          | 9.14 (0.360)                 |
| 140*                    | .12             | K         | 4         | N          | 9.14 (0.360)                 |
| 141*                    | .15             | J         | 4         | N          | 9.14 (0.360)                 |
| 142*                    | .15             | K         | 4         | N          | 9.14 (0.360)                 |
| 143*                    | .18             | J         | 4         | N          | 12.2 (0.480)                 |
| 144*                    | .18             | K         | 4         | N          | 12.2 (0.480)                 |
| 145*                    | .22             | J         | 4         | N          | 12.2 (0.480)                 |
| 146*                    | .22             | K         | 4         | N          | 12.2 (0.480)                 |
| 147*                    | .27             | J         | 4         | N          | 16.5 (0.650)                 |
| 148*                    | .27             | K         | 4         | N          | 16.5 (0.650)                 |
| 149*                    | .33             | J         | 3         | N          | 6.10 (0.240)                 |
| 150*                    | .33             | K         | 3         | N          | 6.10 (0.240)                 |
| 151*                    | .39             | J         | 3         | N          | 6.10 (0.240)                 |
| 152*                    | .39             | K         | 3         | N          | 6.10 (0.240)                 |
| 153*                    | .47             | J         | 3         | N          | 9.14 (0.360)                 |
| 154*                    | .47             | K         | 3         | N          | 9.14 (0.360)                 |
| 155*                    | .56             | J         | 3         | N          | 9.14 (0.360)                 |
| 156*                    | .56             | K         | 3         | N          | 9.14 (0.360)                 |
| 157*                    | .68             | J         | 3         | N          | 12.2 (0.480)                 |
| 158*                    | .68             | K         | 3         | N          | 12.2 (0.480)                 |

| DSCC<br>Dwg.<br>88011- | Cap.<br>Value<br>(µF) | Cap.<br>Tol. | Case<br>Code | Lead<br>Style | Max. A<br>Dimension<br>mm (inches) |
|------------------------|-----------------------|--------------|--------------|---------------|------------------------------------|
| 200V (continued)       |                       |              |              |               |                                    |
| 159*                   | .82                   | J            | 3            | N             | 16.5 (0.650)                       |
| 160*                   | .82                   | K            | 3            | N             | 16.5 (0.650)                       |
| 161*                   | 1.0                   | J            | 3            | N             | 16.5 (0.650)                       |
| 162*                   | 1.0                   | K            | 3            | N             | 16.5 (0.650)                       |
| 163*                   | 1.2                   | J            | 1            | N             | 12.2 (0.480)                       |
| 164*                   | 1.2                   | K            | 1            | N             | 12.2 (0.480)                       |
| 165*                   | 1.5                   | J            | 1            | N             | 12.2 (0.480)                       |
| 166*                   | 1.5                   | K            | 1            | N             | 12.2 (0.480)                       |
| 167*                   | 1.8                   | J            | 1            | N             | 16.5 (0.650)                       |
| 168*                   | 1.8                   | K            | 1            | N             | 16.5 (0.650)                       |
| 169*                   | 2.2                   | J            | 2            | N             | 12.2 (0.480)                       |
| 170*                   | 2.2                   | K            | 2            | N             | 12.2 (0.480)                       |
| 171*                   | 2.7                   | J            | 2            | N             | 16.5 (0.650)                       |
| 172*                   | 2.7                   | K            | 2            | N             | 16.5 (0.650)                       |
| 173*                   | 3.3                   | J            | 6            | N             | 9.14 (0.360)                       |
| 174*                   | 3.3                   | K            | 6            | N             | 9.14 (0.360)                       |
| 175*                   | 3.9                   | J            | 6            | N             | 9.14 (0.360)                       |
| 176*                   | 3.9                   | K            | 6            | N             | 9.14 (0.360)                       |
| 177*                   | 4.7                   | J            | 6            | N             | 12.2 (0.480)                       |
| 178*                   | 4.7                   | K            | 6            | N             | 12.2 (0.480)                       |
| 179*                   | 5.6                   | J            | 6            | N             | 16.5 (0.650)                       |
| 180*                   | 5.6                   | K            | 6            | N             | 16.5 (0.650)                       |
| 500V                   |                       |              |              |               |                                    |
| 181*                   | .010                  | J            | 5            | N             | 3.05 (0.120)                       |
| 182*                   | .010                  | K            | 5            | N             | 3.05 (0.120)                       |
| 183*                   | .012                  | J            | 5            | N             | 6.10 (0.240)                       |
| 184*                   | .012                  | K            | 5            | N             | 6.10 (0.240)                       |
| 185*                   | .015                  | J            | 5            | N             | 6.10 (0.240)                       |
| 186*                   | .015                  | K            | 5            | N             | 6.10 (0.240)                       |
| 187*                   | .018                  | J            | 5            | N             | 6.10 (0.240)                       |
| 188*                   | .018                  | K            | 5            | N             | 6.10 (0.240)                       |
| 189*                   | .022                  | J            | 5            | N             | 9.14 (0.360)                       |
| 190*                   | .022                  | K            | 5            | N             | 9.14 (0.360)                       |
| 191*                   | .027                  | J            | 5            | N             | 9.14 (0.360)                       |
| 192*                   | .027                  | K            | 5            | N             | 9.14 (0.360)                       |
| 193*                   | .033                  | J            | 5            | N             | 12.2 (0.480)                       |
| 194*                   | .033                  | K            | 5            | N             | 12.2 (0.480)                       |
| 195*                   | .039                  | J            | 5            | N             | 12.2 (0.480)                       |
| 196*                   | .039                  | K            | 5            | N             | 12.2 (0.480)                       |
| 197*                   | .047                  | J            | 5            | N             | 16.5 (0.650)                       |
| 198*                   | .047                  | K            | 5            | N             | 16.5 (0.650)                       |
| 199*                   | .056                  | J            | 4            | N             | 9.14 (0.360)                       |
| 200*                   | .056                  | K            | 4            | N             | 9.14 (0.360)                       |
| 201*                   | .068                  | J            | 4            | N             | 9.14 (0.360)                       |
| 202*                   | .068                  | K            | 4            | N             | 9.14 (0.360)                       |
| 203*                   | .082                  | J            | 4            | N             | 12.2 (0.480)                       |
| 204*                   | .082                  | K            | 4            | N             | 12.2 (0.480)                       |
| 205*                   | .10                   | J            | 4            | N             | 12.2 (0.480)                       |
| 206*                   | .10                   | K            | 4            | N             | 12.2 (0.480)                       |
| 207*                   | .12                   | J            | 4            | N             | 16.5 (0.650)                       |
| 208*                   | .12                   | K            | 4            | N             | 16.5 (0.650)                       |
| 209*                   | .15                   | J            | 3            | N             | 6.10 (0.240)                       |
| 210*                   | .15                   | K            | 3            | N             | 6.10 (0.240)                       |
| 211*                   | .18                   | J            | 3            | N             | 6.10 (0.240)                       |
| 212*                   | .18                   | K            | 3            | N             | 6.10 (0.240)                       |
| 213*                   | .22                   | J            | 3            | N             | 9.14 (0.360)                       |
| 214*                   | .22                   | K            | 3            | N             | 9.14 (0.360)                       |
| 215*                   | .27                   | J            | 3            | N             | 9.14 (0.360)                       |
| 216*                   | .27                   | K            | 3            | N             | 9.14 (0.360)                       |
| 217*                   | .33                   | J            | 3            | N             | 12.2 (0.480)                       |
| 218*                   | .33                   | K            | 3            | N             | 12.2 (0.480)                       |
| 219*                   | .39                   | J            | 3            | N             | 16.5 (0.650)                       |
| 220*                   | .39                   | K            | 3            | N             | 16.5 (0.650)                       |
| 221*                   | .47                   | J            | 1            | N             | 9.14 (0.360)                       |
| 222*                   | .47                   | K            | 1            | N             | 9.14 (0.360)                       |
| 223*                   | .56                   | J            | 1            | N             | 12.2 (0.480)                       |
| 224*                   | .56                   | K            | 1            | N             | 12.2 (0.480)                       |
| 225*                   | .68                   | J            | 1            | N             | 12.2 (0.480)                       |
| 226*                   | .68                   | K            | 1            | N             | 12.2 (0.480)                       |
| 227*                   | .82                   | J            | 1            | N             | 16.5 (0.650)                       |
| 228*                   | .82                   | K            | 1            | N             | 16.5 (0.650)                       |
| 229*                   | 1.0                   | J            | 2            | N             | 12.2 (0.480)                       |
| 230*                   | 1.0                   | K            | 2            | N             | 12.2 (0.480)                       |
| 231*                   | 1.2                   | J            | 2            | N             | 16.5 (0.650)                       |
| 232*                   | 1.2                   | K            | 2            | N             | 16.5 (0.650)                       |
| 233*                   | 1.5                   | J            | 6            | N             | 9.14 (0.360)                       |
| 234*                   | 1.5                   | K            | 6            | N             | 9.14 (0.360)                       |
| 235*                   | 1.8                   | J            | 6            | N             | 12.2 (0.480)                       |
| 236*                   | 1.8                   | K            | 6            | N             | 12.2 (0.480)                       |
| 237*                   | 2.2                   | J            | 6            | N             | 16.5 (0.650)                       |
| 238*                   | 2.2                   | K            | 6            | N             | 16.5 (0.650)                       |