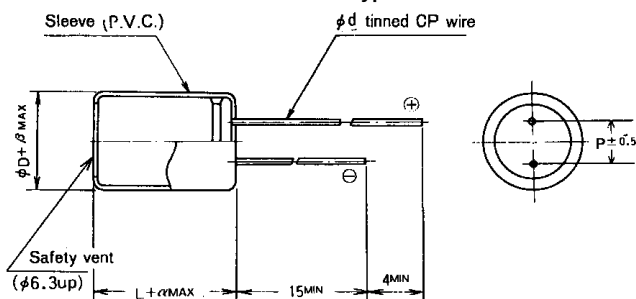


# Aluminum Electrolytic Capacitors **nichicon**

## UVX Series Radial Capacitors

UVX miniature electrolytic capacitor for general purpose features reduced case size anti-solvent through 100 volts. The **VX Series** is most suitable for electronic equipment when a smaller case size is required. The small case size makes it ideal for use with high speed automatic insertion equipment. **Load life:** 2000 hours at 85° C. Units with Ø 6.3 mm or more are provided with our unique safety case/vent. **Capacitance Tolerance:** ±20% at 120 Hz, 20° C. **Operating Temperature Range:** -40° to +85° C.

### Radial Lead Type



Note: Dimensions are in mm.

| øD | 5      | 6.3 | 8   | 10  | 12.5 | 16  | 18  | 20 | 22 | 25   |
|----|--------|-----|-----|-----|------|-----|-----|----|----|------|
| P  | 2      | 2.5 | 3.5 | 5   | 5    | 7.5 | 7.5 | 10 | 10 | 12.5 |
| ød | .5     | .5  | .6  | .6  | .6   | .8  | .8  | 1  | 1  | 1    |
| a  | -100 V | 1   | 1   | 1   | 1.5  | 1.5 | 1.5 | 2  | 2  | 2    |
|    | 160 V~ | -   | 1.5 | 1.5 | 2    | 2   | 2   | 2  | 2  | 2    |
| β  |        | .5  | .5  | .5  | .5   | .5  | .5  | 1  | 1  | 1    |

Type numbering system (Example: 10 V 33μF)

| 1                            | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------------------------|---|---|---|---|---|---|---|---|----|----|----|
| U                            | V | X | 1 | A | 3 | 3 | 1 | M | P  | A  |    |
| Configuration                |   |   |   |   |   |   |   |   |    |    |    |
| Capacitance Tolerance (±20%) |   |   |   |   |   |   |   |   |    |    |    |
| Capacitance (330 μF)         |   |   |   |   |   |   |   |   |    |    |    |
| Rated Voltage (10 V)         |   |   |   |   |   |   |   |   |    |    |    |
| Series Name                  |   |   |   |   |   |   |   |   |    |    |    |
| Type                         |   |   |   |   |   |   |   |   |    |    |    |

| Configuration |      |
|---------------|------|
| øD            | Code |
| 5             | DA   |
| 6.3           | EA   |
| 8 ~ 10        | PA   |
| 12.5 ~ 18     | HA   |
| 20            | RAY  |
| 22            | RAZ  |
| 25            | RAA  |

| Mfr.'s Type | μF   | WVDC | Case Size D X L (mm) | Each |         |
|-------------|------|------|----------------------|------|---------|
|             |      |      |                      | 1-99 | 100-499 |
| UVX0J101MDA | 100  | 6.3  | 5 × 11               | .17  | .13     |
| UVX0J221MEA | 220  |      | 6.3 × 11             | .22  | .17     |
| UVX0J471MPA | 470  |      | 8 × 11.5             | .28  | .21     |
| UVX0J102MPA | 1000 |      | 10 × 12.5            | .46  | .35     |
| UVX0J222MHA | 2200 |      | 12.5 × 20            | .66  | .49     |
| UVX1A220MDA | 22   | 10   | 5 × 11               | .13  | .10     |
| UVX1A330MDA | 33   |      | 5 × 11               | .14  | .11     |
| UVX1A470MDA | 47   |      | 5 × 11               | .14  | .11     |
| UVX1A101MDA | 100  |      | 5 × 11               | .17  | .13     |
| UVX1A221MEA | 220  |      | 6.3 × 11             | .24  | .18     |
| UVX1A331MPA | 330  |      | 8 × 11.5             | .27  | .20     |
| UVX1A471MPA | 470  |      | 8 × 11.5             | .39  | .29     |
| UVX1A102MPA | 1000 |      | 10 × 16              | .46  | .35     |
| UVX1A222MHA | 2200 |      | 12.5 × 20            | .76  | .57     |
| UVX1C100MDA | 10   | 16   | 5 × 11               | .13  | .10     |
| UVX1C220MDA | 22   |      | 5 × 11               | .14  | .11     |
| UVX1C330MDA | 33   |      | 5 × 11               | .14  | .11     |
| UVX1C470MDA | 47   |      | 5 × 11               | .17  | .12     |
| UVX1C101MEA | 100  |      | 6.3 × 11             | .22  | .17     |
| UVX1C221MPA | 220  |      | 8 × 11.5             | .27  | .20     |
| UVX1C331MPA | 330  |      | 8 × 11.5             | .39  | .29     |
| UVX1C471MPA | 470  |      | 10 × 12.5            | .41  | .31     |
| UVX1C102MPA | 1000 |      | 10 × 20              | .57  | .42     |
| UVX1C222MHA | 2200 |      | 12.5 × 25            | 1.16 | .87     |
| UVX1C332MHA | 3300 |      | 16 × 25              | 1.57 | 1.17    |
| UVX1C472MHA | 4700 |      | 16 × 31.5            | 2.23 | 1.68    |
| UVX1E477MDA | 4.7  | 25   | 5 × 11               | .13  | .10     |
| UVX1E100MDA | 10   |      | 5 × 11               | .14  | .11     |
| UVX1E220MDA | 22   |      | 5 × 11               | .17  | .12     |
| UVX1E330MDA | 33   |      | 5 × 11               | .17  | .12     |
| UVX1E470MDA | 47   |      | 5 × 11               | .22  | .17     |
| UVX1E101MEA | 100  |      | 6.3 × 11             | .24  | .18     |
| UVX1E221MPA | 220  |      | 8 × 11.5             | .41  | .31     |
| UVX1E331MPA | 330  |      | 10 × 12.5            | .47  | .35     |
| UVX1E471MPA | 470  |      | 10 × 16              | .57  | .42     |
| UVX1E102MHA | 1000 |      | 12.5 × 20            | .86  | .65     |
| UVX1E222MHA | 2200 |      | 16 × 25              | 1.57 | 1.17    |
| UVX1E332MHA | 3300 |      | 16 × 31.5            | 2.23 | 1.68    |
| UVX1E472MHA | 4700 |      | 18 × 35.5            | 2.90 | 2.18    |
| UVX1V477MDA | 4.7  | 35   | 5 × 11               | .13  | .10     |
| UVX1V100MDA | 10   |      | 5 × 11               | .14  | .11     |
| UVX1V220MDA | 22   |      | 5 × 11               | .17  | .12     |
| UVX1V330MDA | 33   |      | 5 × 11               | .22  | .17     |
| UVX1V470MEA | 47   |      | 6.3 × 11             | .22  | .17     |
| UVX1V101MPA | 100  |      | 8 × 11.5             | .27  | .20     |
| UVX1V221MPA | 220  |      | 10 × 12.5            | .46  | .35     |
| UVX1V331MPA | 330  |      | 10 × 16              | .48  | .36     |
| UVX1V471MPA | 470  |      | 10 × 20              | .57  | .42     |
| UVX1V102MHA | 1000 |      | 12.5 × 25            | 1.21 | .91     |
| UVX1V222MHA | 2200 |      | 16 × 31.5            | 2.22 | 1.67    |
| UVX1V332MHA | 3300 |      | 18 × 35.5            | 2.90 | 2.18    |

| Mfr.'s Type | μF   | WVDC | Case Size D X L (mm) | Each |         |
|-------------|------|------|----------------------|------|---------|
|             |      |      |                      | 1-99 | 100-499 |
| UVX1H0R1MDA | .1   | 50   | 5 × 11               | .13  | .10     |
| UVX1HR22MDA | .22  |      | 5 × 11               | .13  | .10     |
| UVX1HR33MDA | .33  |      | 5 × 11               | .13  | .10     |
| UVX1HR47MDA | .47  |      | 5 × 11               | .13  | .10     |
| UVX1H010MDA | 1    |      | 5 × 11               | .13  | .10     |
| UVX1H2R2MDA | 2.2  |      | 5 × 11               | .13  | .10     |
| UVX1H3R3MDA | 3.3  |      | 5 × 11               | .13  | .10     |
| UVX1H4R7MDA | 4.7  |      | 5 × 11               | .17  | .12     |
| UVX1H100MDA | 10   |      | 5 × 11               | .17  | .12     |
| UVX1H220MDA | 22   |      | 5 × 11               | .22  | .16     |
| UVX1H330MEA | 33   |      | 6.3 × 11             | .24  | .18     |
| UVX1H470MEA | 47   |      | 6.3 × 11             | .24  | .18     |
| UVX1H101MPA | 100  |      | 8 × 11.5             | .39  | .29     |
| UVX1H221MPA | 220  |      | 10 × 16              | .57  | .42     |
| UVX1H331MPA | 330  |      | 10 × 20              | .66  | .50     |
| UVX1H471MHA | 470  | 63   | 12.5 × 20            | .86  | .65     |
| UVX1H102MHA | 1000 |      | 16 × 25              | 1.58 | 1.18    |
| UVX1H222MHA | 2200 |      | 18 × 35.5            | 2.90 | 2.18    |
| UVX1J4R7MDA | 4.7  |      | 5 × 11               | .17  | .12     |
| UVX1J100MDA | 10   |      | 5 × 11               | .17  | .12     |
| UVX1J220MEA | 22   |      | 6.3 × 11             | .24  | .18     |
| UVX1J330MEA | 33   |      | 6.3 × 11             | .24  | .18     |
| UVX1J470MPA | 47   |      | 8 × 11.5             | .27  | .20     |
| UVX1J101MPA | 100  |      | 10 × 12.5            | .46  | .35     |
| UVX1J221MPA | 220  |      | 10 × 20              | .66  | .50     |
| UVX1J471MHA | 470  |      | 12.5 × 25            | 1.29 | .96     |
| UVX1J102MHA | 1000 |      | 16 × 31.5            | 2.11 | 1.59    |
| UVX1J222MHA | 2200 |      | 18 × 40              | 2.90 | 2.18    |
| UVX2A010MDA | 1    | 100  | 5 × 11               | .13  | .10     |
| UVX2A2R2MDA | 2.2  |      | 5 × 11               | .14  | .11     |
| UVX2A4R7MDA | 4.7  |      | 5 × 11               | .17  | .12     |
| UVX2A100MPA | 10   |      | 6.3 × 11             | .25  | .19     |
| UVX2A220MPA | 22   |      | 8 × 11.5             | .28  | .21     |
| UVX2A470MPA | 47   |      | 10 × 16              | .41  | .30     |
| UVX2A101MHA | 100  |      | 12.5 × 20            | .65  | .49     |
| UVX2A221MHA | 220  |      | 16 × 25              | 1.12 | .84     |
| UVX2A471MHA | 470  |      | 16 × 31.5            | 2.11 | 1.59    |

Frequency coefficient of allowable ripple current

| V         | Frequency (Hz) |     | 50   | 120  | 300  | 1k   | 10k~ |
|-----------|----------------|-----|------|------|------|------|------|
|           | Cap. (μF)      |     |      |      |      |      |      |
| 6.3 ~ 100 | ~ 47           | .75 | 1.00 | 1.35 | 1.57 | 2.00 |      |
|           | 100 ~ 470      | .80 | 1.00 | 1.23 | 1.34 | 1.50 |      |
|           | 1000 ~ 33000   | .85 | 1.00 | 1.10 | 1.13 | 1.15 |      |

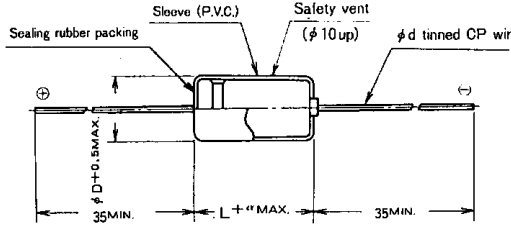
## TVX Series Axial Capacitors

**TVX Compact Series** miniature aluminum electrolytic capacitors provide higher component density in solid-state circuitry. Features further miniaturization of both body length and diameter for greater CV density when compared to conventional type aluminum electrolytic lines. **Capacitance:** ±20%. **Operating temperature range:** -40°C to +85°C.

### Axial Lead Type

Type numbering system (Example: 10 V 33μF)

φD ≤ 18



Note: Dimensions are in mm.

| φD | 5-13 | 16-25.4 |
|----|------|---------|
| φd | .6   | .8      |

| V | 6.3-100 | 160-450 |
|---|---------|---------|
| ∞ | 1       | 2       |

\* ∞ = 2 for φD ≥ 22

|                              |   |   |   |   |   |   |   |   |    |    |
|------------------------------|---|---|---|---|---|---|---|---|----|----|
| 1                            | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| T                            | V | X | 1 | A | 3 | 3 | 1 | M | A  | A  |
| Configuration                |   |   |   |   |   |   |   |   |    |    |
| Capacitance Tolerance (±20%) |   |   |   |   |   |   |   |   |    |    |
| Capacitance (330 μF)         |   |   |   |   |   |   |   |   |    |    |
| Rated Voltage (10 V)         |   |   |   |   |   |   |   |   |    |    |
| Series Name                  |   |   |   |   |   |   |   |   |    |    |
| Type                         |   |   |   |   |   |   |   |   |    |    |

| Configuration |      |
|---------------|------|
| φD            | Code |
| 5 ~ 8         | AA   |
| 10 ~ 18       | CA   |
| 22, 25.4      | DA   |

| Mfr.'s Type | μF    | WVDC | Case Size D X L (mm) | Each |         |
|-------------|-------|------|----------------------|------|---------|
|             |       |      |                      | 1-99 | 100-499 |
| TVX0J101MAA | 100   | 6.3  | 5 × 12               | .31  | .24     |
| TVX0J221MAA | 220   |      | 6.3 × 16             | .32  | .24     |
| TVX0J331MAA | 330   |      | 6.3 × 16             | .43  | .32     |
| TVX0J471MAA | 470   |      | 8 × 16               | .45  | .34     |
| TVX0J102MCA | 1000  |      | 10 × 21              | .69  | .51     |
| TVX1A470MAA | 47    | 10   | 5 × 12               | .25  | .19     |
| TVX1A101MAA | 100   |      | 6.3 × 12             | .31  | .24     |
| TVX1A221MAA | 220   |      | 6.3 × 16             | .37  | .28     |
| TVX1A331MAA | 330   |      | 8 × 16               | .37  | .28     |
| TVX1A471MAA | 470   |      | 8 × 16               | .43  | .32     |
| TVX1A102MCA | 1000  | 16   | 10 × 21              | .61  | .45     |
| TVX1A222MCA | 2200  |      | 13 × 26              | 1.11 | .83     |
| TVX1C220MAA | 22    |      | 5 × 12               | .25  | .19     |
| TVX1C330MAA | 33    |      | 5 × 12               | .27  | .20     |
| TVX1C470MAA | 47    |      | 5 × 12               | .31  | .24     |
| TVX1C101MAA | 100   |      | 6.3 × 16             | .35  | .27     |
| TVX1C221MAA | 220   |      | 8 × 16               | .42  | .31     |
| TVX1C331MAA | 330   |      | 8 × 16               | .49  | .37     |
| TVX1C471MAA | 470   |      | 8 × 20               | .49  | .37     |
| TVX1C102MCA | 1000  | 25   | 10 × 26              | .85  | .64     |
| TVX1C222MCA | 2200  |      | 13 × 31.5            | 1.28 | .96     |
| TVX1C332MCA | 3300  |      | 16 × 31.5            | 2.01 | 1.50    |
| TVX1C472MCA | 4700  |      | 16 × 41.5            | 2.73 | 2.05    |
| TVX1C682MCA | 6800  |      | 18 × 41              | 3.19 | 2.40    |
| TVX1C103MDA | 10000 | 35   | 22 × 40              | 4.21 | 3.16    |
| TVX1C153MDA | 15000 |      | 22 × 52              | 5.94 | 4.46    |
| TVX1E100MAA | 10    |      | 5 × 12               | .25  | .19     |
| TVX1E220MAA | 22    |      | 5 × 12               | .27  | .20     |
| TVX1E330MAA | 33    |      | 5 × 12               | .31  | .24     |
| TVX1E470MAA | 47    |      | 6.3 × 12             | .31  | .24     |
| TVX1E101MAA | 100   |      | 6.3 × 16             | .37  | .28     |
| TVX1E221MAA | 220   |      | 8 × 16               | .43  | .32     |
| TVX1E331MAA | 330   |      | 8 × 20               | .50  | .38     |
| TVX1E471MCA | 470   | 100  | 10 × 26              | .71  | .54     |
| TVX1E102MCA | 1000  |      | 13 × 26              | 1.11 | .83     |
| TVX1E222MCA | 2200  |      | 16 × 31.5            | 2.18 | 1.63    |
| TVX1E332MCA | 3300  |      | 16 × 41.5            | 2.76 | 2.07    |
| TVX1E472MCA | 4700  |      | 18 × 41              | 3.19 | 2.40    |
| TVX1E103MDA | 10000 | 160  | 22 × 52              | 5.93 | 4.45    |
| TVX1V100MAA | 10    |      | 5 × 12               | .25  | .19     |
| TVX1V220MAA | 22    |      | 5 × 12               | .31  | .24     |
| TVX1V330MAA | 33    |      | 6.3 × 12             | .31  | .24     |
| TVX1V470MAA | 47    |      | 6.3 × 16             | .32  | .24     |
| TVX1V101MAA | 100   | 250  | 8 × 16               | .37  | .28     |
| TVX1V221MAA | 220   |      | 8 × 20               | .50  | .38     |
| TVX1V331MCA | 330   |      | 10 × 21              | .61  | .45     |
| TVX1V471MCA | 470   |      | 10 × 26              | .85  | .64     |
| TVX1V102MCA | 1000  |      | 13 × 31.5            | 1.28 | .96     |
| TVX1V222MCA | 2200  | 250  | 16 × 31.5            | 2.56 | 1.92    |
| TVX1V332MCA | 3300  |      | 16 × 41.5            | 3.16 | 2.37    |
| TVX1V472MCA | 4700  |      | 22 × 40              | 4.10 | 3.07    |
| TVX1V103MDA | 10000 |      | 25.4 × 61            | 8.03 | 6.02    |

| Mfr.'s Type | μF   | WVDC | Case Size D X L (mm) | Each |         |
|-------------|------|------|----------------------|------|---------|
|             |      |      |                      | 1-99 | 100-499 |
| TVX1HR47MAA | .47  | 50   | 5 × 12               | .25  | .19     |
| TVX1H010MAA | 1    |      | 5 × 12               | .25  | .19     |
| TVX1H2R2MAA | 2.2  |      | 5 × 12               | .25  | .19     |
| TVX1H3R3MAA | 3.3  |      | 5 × 12               | .25  | .19     |
| TVX1H4R7MAA | 4.7  |      | 5 × 12               | .25  | .19     |
| TVX1H100MAA | 10   | 63   | 5 × 12               | .31  | .24     |
| TVX1H220MAA | 22   |      | 6.3 × 12             | .32  | .24     |
| TVX1H330MAA | 33   |      | 6.3 × 16             | .32  | .24     |
| TVX1H470MAA | 47   |      | 6.3 × 16             | .37  | .28     |
| TVX1H101MAA | 100  |      | 8 × 16               | .49  | .37     |
| TVX1H221MCA | 220  | 100  | 10 × 21              | .61  | .45     |
| TVX1H331MCA | 330  |      | 10 × 26              | .85  | .64     |
| TVX1H471MCA | 470  |      | 13 × 26              | 1.11 | .83     |
| TVX1H102MCA | 1000 |      | 16 × 31.5            | 2.05 | 1.54    |
| TVX1H222MCA | 2200 |      | 18 × 41              | 3.76 | 2.82    |
| TVX1H332MDA | 3300 | 160  | 22 × 40              | 4.65 | 3.48    |
| TVX1H472MDA | 4700 |      | 22 × 52              | 5.94 | 4.46    |
| TVX1J4R7MAA | 4.7  |      | 5 × 12               | .25  | .19     |
| TVX1J100MAA | 10   |      | 5 × 12               | .31  | .23     |
| TVX1J220MAA | 22   |      | 6.3 × 12             | .32  | .24     |
| TVX1J470MAA | 47   | 250  | 8 × 16               | .37  | .28     |
| TVX1J101MAA | 100  |      | 8 × 20               | .50  | .38     |
| TVX1J221MCA | 220  |      | 10 × 26              | .85  | .64     |
| TVX1J471MCA | 470  |      | 13 × 31.5            | 1.45 | 1.09    |
| TVX2A010MAA | 1    | 100  | 5 × 12               | .25  | .19     |
| TVX2A2R2MAA | 2.2  |      | 5 × 12               | .27  | .20     |
| TVX2A4R7MAA | 4.7  |      | 5 × 12               | .31  | .24     |
| TVX2A100MAA | 10   |      | 6.3 × 12             | .31  | .24     |
| TVX2A470MAA | 47   |      | 8 × 20               | .50  | .38     |
| TVX2A101MCA | 100  | 160  | 10 × 26              | .85  | .64     |
| TVX2A221MCA | 220  |      | 13 × 26              | 1.28 | .96     |
| TVX2A471MCA | 470  |      | 16 × 31.5            | 2.56 | 1.92    |
| TVX2C2R2MAA | 2.2  | 250  | 6.3 × 16             | .38  | .29     |
| TVX2C100MAA | 10   |      | 8 × 20               | .51  | .38     |
| TVX2C220MCA | 22   |      | 10 × 26              | .85  | .64     |
| TVX2E2R2MAA | 2.2  |      | 8 × 16               | .47  | .35     |
| TVX2E4R7MAA | 4.7  |      | 8 × 20               | .51  | .38     |
| TVX2E470MCA | 47   | 250  | 16 × 31.5            | 1.93 | 1.45    |
| TVX2E101MCA | 100  |      | 16 × 41.5            | 2.69 | 2.02    |

Frequency coefficient of allowable ripple current

| V         | Cap. (μF)    | Frequency (Hz) |      |      |      |
|-----------|--------------|----------------|------|------|------|
|           |              | 120            | 300  | 1k   | 10k~ |
| 6.3 ~ 100 | ~ 47         | 1.00           | 1.35 | 1.57 | 2.00 |
|           | 100 ~ 470    | 1.00           | 1.23 | 1.34 | 1.50 |
|           | 1000 ~ 22000 | 1.00           | 1.10 | 1.13 | 1.15 |
| 160 ~ 450 | 1 ~ 220      | 1.00           | 1.25 | 1.40 | 1.60 |
|           | 330 ~ 470    | 1.00           | 1.10 | 1.13 | 1.15 |

# Aluminum Electrolytic Capacitors

**nichicon**

## GQ Series - Radial High Reliability Type

### GQ

Snap-in Terminal Type, Long Life, Wide Temperature Range



- Operating Temperature Range: -40°C to 105°C
- Capacitance Tolerance:  $\pm 20\%$
- Marking: Printed with white color letter on dark brown sleeve

| Mfr's Type   | $\mu\text{F}$ | Voltage | Dimensions D×L (mm) | Each |
|--------------|---------------|---------|---------------------|------|
| LGQ2D471MHSZ | 470           | 200     | 22×40               | 4.68 |
| LGQ2D681MHSB | 680           |         | 22×50               | 5.95 |
| LGQ2D102MHSZ | 1000          |         | 35×35               | 8.68 |
| LGQ2E471MHSZ | 470           | 250     | 22×40               | 6.31 |
| LGQ2E681MHSZ | 680           |         | 35×35               | 9.04 |

## LK Series - Snap in Terminal Type

- Operating Temperature Range: -40°C to 85°C
- Capacitance Tolerance:  $\pm 20\%$
- Marking: Printed with white color letter on black sleeve

### LK

Snap-in Terminal Type, Standard



| Mfr's Type   | $\mu\text{F}$ | Voltage | Dimensions D×L (mm) | Each |
|--------------|---------------|---------|---------------------|------|
| LLK1C682MHSZ | 6,800         | 16      | 22×25               | 2.94 |
| LLK1C103MHSZ | 10,000        |         | 25×25               | 3.36 |
| LLK1E472MHSZ | 4,700         | 25      | 22×25               | 2.99 |
| LLK1E103MHSB | 10,000        |         | 30×30               | 4.77 |
| LLK1V332MHSZ | 3,300         | 35      | 22×25               | 2.99 |
| LLK1V472MHSZ | 4,700         |         | 22×25               | 3.70 |
| LLK1V103MHSZ | 10,000        |         | 22×45               | 5.29 |
| LLK1H222MHSZ | 2,200         |         | 22×25               | 3.18 |
| LLK1H332MHSZ | 3,300         | 50      | 25×25               | 3.89 |
| LLK1H472MHSB | 4,700         |         | 30×25               | 4.77 |
| LLK1H103MHSB | 10,000        |         | 30×45               | 7.23 |
| LLK2A102MHSZ | 1,000         |         | 22×30               | 3.70 |
| LLK2D221MHSZ | 220           | 200     | 22×25               | 3.08 |
| LLK2D331MHSZ | 330           |         | 25×25               | 3.81 |
| LLK2D471MHSB | 470           |         | 30×25               | 4.72 |
| LLK2D471MHSZ | 470           |         | 22×40               | 4.17 |
| LLK2D681MHSZ | 680           | 250     | 25×40               | 5.62 |
| LLK2D102MHSZ | 1,000         |         | 35×35               | 7.95 |
| LLK2E221MHSZ | 220           | 250     | 25×25               | 3.81 |
| LLK2E331MHSZ | 330           |         | 25×30               | 4.54 |
| LLK2E471MHSB | 470           |         | 30×35               | 5.62 |
| LLK2E681MHSZ | 680           |         | 35×30               | 7.63 |

## RT Series - Low Profile Sized

### RT

Low-Profile Sized, Wide Temperature Range



- Radial Leads
- Operating Temperature Range: -55°C to 105°C
- Capacitance Tolerance:  $\pm 20\%$
- Marking: Printed with white color letters on black sleeve

| Mfr's Type    | $\mu\text{F}$ | Voltage | Dimensions D×L (mm) | Each |
|---------------|---------------|---------|---------------------|------|
| URT1C470MCH   | 47            | 16      | 6.3 × 9             | .23  |
| URT1C101MNH   | 100           |         | 8 × 9               | .28  |
| URT1C221MNH   | 220           |         | 10 × 9              | .34  |
| URT1C471MNH   | 470           |         | 12.5 × 9            | .46  |
| URT1C222MRH6* | 2200          |         | 18 × 15             | 1.22 |
| URT1E470MCH   | 47            | 25      | 6.3 × 9             | .27  |
| URT1E101MNH   | 100           |         | 8 × 9               | .32  |
| URT1E221MPH   | 220           |         | 10 × 12.5           | .45  |
| URT1E102MRH6* | 1000          |         | 18 × 15             | .80  |
| URT1V220MCH   | 22            | 35      | 6.3 × 9             | .23  |
| URT1V470MNH   | 47            |         | 6.3 × 9             | .28  |
| URT1V101MNH   | 100           |         | 10 × 9              | .34  |
| URT1V102MRH6* | 1000          |         | 18 × 15             | 1.22 |
| URT1H220MCH   | 22            | 50      | 6.3 × 9             | .27  |
| URT1H470MNH   | 47            |         | 8 × 9               | .32  |
| URT1H101MPH   | 100           |         | 10 × 12.5           | .48  |
| URT1H471MRH6* | 470           |         | 18 × 15             | .89  |
| URT1H102MRH   | 1000          |         | 18 × 20             | 1.42 |

## LQ Series - Low Profile Type

- Operating Temperature Range: -40°C to 85°C
- Capacitance Tolerance:  $\pm 20\%$
- Marking: Printed with white color letter on black sleeve

### LQ

Snap-in Terminal Type, Low-Profile Sized



| Mfr's Type   | $\mu\text{F}$ | Voltage | Dimensions D×L (mm) | Each  |
|--------------|---------------|---------|---------------------|-------|
| LLQ2D471MHSZ | 471           | 200     | 22×35               | 4.13  |
| LLQ2D681MHSB | 681           |         | 30×30               | 5.78  |
| LLQ2D102MHSZ | 1000          |         | 35×30               | 7.95  |
| LLQ2D681MHSB | 1500          |         | 35×40               | 10.48 |

## KL Series- Low Leakage Current

- Low leakage current
- Radial leads
- Operating Temperature Range: -40°C to 105°C
- Capacitance Tolerance: M =  $\pm 20\%$ , K =  $\pm 10\%$
- Marking: Printed with black color letter on orange sleeve

### KL

Low Leakage Current



| Mfr's Type     | $\mu\text{F}$ | Voltage | Dimensions D×L (mm) | Cap. Tol. + - | Each |
|----------------|---------------|---------|---------------------|---------------|------|
| UKL1A470MDAANA | 47            | 10      | 5 × 11              | 20            | .24  |
| UKL1A101MEAANA | 100           |         | 6.3 × 11            | 20            | .29  |
| UKL1C100MKDANA | 10            | 16      | 5 × 11              | 10            | .23  |
| UKL1C100MDAANA | 10            |         | 5 × 11              | 20            | .21  |
| UKL1C150MDAANA | 15            |         | 5 × 11              | 20            | .21  |
| UKL1C220KDAANA | 22            |         | 5 × 11              | 10            | .26  |
| UKL1C220MDAANA | 22            |         | 5 × 11              | 20            | .24  |
| UKL1C330KDAANA | 33            |         | 5 × 11              | 10            | .26  |
| UKL1C330MDAANA | 33            |         | 5 × 11              | 20            | .24  |
| UKL1C470KEAANA | 47            |         | 6.3 × 11            | 10            | .30  |
| UKL1C470MEAANA | 47            |         | 6.3 × 11            | 20            | .29  |
| UKL1C680MEAANA | 68            |         | 6.3 × 11            | 20            | .29  |
| UKL1C101KPAANA | 100           | 25      | 8 × 11.5            | 10            | .35  |
| UKL1C101MPAANA | 100           |         | 8 × 11.5            | 20            | .32  |
| UKL1C151MPAANA | 150           |         | 8 × 11.5            | 20            | .37  |
| UKL1C221MPAANA | 220           |         | 10 × 12.5           | 20            | .42  |
| UKL1E470KDAANA | 47            |         | 5 × 11              | 10            | .23  |
| UKL1E470MDAANA | 47            |         | 5 × 11              | 20            | .21  |
| UKL1E100KDAANA | 10            |         | 5 × 11              | 10            | .26  |
| UKL1E100MDAANA | 10            |         | 5 × 11              | 20            | .24  |
| UKL1E150MDAANA | 15            |         | 5 × 11              | 20            | .24  |
| UKL1E220KDAANA | 22            |         | 5 × 11              | 10            | .30  |
| UKL1E220MDAANA | 22            | 35      | 5 × 11              | 20            | .29  |
| UKL1E330KEAANA | 33            |         | 6.3 × 11            | 10            | .30  |
| UKL1E330MEAANA | 33            |         | 6.3 × 11            | 20            | .29  |
| UKL1E470KEAANA | 47            |         | 6.3 × 11            | 10            | .35  |
| UKL1E470MEAANA | 47            |         | 6.3 × 11            | 20            | .32  |
| UKL1E680MPAANA | 68            |         | 8 × 11.5            | 20            | .32  |
| UKL1E101KPAANA | 100           |         | 8 × 11.5            | 10            | .46  |
| UKL1E101MPAANA | 100           |         | 8 × 11.5            | 20            | .37  |
| UKL1V220KEAANA | 22            | 50      | 6.3 × 11            | 10            | .30  |
| UKL1V220MEAANA | 22            |         | 6.3 × 11            | 20            | .29  |
| UKL1V330KEAANA | 33            |         | 6.3 × 11            | 10            | .35  |
| UKL1V330MEAANA | 33            |         | 6.3 × 11            | 20            | .32  |
| UKL1V470KPAANA | 47            |         | 8 × 11.5            | 10            | .35  |
| UKL1V470MPAANA | 47            | 100     | 8 × 11.5            | 20            | .32  |
| UKL1V101MPAANA | 100           |         | 10 × 12.5           | 20            | .42  |
| UKL1H0R1MDAANA | .1            | 50      | 5 × 11              | 20            | .21  |
| UKL1HR22MDAANA | .22           |         | 5 × 11              | 20            | .21  |
| UKL1HR47KDAANA | .47           |         | 5 × 11              | 10            | .23  |
| UKL1HR47MDAANA | .47           |         | 5 × 11              | 20            | .21  |
| UKL1H010KDAANA | 1             |         | 5 × 11              | 10            | .24  |
| UKL1H010MDAANA | 1             |         | 5 × 11              | 20            | .21  |
| UKL1H2R2KDAANA | 2.2           |         | 5 × 11              | 10            | .23  |
| UKL1H2R2MDAANA | 2.2           |         | 5 × 11              | 20            | .21  |
| UKL1H3R3KDAANA | 3.3           |         | 5 × 11              | 10            | .23  |
| UKL1H3R3MDAANA | 3.3           |         | 5 × 11              | 20            | .21  |
| UKL1H4R7KDAANA | 4.7           |         | 5 × 11              | 10            | .26  |
| UKL1H4R7MDAANA | 4.7           |         | 5 × 11              | 20            | .24  |
| UKL1H100KDAANA | 10            |         | 5 × 11              | 10            | .30  |
| UKL1H100MDAANA | 10            |         | 5 × 11              | 20            | .29  |
| UKL1H220KEAANA | 22            |         | 6.3 × 11            | 10            | .35  |
| UKL1H220MEAANA | 22            |         | 6.3 × 11            | 20            | .32  |
| UKL1H470MPAANA | 47            |         | 8 × 11.5            | 20            | .37  |

## PL Series - Low Impedance

**PL** Extremely Low Impedance,  
High Reliability



- Low Impedance, High Reliability
- Suited for use in switching power supplies
- Operating Temperature Range: -55° to +105°C
- Capacitance Tolerance: ±20%

| Mfr's Type    | μF   | Voltage | Dimensions D×L (mm) | Each |
|---------------|------|---------|---------------------|------|
| UPL1A221MEH   | 220  | 10      | 6.5 × 15            | .36  |
| UPL1A471MPH6* | 470  | 10      | 10 × 12.5           | .53  |
| UPL1A392MHH   | 3900 | 10      | 12.5 × 40           | 1.74 |
| UPL1C221MPH   | 220  | 16      | 8 × 11.5            | .49  |
| UPL1C471MPH   | 470  | 16      | 8 × 20              | .70  |
| UPL1C471MPH6* | 470  | 16      | 10 × 15             | .70  |
| UPL1C681MHH6* | 680  | 16      | 6.5 × 15            | 1.05 |
| UPL1C102MHH6* | 1000 | 16      | 16 × 15             | 1.22 |
| UPL1C102MPH   | 1000 | 16      | 10 × 31.5           | 1.22 |
| UPL1C222MHH   | 2200 | 16      | 12.5 × 15           | 2.02 |
| UPL1C222MHH6* | 2200 | 16      | 12.5 × 31.5         | 2.02 |
| UPL1E470MEH   | 47   | 25      | 6.3 × 11            | .36  |
| UPL1E101MEH   | 100  | 25      | 6.3 × 5             | .47  |
| UPL1E221MPH   | 220  | 25      | 8 × 15              | .67  |
| UPL1E221MPH6* | 220  | 25      | 10 × 12.5           | .67  |
| UPL1E331MPH   | 330  | 25      | 8 × 20              | .76  |
| UPL1E331MPH6* | 330  | 25      | 10 × 15             | .76  |
| UPL1E471MHH6* | 470  | 25      | 12.5 × 15           | 1.05 |
| UPL1E471MPH   | 470  | 25      | 10 × 20             | 1.05 |
| UPL1E102MHH   | 1000 | 25      | 12.5 × 15           | 1.69 |
| UPL1E472MHH   | 4700 | 25      | 18 × 40             | 4.07 |
| UPL1V101MPH   | 100  | 35      | 8 × 11.5            | .49  |
| UPL1V151MPH6* | 150  | 35      | 10 × 12.5           | .53  |
| UPL1V221MPH   | 220  | 35      | 8 × 20              | .76  |
| UPL1V221MPH6* | 220  | 35      | 10 × 15             | .76  |
| UPL1V331MPH   | 330  | 35      | 10 × 20             | 1.05 |
| UPL1V331MHH6* | 330  | 35      | 12.5 × 15           | 1.05 |
| UPL1V471MPH   | 470  | 35      | 10 × 31.5           | 1.41 |
| UPL1V471MHH6* | 470  | 35      | 16 × 15             | 1.41 |
| UPL1V681MHH   | 680  | 35      | 12.5 × 25           | 1.62 |
| UPL1V102MHH   | 1000 | 35      | 12.5 × 31.5         | 2.13 |
| UPL1V102MHH6* | 1000 | 35      | 16 × 20             | 2.13 |
| UPL1V152MHH   | 1500 | 35      | 12.5 × 40           | 2.76 |
| UPL1V272MHH   | 2700 | 35      | 16 × 40             | 3.95 |
| UPL1V332MHH   | 3300 | 35      | 18 × 40             | 4.07 |
| UPL1H100MDH   | 10   | 50      | 5 × 11              | .28  |
| UPL1H220MEH   | 22   | 50      | 6.3 × 11            | .36  |
| UPL1H101MPH6* | 100  | 50      | 10 × 15             | .67  |
| UPL1H221MPH   | 220  | 50      | 10 × 25             | .89  |
| UPL1H331MHH6* | 330  | 50      | 16 × 15             | 1.25 |
| UPL1H471MHH   | 470  | 50      | 12.5 × 25           | 1.72 |
| UPL1H471MHH6* | 470  | 50      | 18 × 15             | 1.72 |
| UPL1H102MHH   | 1000 | 50      | 16 × 31.5           | 2.39 |
| UPL1H222MHH   | 2200 | 50      | 18 × 40             | 4.70 |
| UPL1J470MPH   | 47   | 63      | 8 × 11.5            | .49  |
| UPL1J101MPH   | 100  | 63      | 10 × 20             | .79  |
| UPL1J471MHH6* | 470  | 63      | 16 × 25             | 1.99 |

\* Low Profile

## VZ Series - Radial Leads

**VZ** Wide Temperature Range



- Operating Temperature Range: -55° to +105°C
- Capacitance Tolerance: ±20%
- Marking: Printed with white letters on black sleeve

| Mfr's Type  | μF   | Voltage | Dimensions D×L (mm) | Each |
|-------------|------|---------|---------------------|------|
| UVZ1C470MDH | 47   | 16      | 5 × 11              | .19  |
| UVZ1C101MDH | 100  | 16      | 5 × 11              | .24  |
| UVZ1C221MEH | 220  | 16      | 6.3 × 11            | .29  |
| UVZ1C471MPH | 470  | 16      | 8 × 11.5            | .24  |
| UVZ1C102MPH | 1000 | 16      | 10 × 16             | .67  |
| UVZ1C222MHH | 2200 | 16      | 12.5 × 20           | 1.18 |
| UVZ1E220MDH | 22   | 25      | 5 × 11              | .19  |
| UVZ1E470MDH | 47   | 25      | 5 × 11              | .23  |
| UVZ1E101MEH | 100  | 25      | 6.3 × 11            | .28  |
| UVZ1E221MPH | 220  | 25      | 8 × 11.5            | .39  |
| UVZ1E471MPH | 470  | 25      | 10 × 12.5           | .67  |
| UVZ1E102MPH | 1000 | 25      | 10 × 20             | .77  |
| UVZ1V220MDH | 22   | 35      | 5 × 11              | .20  |
| UVZ1V470MDH | 47   | 35      | 5 × 11              | .23  |
| UVZ1V101MEH | 100  | 35      | 6.3 × 11            | .29  |
| UVZ1V221MPH | 220  | 35      | 10 × 12.5           | .50  |
| UVZ1V471MPH | 470  | 35      | 10 × 16             | .70  |
| UVZ1V102MHH | 1000 | 35      | 12.5 × 20           | 1.18 |
| UVZ1H010MDH | 1    | 50      | 5 × 11              | .16  |
| UVZ1H2R2MDH | 2.2  | 50      | 5 × 11              | .16  |
| UVZ1H4R7MDH | 4.7  | 50      | 5 × 11              | .16  |
| UVZ1H100MDH | 10   | 50      | 5 × 11              | .19  |
| UVZ1H220MDH | 22   | 50      | 5 × 11              | .20  |
| UVZ1H470MEH | 47   | 50      | 6.3 × 11            | .28  |
| UVZ1H101MPH | 100  | 50      | 8 × 11.5            | .42  |
| UVZ1H221MPH | 220  | 50      | 10 × 12.5           | .50  |
| UVZ1H471MHH | 470  | 50      | 12.5 × 20           | .85  |
| UVZ1H102MHH | 1000 | 50      | 12.5 × 25           | 1.36 |

## SA Series - 7mm Height

**SA** 7mmL,  
For General Purposes



- Radial Leads
- Operating Temperature Range: -40° to +85°C
- Capacitance Tolerance: ±20%

| Mfr's Type   | μF  | Voltage | Dimensions D×L (mm) | Each |
|--------------|-----|---------|---------------------|------|
| USA1C100MCA  | 10  | 16      | 4 × 7               | .17  |
| USA1C470MCA  | 47  | 16      | 6.3 × 7             | .20  |
| USR1C101MCA* | 100 | 16      | 6.3 × 7             | .24  |
| USA1V100MCA  | 10  | 35      | 5 × 7               | .18  |
| USA1V220MCA  | 22  | 35      | 6.3 × 7             | .20  |
| USA1H010MCA  | 1   | 50      | 4 × 7               | .17  |
| USA1H2R2MCA  | 2.2 | 50      | 4 × 7               | .17  |
| USA1H4R7MCA  | 4.7 | 50      | 5 × 7               | .18  |
| USA1H100MCA  | 10  | 50      | 6.3 × 7             | .20  |

\* Higher C/V than SA Series

# Surface Mount - Aluminum Electrolytic Capacitors

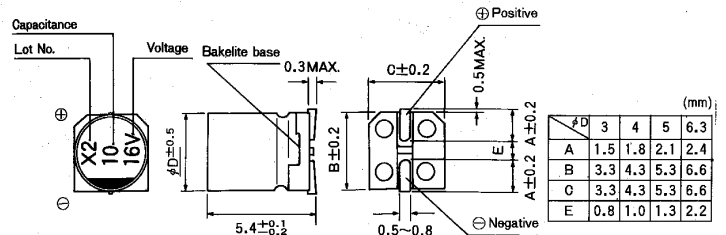
**WX**

5.5mmL, Chip Type



- Chip type with 5.5mm height.
- Designed for surface mounting on high density PC board.
- Applicable to automatic insertion machine using carrier tape.
- Load life of 2000 hours at 85°C.
- Specifications
- Operating temperature Range: -40 to 85°C.
- Capacitance Tolerance: ±20%

| Mfr's Type     | μF  | Voltage | ØD Code | Qty. Per Reel | Price Per Reel |
|----------------|-----|---------|---------|---------------|----------------|
| UWXOJ101MCR1GB | 100 | 6.3     | 6.3     | 1000          | 275.56         |
| UWX1C100MCR1GB | 10  | 16      | 4       | 2000          | 474.76         |
| UWX1C470MCR1GB | 47  | 16      | 6.3     | 1000          | 275.56         |
| UWX1E4R7MCR1GB | 4.7 | 25      | 4       | 2000          | 474.76         |
| UWX1E220MCR1GB | 22  | 25      | 6.3     | 1000          | 275.56         |
| UWX1E330MCR1GB | 33  | 25      | 6.3     | 1000          | 275.56         |
| UWX1H010MCR1GB | 1   | 50      | 4       | 2000          | 474.76         |
| UWX1H2R2MCR1GB | 2.2 | 50      | 4       | 2000          | 474.76         |
| UWX1H100MCR1GB | 10  | 50      | 6.3     | 1000          | 275.56         |



For SMD



Smaller



Anti-Solvent Feature