

# LBA

## +85°C Snap-Mount Aluminum Electrolytic Capacitors



*For all general purpose high CV applications*

### FEATURES

- High Ripple Currents Ratings
- Rugged Design
- Large Case Size Selection
- Capacitance Range: 47μF to 47,000μF
- Voltage range: 10 WVDC to 500 WVDC
- Solvent Tolerant End Seal Standard

### SPECIFICATIONS

| Capacitance Tolerance             |            | ±20% at 120Hz, 20°C                                                                     |    |    |     |    |                |     |      |                                                                                                      |      |                  |       |                |       |       |  |     |
|-----------------------------------|------------|-----------------------------------------------------------------------------------------|----|----|-----|----|----------------|-----|------|------------------------------------------------------------------------------------------------------|------|------------------|-------|----------------|-------|-------|--|-----|
| Operating Temperature Range       |            | -40°C to +85°C                                                                          |    |    |     |    |                |     |      |                                                                                                      |      |                  |       | -25°C to +85°C |       |       |  |     |
| Dissipation Factor<br>120Hz, 20°C | WVDC       | 10                                                                                      | 16 | 25 | 35  | 50 | 63             | 80  | 100  | 160                                                                                                  | 200  | 250              | 350   | 400            | 450   |       |  | 500 |
|                                   | tan δ      | .5                                                                                      | .4 | .3 | .25 | .2 | .15            | .15 | .15  | .1                                                                                                   | .1   | *.1              | .15   | .15            | .15   |       |  | .15 |
|                                   |            | *.15 for D=35 and 40mm                                                                  |    |    |     |    |                |     |      |                                                                                                      |      |                  |       |                |       |       |  |     |
| Impedance Ratio<br>120Hz          | WVDC       | 10                                                                                      | 16 | 25 | 35  | 50 | 63             | 80  | 100  | 160                                                                                                  | 200  | 250              | 350   | 400            | 450   |       |  | 500 |
|                                   | -25°C/20°C | 4                                                                                       | 4  | 3  | 3   | 3  | 3              | 3   | 6    | 4                                                                                                    | 4    | 4                | 8     | 8              | 8     | 8     |  |     |
|                                   | -40°C/20°C | 15                                                                                      | 15 | 10 | 8   | 6  | 6              | 6   | 6    | 12                                                                                                   | 12   | 12               | -     | -              | -     | -     |  |     |
| Leakage Current                   | WVDC       | ≤500 WVDC                                                                               |    |    |     |    |                |     |      |                                                                                                      |      |                  |       |                |       |       |  |     |
|                                   | Time       | 5 minutes                                                                               |    |    |     |    |                |     |      |                                                                                                      |      |                  |       |                |       |       |  |     |
|                                   |            | .02CV or 2000μA<br>whichever is smaller                                                 |    |    |     |    |                |     |      |                                                                                                      |      |                  |       |                |       |       |  |     |
| Load Life                         |            | 2,000 hours at 85°C with rated voltage and ripple current                               |    |    |     |    |                |     |      |                                                                                                      |      |                  |       |                |       |       |  |     |
|                                   |            | Capacitance change<br>Dissipation factor<br>Leakage current                             |    |    |     |    |                |     |      | ≤ 20% of initial measured value<br>≤200% of initial specified value<br>100%< Initial specified value |      |                  |       |                |       |       |  |     |
| Shelf life                        |            | 500 hours at +85°C with no voltage applied.<br>Units will meet load life specifications |    |    |     |    |                |     |      |                                                                                                      |      |                  |       |                |       |       |  |     |
| Ripple Current Multipliers        |            |                                                                                         |    |    |     |    | Frequency (Hz) |     |      |                                                                                                      |      | Temperature (°C) |       |                |       |       |  |     |
|                                   |            | WVDC                                                                                    |    |    |     |    | 60             | 120 | 300  | 1K                                                                                                   | 10K  | 100K             | +85°C | +70°C          | +60°C | +45°C |  |     |
|                                   |            | 6.3-50                                                                                  |    |    |     |    | .95            | 1.0 | 1.07 | 1.13                                                                                                 | 1.19 | 1.2              | 1.0   | 1.15           | 1.3   | 1.48  |  |     |
|                                   |            | 63-100                                                                                  |    |    |     |    | .92            | 1.0 | 1.17 | 1.32                                                                                                 | 1.45 | 1.5              | 1.0   | 1.15           | 1.3   | 1.48  |  |     |
|                                   |            | 160-250                                                                                 |    |    |     |    | .81            | 1.0 | 1.16 | 1.31                                                                                                 | 1.41 | 1.43             | 1.0   | 1.15           | 1.3   | 1.48  |  |     |
|                                   |            | 350-500                                                                                 |    |    |     |    | .77            | 1.0 | 1.03 | 1.05                                                                                                 | 1.08 | 1.08             | 1.0   | 1.15           | 1.3   | 1.48  |  |     |

### SPECIAL ORDER OPTIONS

(See Page 33 to 37)

- Special tolerances: ±10% (K), -10% + 30% (Q)
- Epoxy end seal



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## PHYSICAL DIMENSIONS

| WVDC<br>(SV)<br>μF | 10<br>(13) | 16<br>(20)              | 25<br>(32)              | 35<br>(44)                       | 50<br>(63)              | 63<br>(79)                       | 80<br>(100)             | 100<br>(125)            | 160<br>(200)            | 200<br>(250)                     | 250<br>(300)            | 350<br>(400)   | 400<br>(450)   | 450<br>(500) | 500<br>(550)                     |
|--------------------|------------|-------------------------|-------------------------|----------------------------------|-------------------------|----------------------------------|-------------------------|-------------------------|-------------------------|----------------------------------|-------------------------|----------------|----------------|--------------|----------------------------------|
| 47                 |            |                         |                         |                                  |                         |                                  |                         |                         |                         |                                  |                         |                |                | 22x25        |                                  |
| 68                 |            |                         |                         |                                  |                         |                                  |                         |                         |                         |                                  |                         |                |                | 25x25        |                                  |
| 100                |            |                         |                         |                                  |                         |                                  |                         |                         |                         |                                  |                         | 22x30<br>25x25 | 22x30          | 22x35        | 22x40<br>25x30<br>30x25          |
| 150                |            |                         |                         |                                  |                         |                                  |                         |                         |                         |                                  | 25x20                   | 25x30          | 22x40<br>25x30 | 25x40        | 22x50<br>25x40<br>30x35<br>35x30 |
| 220                |            |                         |                         |                                  |                         |                                  |                         |                         | 22x20                   | 22x25<br>25x20                   | 22x30<br>25x25<br>30x20 | 30x30          | 22x50<br>25x40 | 30x40        | 25x50<br>30x45<br>35x35          |
| 330                |            |                         |                         |                                  |                         |                                  |                         |                         | 22x25                   | 22x30<br>25x25                   | 22x40<br>25x30<br>30x25 | 30x40<br>35x30 | 30x45          | 35x40        | 35x45                            |
| 470                |            |                         |                         |                                  |                         |                                  |                         |                         | 25x25                   | 22x40<br>25x30<br>25x35<br>30x25 | 22x50<br>25x40          | 30x30<br>35x40 | 35x45<br>40x35 | 35x50        |                                  |
| 560                |            |                         |                         |                                  |                         |                                  |                         |                         |                         | 25x35                            | 30x35                   |                |                |              |                                  |
| 680                |            |                         |                         |                                  |                         |                                  |                         | 22x25                   | 30x25                   | 25x40<br>35x25                   | 30x35<br>30x40<br>35x30 |                |                |              |                                  |
| 820                |            |                         |                         |                                  |                         |                                  |                         |                         |                         | 30x40                            | 30x45<br>35x35          |                |                |              |                                  |
| 1000               |            |                         |                         |                                  |                         |                                  | 22x25                   | 22x35<br>25x25          | 30x30<br>30x35<br>35x25 | 30x45<br>35x30<br>35x35          | 30x45<br>30x50<br>35x40 |                |                |              |                                  |
| 1200               |            |                         |                         |                                  |                         |                                  |                         |                         | 30x35<br>35x30          | 30x45<br>30x50<br>35x35<br>35x40 | 35x45<br>35x50          |                |                |              |                                  |
| 1500               |            |                         |                         |                                  |                         | 22x25                            | 25x25                   | 25x35                   | 35x35                   | 35x40<br>35x45                   | 35x50                   |                |                |              |                                  |
| 1800               |            |                         |                         |                                  |                         |                                  |                         |                         | 30x50<br>35x40          | 35x45<br>35x50                   |                         |                |                |              |                                  |
| 2200               |            |                         |                         | 25x20                            | 22x25                   | 25x25                            | 22x40<br>25x35          | 25x45<br>30x35<br>35x30 | 35x50<br>40x40          | 35x50                            |                         |                |                |              |                                  |
| 3300               |            |                         |                         | 22x25                            | 22x30<br>25x25          | 25x35                            | 25x45<br>35x30<br>40x30 | 35x35                   |                         |                                  |                         |                |                |              |                                  |
| 4700               |            |                         | 22x25                   | 22x30<br>25x25                   | 22x40<br>25x35<br>30x25 | 25x35<br>25x45<br>30x30<br>35x25 | 22x35<br>35x30<br>40x35 | 35x45                   |                         |                                  |                         |                |                |              |                                  |
| 5600               |            |                         | 22x30                   |                                  |                         |                                  |                         |                         |                         |                                  |                         |                |                |              |                                  |
| 6800               |            |                         | 22x35                   | 22x35<br>25x25<br>25x30<br>30x25 | 25x45<br>35x30          | 35x35                            | 35x45                   |                         |                         |                                  |                         |                |                |              |                                  |
| 8200               |            | 22x25                   | 22x35                   | 25x35                            | 30x40                   |                                  |                         |                         |                         |                                  |                         |                |                |              |                                  |
| 10000              |            | 22x30<br>25x25<br>30x25 | 22x45<br>25x35<br>35x25 | 25x40<br>30x30                   | 35x35                   | 35x45                            |                         |                         |                         |                                  |                         |                |                |              |                                  |
| 15000              | 25x25      | 22x40<br>30x25          | 25x45<br>35x30          | 30x40<br>35x35                   |                         |                                  |                         |                         |                         |                                  |                         |                |                |              |                                  |
| 22000              | 30x25      | 22x50<br>30x30<br>35x25 | 35x35<br>40x30          | 35x45                            |                         |                                  |                         |                         |                         |                                  |                         |                |                |              |                                  |
| 33000              |            | 30x40<br>35x30          | 35x50                   |                                  |                         |                                  |                         |                         |                         |                                  |                         |                |                |              |                                  |
| 47000              |            | 30x50<br>35x40          |                         |                                  |                         |                                  |                         |                         |                         |                                  |                         |                |                |              |                                  |

Convert to inches, divide by 25.4.

DxL(mm)

## STANDARD PART LISTING

| Capacitance<br>( $\mu$ F) | WVDC | ic <sup>®</sup> PART<br>NUMBER | Maximum<br>ESR<br>m $\Omega$<br>120Hz, +20°C | Maximum RMS<br>Ripple Current<br>(A)<br>120Hz, +85°C | Dimensions<br>DxL<br>(mm) |
|---------------------------|------|--------------------------------|----------------------------------------------|------------------------------------------------------|---------------------------|
| 47                        | 450  | 476LBA450M2BC                  | 5291.055                                     | 0.46                                                 | 22x25                     |
| 68                        | 450  | 686LBA450M2CC                  | 3657.053                                     | 0.6                                                  | 25x25                     |
| 100                       | 350  | 107LBA350M2BD                  | 3315.728                                     | 0.65                                                 | 22x30                     |
| 100                       | 350  | 107LBA350M2CC                  | 3315.728                                     | 0.63                                                 | 25x25                     |
| 100                       | 400  | 107LBA400M2BD                  | 3315.728                                     | 0.68                                                 | 22x30                     |
| 100                       | 450  | 107LBA450M2BE                  | 3315.728                                     | 0.77                                                 | 22x35                     |
| 100                       | 500  | 107LBA500M2BF                  | 2486.796                                     | 0.85                                                 | 22x40                     |
| 100                       | 500  | 107LBA500M2CD                  | 2486.796                                     | 0.81                                                 | 25x30                     |
| 100                       | 500  | 107LBA500M2DC                  | 2486.796                                     | 0.84                                                 | 30x25                     |
| 150                       | 250  | 157LBA250M2CA                  | 1105.243                                     | 0.85                                                 | 25x20                     |
| 150                       | 350  | 157LBA350M2CD                  | 1657.864                                     | 0.97                                                 | 25x30                     |
| 150                       | 400  | 157LBA400M2BF                  | 1657.864                                     | 0.94                                                 | 22x40                     |
| 150                       | 400  | 157LBA400M2CD                  | 1657.864                                     | 0.89                                                 | 25x30                     |
| 150                       | 450  | 157LBA450M2CF                  | 1657.864                                     | 1.08                                                 | 25x40                     |
| 150                       | 500  | 157LBA500M2BH                  | 1657.864                                     | 1.15                                                 | 22x50                     |
| 150                       | 500  | 157LBA500M2CF                  | 1657.864                                     | 1.12                                                 | 25x40                     |
| 150                       | 500  | 157LBA500M2DE                  | 1657.864                                     | 1.18                                                 | 30x35                     |
| 150                       | 500  | 157LBA500M2ED                  | 1657.864                                     | 1.22                                                 | 35x30                     |
| 220                       | 160  | 227LBA160M2BA                  | 753.575                                      | 1                                                    | 22x20                     |
| 220                       | 200  | 227LBA200M2BC                  | 753.575                                      | 1.14                                                 | 22x25                     |
| 220                       | 200  | 227LBA200M2CA                  | 753.575                                      | 1.1                                                  | 25x20                     |
| 220                       | 250  | 227LBA250M2BD                  | 753.575                                      | 1.2                                                  | 22x30                     |
| 220                       | 250  | 227LBA250M2CC                  | 753.575                                      | 1.15                                                 | 25x25                     |
| 220                       | 250  | 227LBA250M2DA                  | 753.575                                      | 1.1                                                  | 30x20                     |
| 220                       | 350  | 227LBA350M2DD                  | 1130.362                                     | 1.29                                                 | 30x30                     |
| 220                       | 400  | 227LBA400M2BH                  | 1130.362                                     | 1.26                                                 | 22x50                     |
| 220                       | 400  | 227LBA400M2CF                  | 1130.362                                     | 1.22                                                 | 25x40                     |
| 220                       | 450  | 227LBA450M2DF                  | 1130.362                                     | 1.44                                                 | 30x40                     |
| 220                       | 500  | 227LBA500M2CH                  | 1130.362                                     | 1.5                                                  | 25x50                     |
| 220                       | 500  | 227LBA500M2DG                  | 1130.362                                     | 1.59                                                 | 30x45                     |
| 220                       | 500  | 227LBA500M2EE                  | 1130.362                                     | 1.57                                                 | 35x35                     |
| 330                       | 160  | 337LBA160M2BC                  | 502.383                                      | 1.2                                                  | 22x25                     |
| 330                       | 200  | 337LBA200M2BD                  | 502.383                                      | 1.48                                                 | 22x30                     |
| 330                       | 200  | 337LBA200M2CC                  | 502.383                                      | 1.48                                                 | 25x25                     |
| 330                       | 250  | 337LBA250M2BF                  | 502.383                                      | 1.72                                                 | 22x40                     |
| 330                       | 250  | 337LBA250M2CD                  | 502.383                                      | 1.67                                                 | 25x30                     |
| 330                       | 250  | 337LBA250M2DC                  | 502.383                                      | 1.61                                                 | 30x25                     |
| 330                       | 350  | 337LBA350M2DF                  | 753.575                                      | 1.72                                                 | 30x40                     |

| Capacitance<br>( $\mu$ F) | WVDC | ic <sup>®</sup> PART<br>NUMBER | Maximum<br>ESR<br>m $\Omega$<br>120Hz, +20°C | Maximum RMS<br>Ripple Current<br>(A)<br>120Hz, +85°C | Dimensions<br>DxL<br>(mm) |
|---------------------------|------|--------------------------------|----------------------------------------------|------------------------------------------------------|---------------------------|
| 330                       | 350  | 337LBA350M2ED                  | 753.575                                      | 1.88                                                 | 35x30                     |
| 330                       | 400  | 337LBA400M2DG                  | 753.575                                      | 1.74                                                 | 30x45                     |
| 330                       | 450  | 337LBA450M2EF                  | 753.575                                      | 1.92                                                 | 35x40                     |
| 330                       | 500  | 337LBA500M2EG                  | 753.575                                      | 2.13                                                 | 35x45                     |
| 470                       | 160  | 477LBA160M2CC                  | 352.737                                      | 1.52                                                 | 25x25                     |
| 470                       | 200  | 477LBA200M2BF                  | 352.737                                      | 2.02                                                 | 22x40                     |
| 470                       | 200  | 477LBA200M2CD                  | 352.737                                      | 1.91                                                 | 25x30                     |
| 470                       | 200  | 477LBA200M2CE                  | 352.737                                      | 1.8                                                  | 25x35                     |
| 470                       | 200  | 477LBA200M2DC                  | 352.737                                      | 1.97                                                 | 30x25                     |
| 470                       | 250  | 477LBA250M2BH                  | 352.737                                      | 2.08                                                 | 22x50                     |
| 470                       | 250  | 477LBA250M2CF                  | 352.737                                      | 2.03                                                 | 25x40                     |
| 470                       | 250  | 477LBA250M2DD                  | 352.737                                      | 1.97                                                 | 30x30                     |
| 470                       | 350  | 477LBA350M2EF                  | 529.106                                      | 2.3                                                  | 35x40                     |
| 470                       | 400  | 477LBA400M2EG                  | 529.106                                      | 2.23                                                 | 35x45                     |
| 470                       | 400  | 477LBA400M2FE                  | 529.106                                      | 2.16                                                 | 40x35                     |
| 470                       | 450  | 477LBA450M2EH                  | 529.106                                      | 2.5                                                  | 35x50                     |
| 560                       | 200  | 567LBA200M2CE                  | 296.047                                      | 2.22                                                 | 25x35                     |
| 560                       | 250  | 567LBA250M2DE                  | 296.047                                      | 2.3                                                  | 30x35                     |
| 680                       | 100  | 687LBA100M2BC                  | 365.705                                      | 1.85                                                 | 22x25                     |
| 680                       | 160  | 687LBA160M2DC                  | 243.804                                      | 2.1                                                  | 30x25                     |
| 680                       | 200  | 687LBA200M2CF                  | 243.804                                      | 2.43                                                 | 25x40                     |
| 680                       | 200  | 687LBA200M2EC                  | 365.705                                      | 2.3                                                  | 35x25                     |
| 680                       | 250  | 687LBA250M2DE                  | 243.804                                      | 2.4                                                  | 30x35                     |
| 680                       | 250  | 687LBA250M2DF                  | 243.804                                      | 2.55                                                 | 30x40                     |
| 680                       | 250  | 687LBA250M2ED                  | 365.705                                      | 2.48                                                 | 35x30                     |
| 820                       | 200  | 827LBA200M2DF                  | 202.179                                      | 2.85                                                 | 30x40                     |
| 820                       | 250  | 827LBA250M2DG                  | 202.179                                      | 2.9                                                  | 30x45                     |
| 820                       | 250  | 827LBA250M2EE                  | 303.268                                      | 2.83                                                 | 35x35                     |
| 1000                      | 80   | 108LBA080M2BC                  | 248.680                                      | 1.65                                                 | 22x25                     |
| 1000                      | 100  | 108LBA100M2BE                  | 248.680                                      | 2.08                                                 | 22x35                     |
| 1000                      | 100  | 108LBA100M2CC                  | 248.680                                      | 2.03                                                 | 25x25                     |
| 1000                      | 160  | 108LBA160M2DD                  | 165.786                                      | 2.8                                                  | 30x30                     |
| 1000                      | 160  | 108LBA160M2DE                  | 165.786                                      | 2.77                                                 | 30x35                     |
| 1000                      | 160  | 108LBA160M2EC                  | 248.680                                      | 2.8                                                  | 35x25                     |
| 1000                      | 200  | 108LBA200M2DG                  | 165.786                                      | 3.42                                                 | 30x45                     |
| 1000                      | 200  | 108LBA200M2ED                  | 248.680                                      | 3.42                                                 | 35x30                     |
| 1000                      | 200  | 108LBA200M2EE                  | 248.680                                      | 3.35                                                 | 35x35                     |
| 1000                      | 250  | 108LBA250M2DG                  | 165.786                                      | 3                                                    | 30x45                     |

## STANDARD PART LISTING

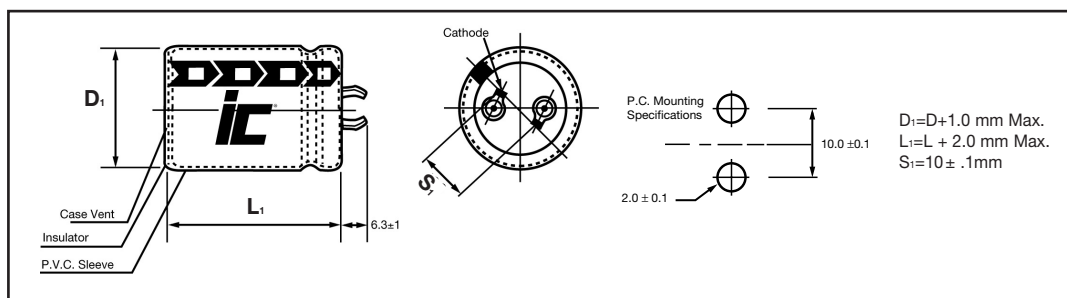
| Capacitance<br>( $\mu$ F) | WVDC | IC <sup>®</sup> PART<br>NUMBER | Maximum<br>ESR<br>m $\Omega$<br>120Hz, +20°C | Maximum RMS<br>Ripple Current<br>(A)<br>120Hz, +85°C | Dimensions<br>DxL<br>(mm) |
|---------------------------|------|--------------------------------|----------------------------------------------|------------------------------------------------------|---------------------------|
| 1000                      | 250  | 108LBA250M2DH                  | 165.786                                      | 3.65                                                 | 30x50                     |
| 1000                      | 250  | 108LBA250M2EF                  | 248.680                                      | 3.58                                                 | 35x40                     |
| 1200                      | 160  | 128LBA160M2DE                  | 138.155                                      | 3.2                                                  | 30x35                     |
| 1200                      | 160  | 128LBA160M2ED                  | 207.233                                      | 3.2                                                  | 35x30                     |
| 1200                      | 200  | 128LBA200M2DG                  | 138.155                                      | 3.4                                                  | 30x45                     |
| 1200                      | 200  | 128LBA200M2DH                  | 138.155                                      | 3.4                                                  | 30x50                     |
| 1200                      | 200  | 128LBA200M2EE                  | 207.233                                      | 3.54                                                 | 35x35                     |
| 1200                      | 200  | 128LBA200M2EF                  | 207.233                                      | 3.47                                                 | 35x40                     |
| 1200                      | 250  | 128LBA250M2EG                  | 207.233                                      | 3.5                                                  | 35x45                     |
| 1500                      | 63   | 158LBA063M2BC                  | 165.786                                      | 2                                                    | 22x25                     |
| 1500                      | 80   | 158LBA080M2CC                  | 165.786                                      | 2.15                                                 | 25x25                     |
| 1500                      | 100  | 158LBA100M2CE                  | 165.786                                      | 2.76                                                 | 25x35                     |
| 1500                      | 160  | 158LBA160M2EE                  | 165.786                                      | 3.48                                                 | 35x35                     |
| 1500                      | 200  | 158LBA200M2EF                  | 165.786                                      | 3.8                                                  | 35x40                     |
| 1500                      | 200  | 158LBA200M2EG                  | 165.786                                      | 4.1                                                  | 35x45                     |
| 1500                      | 250  | 158LBA250M2EH                  | 165.786                                      | 4                                                    | 35x50                     |
| 1800                      | 160  | 188LBA160M2DH                  | 92.104                                       | 4.1                                                  | 30x50                     |
| 1800                      | 160  | 188LBA160M2EF                  | 138.155                                      | 4.1                                                  | 35x40                     |
| 1800                      | 200  | 188LBA200M2EG                  | 138.155                                      | 4.2                                                  | 35x45                     |
| 1800                      | 200  | 188LBA200M2EH                  | 138.155                                      | 4.38                                                 | 35x50                     |
| 2200                      | 35   | 228LBA035M3CA                  | 188.394                                      | 1.7                                                  | 25x20                     |
| 2200                      | 50   | 228LBA050M2BC                  | 150.715                                      | 2                                                    | 22x25                     |
| 2200                      | 63   | 228LBA063M2CC                  | 113.036                                      | 2.3                                                  | 25x25                     |
| 2200                      | 80   | 228LBA080M2BF                  | 113.036                                      | 2.71                                                 | 22x40                     |
| 2200                      | 80   | 228LBA080M2CE                  | 113.036                                      | 2.66                                                 | 25x35                     |
| 2200                      | 100  | 228LBA100M2CG                  | 113.036                                      | 3.41                                                 | 25x45                     |
| 2200                      | 100  | 228LBA100M2DE                  | 113.036                                      | 3.35                                                 | 30x35                     |
| 2200                      | 100  | 228LBA100M2ED                  | 113.036                                      | 3.28                                                 | 35x30                     |
| 2200                      | 160  | 228LBA160M2EH                  | 113.036                                      | 4.97                                                 | 35x50                     |
| 2200                      | 160  | 228LBA160M4FF                  | 113.036                                      | 4.57                                                 | 40x40                     |
| 2200                      | 200  | 228LBA200M2EH                  | 113.036                                      | 4.7                                                  | 35x50                     |
| 3300                      | 35   | 338LBA035M2BC                  | 125.596                                      | 2.2                                                  | 22x25                     |
| 3300                      | 50   | 338LBA050M2BD                  | 100.477                                      | 2.4                                                  | 22x30                     |
| 3300                      | 50   | 338LBA050M2CC                  | 100.477                                      | 2.35                                                 | 25x25                     |
| 3300                      | 63   | 338LBA063M2CE                  | 75.357                                       | 2.81                                                 | 25x35                     |
| 3300                      | 80   | 338LBA080M2CG                  | 75.357                                       | 3.41                                                 | 25x45                     |
| 3300                      | 80   | 338LBA080M2ED                  | 75.357                                       | 3.28                                                 | 35x30                     |
| 3300                      | 100  | 338LBA100M2EE                  | 75.357                                       | 3.58                                                 | 35x35                     |

| Capacitance<br>( $\mu$ F) | WVDC | IC <sup>®</sup> PART<br>NUMBER | Maximum<br>ESR<br>m $\Omega$<br>120Hz, +20°C | Maximum RMS<br>Ripple Current<br>(A)<br>120Hz, +85°C | Dimensions<br>DxL<br>(mm) |
|---------------------------|------|--------------------------------|----------------------------------------------|------------------------------------------------------|---------------------------|
| 3300                      | 100  | 338LBA100M2FD                  | 75.357                                       | 3.5                                                  | 40x30                     |
| 4700                      | 25   | 478LBA025M2BC                  | 105.821                                      | 2.2                                                  | 22x25                     |
| 4700                      | 35   | 478LBA035M2BD                  | 88.184                                       | 2.4                                                  | 22x30                     |
| 4700                      | 35   | 478LBA035M2CC                  | 88.184                                       | 2.35                                                 | 25x25                     |
| 4700                      | 50   | 478LBA050M2BF                  | 70.547                                       | 2.91                                                 | 22x40                     |
| 4700                      | 50   | 478LBA050M2CE                  | 70.547                                       | 2.86                                                 | 25x35                     |
| 4700                      | 50   | 478LBA050M2DC                  | 70.547                                       | 2.8                                                  | 30x25                     |
| 4700                      | 63   | 478LBA063M2CE                  | 52.911                                       | 3.59                                                 | 25x35                     |
| 4700                      | 63   | 478LBA063M2CG                  | 52.911                                       | 3.25                                                 | 25x45                     |
| 4700                      | 63   | 478LBA063M2DD                  | 52.911                                       | 3.2                                                  | 30x30                     |
| 4700                      | 63   | 478LBA063M2EC                  | 52.911                                       | 3.13                                                 | 35x25                     |
| 4700                      | 80   | 478LBA080M2BE                  | 52.911                                       | 3.5                                                  | 22x35                     |
| 4700                      | 80   | 478LBA080M2ED                  | 52.911                                       | 3.3                                                  | 35x30                     |
| 4700                      | 80   | 478LBA080M2EE                  | 52.911                                       | 3.73                                                 | 35x35                     |
| 4700                      | 100  | 478LBA100M2EG                  | 52.911                                       | 4.3                                                  | 35x45                     |
| 4700                      | 100  | 478LBA100M2FE                  | 52.911                                       | 4.22                                                 | 40x35                     |
| 5600                      | 25   | 568LBA025M2BD                  | 88.814                                       | 2.4                                                  | 22x30                     |
| 6800                      | 25   | 688LBA025M2BE                  | 73.141                                       | 2.6                                                  | 22x35                     |
| 6800                      | 25   | 688LBA025M2CC                  | 73.141                                       | 2.55                                                 | 25x25                     |
| 6800                      | 35   | 688LBA035M2BE                  | 60.951                                       | 2.9                                                  | 22x35                     |
| 6800                      | 35   | 688LBA035M2BF                  | 60.951                                       | 3.06                                                 | 22x40                     |
| 6800                      | 35   | 688LBA035M2CD                  | 60.951                                       | 3.01                                                 | 25x30                     |
| 6800                      | 35   | 688LBA035M2DC                  | 60.951                                       | 2.95                                                 | 30x25                     |
| 6800                      | 50   | 688LBA050M2CG                  | 60.951                                       | 3.86                                                 | 25x45                     |
| 6800                      | 50   | 688LBA050M2ED                  | 60.951                                       | 3.73                                                 | 35x30                     |
| 6800                      | 63   | 688LBA063M2EE                  | 36.571                                       | 4.15                                                 | 35x35                     |
| 6800                      | 80   | 688LBA080M2EG                  | 36.571                                       | 4.8                                                  | 35x45                     |
| 8200                      | 16   | 828LBA016M2BC                  | 80.871                                       | 2.37                                                 | 22x25                     |
| 8200                      | 25   | 828LBA025M2BE                  | 60.654                                       | 3.31                                                 | 22x35                     |
| 8200                      | 35   | 828LBA035M2CE                  | 50.545                                       | 3.45                                                 | 25x35                     |
| 8200                      | 50   | 828LBA050M2DF                  | 40.436                                       | 4.35                                                 | 30x40                     |
| 10000                     | 16   | 109LBA016M2BD                  | 66.315                                       | 2.84                                                 | 22x30                     |
| 10000                     | 16   | 109LBA016M2CC                  | 66.315                                       | 2.76                                                 | 25x25                     |
| 10000                     | 25   | 109LBA025M2BG                  | 49.736                                       | 3.4                                                  | 22x45                     |
| 10000                     | 25   | 109LBA025M2CE                  | 49.736                                       | 3.32                                                 | 25x35                     |
| 10000                     | 25   | 109LBA025M2DC                  | 49.736                                       | 3.31                                                 | 30x25                     |
| 10000                     | 35   | 109LBA035M2CF                  | 41.447                                       | 4.06                                                 | 25x40                     |
| 10000                     | 35   | 109LBA035M2DD                  | 41.447                                       | 4                                                    | 30x30                     |

## STANDARD PART LISTING

| Capacitance<br>( $\mu$ F) | WVDC | ic PART<br>NUMBER | Maximum<br>ESR<br>$m\Omega$<br>120Hz, +20°C | Maximum RMS<br>Ripple Current<br>(A)<br>120Hz, +85°C | Dimensions<br>DxL<br>(mm) |
|---------------------------|------|-------------------|---------------------------------------------|------------------------------------------------------|---------------------------|
| 10000                     | 35   | 109LBA035M2EC     | 41.447                                      | 3.93                                                 | 35x25                     |
| 10000                     | 50   | 109LBA050M2EE     | 33.157                                      | 4.7                                                  | 35x35                     |
| 10000                     | 63   | 109LBA063M2EG     | 24.868                                      | 5.2                                                  | 35x45                     |
| 15000                     | 10   | 159LBA010M2CC     | 55.262                                      | 2.76                                                 | 25x25                     |
| 15000                     | 16   | 159LBA016M2BF     | 44.210                                      | 3.94                                                 | 22x40                     |
| 15000                     | 16   | 159LBA016M2DC     | 44.210                                      | 3.51                                                 | 30x25                     |
| 15000                     | 25   | 159LBA025M2CG     | 33.157                                      | 4.5                                                  | 25x45                     |
| 15000                     | 25   | 159LBA025M2ED     | 33.157                                      | 4.39                                                 | 35x30                     |
| 15000                     | 35   | 159LBA035M2DF     | 27.631                                      | 5.07                                                 | 30x40                     |
| 15000                     | 35   | 159LBA035M2EE     | 27.631                                      | 5                                                    | 35x35                     |
| 15000                     | 50   | 159LBA050M2EG     | 22.105                                      | 5.9                                                  | 35x45                     |
| 22000                     | 10   | 229LBA010M2DC     | 37.679                                      | 3.49                                                 | 30x25                     |

| Capacitance<br>( $\mu$ F) | WVDC | ic PART<br>NUMBER | Maximum<br>ESR<br>$m\Omega$<br>120Hz, +20°C | Maximum RMS<br>Ripple Current<br>(A)<br>120Hz, +85°C | Dimensions<br>DxL<br>(mm) |
|---------------------------|------|-------------------|---------------------------------------------|------------------------------------------------------|---------------------------|
| 22000                     | 16   | 229LBA016M2BH     | 30.143                                      | 5.23                                                 | 22x50                     |
| 22000                     | 16   | 229LBA016M2DD     | 30.143                                      | 4.45                                                 | 30x30                     |
| 22000                     | 16   | 229LBA016M2EC     | 30.143                                      | 4.13                                                 | 35x25                     |
| 22000                     | 25   | 229LBA025M2EE     | 22.607                                      | 5.73                                                 | 35x35                     |
| 22000                     | 25   | 229LBA025M2FD     | 22.607                                      | 5.65                                                 | 40x30                     |
| 22000                     | 35   | 229LBA035M2EG     | 18.839                                      | 6.25                                                 | 35x45                     |
| 33000                     | 16   | 339LBA016M2DF     | 20.095                                      | 5.8                                                  | 30x40                     |
| 33000                     | 16   | 339LBA016M2ED     | 20.095                                      | 5.15                                                 | 35x30                     |
| 33000                     | 25   | 339LBA025M2EH     | 15.071                                      | 7.2                                                  | 35x50                     |
| 47000                     | 16   | 479LBA016M2DH     | 14.109                                      | 6.78                                                 | 30x50                     |
| 47000                     | 16   | 479LBA016M2EF     | 14.109                                      | 6.71                                                 | 35x40                     |



| CASE DIMENSIONS CODE LAST TWO<br>LETTERS OF PART NUMBERS<br>(DxL)mm | Letter Group |    |    |    |    |    |    |    |
|---------------------------------------------------------------------|--------------|----|----|----|----|----|----|----|
|                                                                     | A            | B  | C  | D  | E  | F  | G  | H  |
|                                                                     | 20           | 22 | 25 | 30 | 35 | 40 | 45 | 50 |