



### FEATURES

Multiple Case Sizes - High Voltage – High Current

### APPLICATIONS

Filtering – Switching Power Supplies

| Operating Temperature Range                 |             | -40°C to +85°C                                                                                        |              |                                  |      |      |     |                  |     |     |     |     |     |     |
|---------------------------------------------|-------------|-------------------------------------------------------------------------------------------------------|--------------|----------------------------------|------|------|-----|------------------|-----|-----|-----|-----|-----|-----|
| Capacitance Tolerance                       |             | +20% at 120 Hz, 20°C                                                                                  |              |                                  |      |      |     |                  |     |     |     |     |     |     |
| Surge Voltage                               | WVDC        | 16                                                                                                    | 25           | 35                               | 50   | 63   | 80  | 100              | 160 | 200 | 250 | 350 | 400 | 450 |
|                                             | SVDC        | 20                                                                                                    | 32           | 44                               | 63   | 79   | 100 | 120              | 200 | 250 | 300 | 400 | 450 | 500 |
| Dissipation Factor<br>tan δ<br>(120 Hz)     | WVDC        | 16                                                                                                    | 25           | 35                               | 50   | 63   | 80  | 100              | 160 | 200 | 250 | 350 | 400 | 450 |
|                                             | D<30        | .4                                                                                                    | .3           | .25                              | .2   | .15  | .15 | .15              | .1  | .1  | .1  | .15 | .15 | .15 |
|                                             | D=35        | .4                                                                                                    | .3           | .25                              | .2   | .15  | .15 | .15              | .15 | .15 | .15 | .15 | .15 | .15 |
|                                             | D>40        | .5                                                                                                    | .45          | .4                               | .35  | .3   | .25 | .2               | --  | --  | --  | --  | --  | --  |
|                                             |             | For capacitances above 33000uF, add to DF value $\frac{(\text{Capacitance}-33000)}{10000} \times 0.1$ |              |                                  |      |      |     |                  |     |     |     |     |     |     |
| Leakage Current<br>@20C, Rated WVDC applied |             | Time                                                                                                  | 5 Minutes    |                                  |      |      |     |                  |     |     |     |     |     |     |
|                                             |             |                                                                                                       | $3\sqrt{CV}$ |                                  |      |      |     |                  |     |     |     |     |     |     |
| Impedance Ratio<br>(120 Hz)                 | WVDC        | 16                                                                                                    | 25           | 35                               | 50   | 63   | 80  | 100              | 160 | 200 | 250 | 350 | 400 | 450 |
|                                             | -25°C/+20°C | 4                                                                                                     | 3            | 3                                | 2    | 2    | 2   | 2                | 6   | 6   | 6   | 8   | 8   | 8   |
|                                             | -40°C/+20°C | 15                                                                                                    | 10           | 8                                | 6    | 6    | 5   | 5                | 9   | 9   | 9   | 12  | 12  | 12  |
| Load Life                                   |             | 3000 hours with rated voltage and rated ripple current applied at 85°C                                |              |                                  |      |      |     |                  |     |     |     |     |     |     |
|                                             |             | Capacitance Change                                                                                    |              | ≤20% of initial measured value   |      |      |     |                  |     |     |     |     |     |     |
|                                             |             | Dissipation Factor                                                                                    |              | ≤200% of maximum specified value |      |      |     |                  |     |     |     |     |     |     |
|                                             |             | Leakage Current                                                                                       |              | ≤100% of maximum specified value |      |      |     |                  |     |     |     |     |     |     |
| Shelf Life                                  |             | 1000 hours at 85°C with no voltage applied                                                            |              |                                  |      |      |     |                  |     |     |     |     |     |     |
|                                             |             | Capacitance Change                                                                                    |              | ≤20% of initial measured value   |      |      |     |                  |     |     |     |     |     |     |
|                                             |             | Dissipation Factor                                                                                    |              | ≤200% of maximum specified value |      |      |     |                  |     |     |     |     |     |     |
|                                             |             | Leakage Current                                                                                       |              | ≤100% of maximum specified value |      |      |     |                  |     |     |     |     |     |     |
| Ripple Current Multipliers                  |             | Frequency (Hz)                                                                                        |              |                                  |      |      |     | Temperature (°C) |     |     |     |     |     |     |
|                                             | WVDC        | 60                                                                                                    | 120          | 400                              | 1k   | 10k+ | 40  | 60               | 70  | 85  |     |     |     |     |
|                                             | ≤100        | 0.8                                                                                                   | 1.0          | 1.1                              | 1.15 | 1.25 | 1.8 | 1.4              | 1.2 | 1.2 |     |     |     |     |
|                                             | >160        | 0.8                                                                                                   | 1.0          | 1.1                              | 1.15 | 1.47 | 1.8 | 1.4              | 1.2 | 1.2 |     |     |     |     |



### Lead Style Options

|                                                             |                                                                                                                                                                                                                      |    |    |    |    |    |    |   |    |    |    |    |    |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|----|----|---|----|----|----|----|----|
| <p><b>Code 2 (standard)</b></p> <p>Diameter 20 to 40 mm</p> | <p><b>Code W</b></p> <p>Diameter 20 to 40 mm</p>                                                                                                                                                                     |    |    |    |    |    |    |   |    |    |    |    |    |
| <p><b>Code P</b></p> <p>Diameter 22 to 35 mm</p>            | <p><b>Code D</b></p> <p>Diameter 30 to 40 mm</p>                                                                                                                                                                     |    |    |    |    |    |    |   |    |    |    |    |    |
| <p><b>Code 9</b></p> <p>Diameter 25 to 35 mm</p>            | <p><b>Code T</b></p> <p>Diameter 25 to 35 mm</p>                                                                                                                                                                     |    |    |    |    |    |    |   |    |    |    |    |    |
| <p><b>Code 4</b></p> <p>Diameter 35 to 45 mm</p>            | <p><b>Code 4S (straight leads)</b></p> <p>Diameter 35 to 45 mm</p>                                                                                                                                                   |    |    |    |    |    |    |   |    |    |    |    |    |
| <p><b>Code 5</b></p> <p>Diameter 40 to 50 mm</p>            | <p><b>Code G</b></p> <table><tr><td>D</td><td>35</td><td>40</td><td>50</td><td>63</td><td>76</td></tr><tr><td>P</td><td>14</td><td>14</td><td>18</td><td>25</td><td>25</td></tr></table> <p>Diameter 35 to 76 mm</p> | D  | 35 | 40 | 50 | 63 | 76 | P | 14 | 14 | 18 | 25 | 25 |
| D                                                           | 35                                                                                                                                                                                                                   | 40 | 50 | 63 | 76 |    |    |   |    |    |    |    |    |
| P                                                           | 14                                                                                                                                                                                                                   | 14 | 18 | 25 | 25 |    |    |   |    |    |    |    |    |

# LBB

+85°C, Extended Life, 3000 hours

| Capacitance (µF) | WVDC | IC PART NUMBER | Maximum ESR (mΩ)<br>120 Hz, +20°C | Maximum RMS Ripple Current (A)<br>120 Hz, +85°C | Dims DxL (mm) |
|------------------|------|----------------|-----------------------------------|-------------------------------------------------|---------------|
| 82               | 400  | 826LBB400M2BC  | 3032.68                           | 0.76                                            | 22x25         |
| 82               | 450  | 826LBB450M2BD  | 3032.68                           | 0.83                                            | 22x30         |
| 100              | 350  | 107LBB350M2BC  | 2486.8                            | 0.86                                            | 22x25         |
| 100              | 400  | 107LBB400M2BD  | 2486.8                            | 0.91                                            | 22x30         |
| 100              | 400  | 107LBB400M2CC  | 2486.8                            | 0.91                                            | 25x25         |
| 100              | 450  | 107LBB450M2BE  | 2486.8                            | 0.97                                            | 22x35         |
| 100              | 450  | 107LBB450M2CC  | 2486.8                            | 0.9                                             | 25x25         |
| 100              | 450  | 107LBB450M2DC  | 2486.8                            | 1.02                                            | 30x25         |
| 100              | 450  | 107LBB450M2CD  | 2486.8                            | 0.98                                            | 25x30         |
| 120              | 350  | 127LBB350M2CC  | 2072.33                           | 0.86                                            | 25x25         |
| 120              | 350  | 127LBB350M2BD  | 2072.33                           | 0.86                                            | 22x30         |
| 120              | 400  | 127LBB400M2CC  | 2072.33                           | 1                                               | 25x25         |
| 120              | 400  | 127LBB400M2BD  | 2072.33                           | 1                                               | 22x30         |
| 120              | 450  | 127LBB450M2DC  | 2072.33                           | 1.12                                            | 30x25         |
| 120              | 450  | 127LBB450M2BF  | 2072.33                           | 1.13                                            | 22x40         |
| 120              | 450  | 127LBB450M2CD  | 2072.33                           | 1.08                                            | 25x30         |
| 150              | 350  | 157LBB350M2CC  | 1657.86                           | 1.1                                             | 25x25         |
| 150              | 350  | 157LBB350M2BD  | 1657.86                           | 0.96                                            | 22x30         |
| 150              | 400  | 157LBB400M2DC  | 1657.86                           | 1.25                                            | 30x25         |
| 150              | 400  | 157LBB400M2CD  | 1657.86                           | 1.2                                             | 25x30         |
| 150              | 400  | 157LBB400M2BE  | 1657.86                           | 1.19                                            | 22x35         |
| 150              | 450  | 157LBB450M2DD  | 1657.86                           | 1.34                                            | 30x30         |
| 150              | 450  | 157LBB450M2CE  | 1657.86                           | 1.28                                            | 25x35         |
| 150              | 450  | 157LBB450M2BG  | 1657.86                           | 1.33                                            | 22x45         |
| 180              | 350  | 187LBB350M2BE  | 1381.55                           | 1.13                                            | 22x35         |
| 180              | 350  | 187LBB350M2CD  | 1381.55                           | 1.14                                            | 25x30         |
| 180              | 350  | 187LBB350M2DC  | 1381.55                           | 1.18                                            | 30x25         |
| 180              | 400  | 187LBB400M2BF  | 1381.55                           | 1.38                                            | 22x40         |
| 180              | 400  | 187LBB400M2CE  | 1381.55                           | 1.4                                             | 25x35         |
| 180              | 400  | 187LBB400M2DC  | 1381.55                           | 1.37                                            | 30x25         |
| 180              | 450  | 187LBB450M2BH  | 1381.55                           | 1.53                                            | 22x50         |
| 180              | 450  | 187LBB450M2DD  | 1381.55                           | 1.47                                            | 30x30         |
| 180              | 450  | 187LBB450M2EC  | 1381.55                           | 1.5                                             | 35x25         |
| 180              | 450  | 187LBB450M2CF  | 1381.55                           | 1.49                                            | 25x40         |
| 220              | 200  | 227LBB200M2BC  | 753.57                            | 1.25                                            | 22x25         |
| 220              | 250  | 227LBB250M2BC  | 753.57                            | 1.31                                            | 22x25         |
| 220              | 350  | 227LBB350M2BF  | 1130.36                           | 1.32                                            | 22x40         |
| 220              | 350  | 227LBB350M2CE  | 1130.36                           | 1.44                                            | 25x35         |
| 220              | 350  | 227LBB350M2DC  | 1130.36                           | 1.3                                             | 30x25         |
| 220              | 400  | 227LBB400M2BH  | 1130.36                           | 1.69                                            | 22x50         |
| 220              | 400  | 227LBB400M2EC  | 1130.36                           | 1.66                                            | 35x25         |
| 220              | 400  | 227LBB400M2CF  | 1130.36                           | 1.64                                            | 25x40         |
| 220              | 400  | 227LBB400M2DD  | 1130.36                           | 1.62                                            | 30x30         |
| 220              | 450  | 227LBB450M2CG  | 1130.36                           | 1.73                                            | 25x45         |
| 220              | 450  | 227LBB450M2DE  | 1130.36                           | 1.72                                            | 30x35         |
| 220              | 450  | 227LBB450M2ED  | 1130.36                           | 1.78                                            | 35x30         |
| 270              | 200  | 277LBB200M2BC  | 614.02                            | 1.67                                            | 22x25         |
| 270              | 250  | 277LBB250M2BD  | 614.02                            | 1.57                                            | 22x30         |
| 270              | 250  | 277LBB250M2CC  | 614.02                            | 1.57                                            | 25x25         |
| 270              | 350  | 277LBB350M2BH  | 921.04                            | 1.61                                            | 22x50         |
| 270              | 350  | 277LBB350M2CF  | 921.04                            | 1.57                                            | 25x40         |
| 270              | 350  | 277LBB350M2DD  | 921.04                            | 1.55                                            | 30x30         |
| 270              | 350  | 277LBB350M2EC  | 921.04                            | 1.59                                            | 35x25         |
| 270              | 400  | 277LBB400M2CG  | 921.04                            | 1.92                                            | 25x45         |
| 270              | 400  | 277LBB400M2DE  | 921.04                            | 1.91                                            | 30x35         |
| 270              | 400  | 277LBB400M2ED  | 921.04                            | 1.97                                            | 35x30         |
| 270              | 450  | 277LBB450M2EE  | 921.04                            | 2.1                                             | 35x35         |
| 270              | 450  | 277LBB450M2DF  | 921.04                            | 2.02                                            | 30x40         |

| Capacitance (µF) | WVDC | IC PART NUMBER | Maximum ESR (mΩ)<br>120 Hz, +20°C | Maximum RMS Ripple Current (A)<br>120 Hz, +85°C | Dims DxL (mm) |
|------------------|------|----------------|-----------------------------------|-------------------------------------------------|---------------|
| 330              | 160  | 337LBB160M2BC  | 502.38                            | 1.4                                             | 22x25         |
| 330              | 200  | 337LBB200M2BD  | 502.38                            | 1.66                                            | 22x30         |
| 330              | 200  | 337LBB200M2CC  | 502.38                            | 1.66                                            | 25x25         |
| 330              | 250  | 337LBB250M2BE  | 502.38                            | 1.85                                            | 22x35         |
| 330              | 250  | 337LBB250M2CD  | 502.38                            | 1.87                                            | 25x30         |
| 330              | 350  | 337LBB350M2CG  | 753.57                            | 1.82                                            | 25x45         |
| 330              | 350  | 337LBB350M2DE  | 753.57                            | 1.83                                            | 30x35         |
| 330              | 400  | 337LBB400M2CH  | 753.57                            | 2.22                                            | 25x50         |
| 330              | 400  | 337LBB400M2ED  | 753.57                            | 2.18                                            | 35x30         |
| 330              | 400  | 337LBB400M2DF  | 753.57                            | 2.23                                            | 30x40         |
| 330              | 450  | 337LBB450M2DG  | 753.57                            | 2.35                                            | 30x45         |
| 330              | 450  | 337LBB450M2EE  | 753.57                            | 2.32                                            | 35x35         |
| 390              | 160  | 397LBB160M2BC  | 425.09                            | 1.44                                            | 22x25         |
| 390              | 200  | 397LBB200M2BD  | 425.09                            | 1.8                                             | 22x30         |
| 390              | 200  | 397LBB200M2CC  | 425.09                            | 1.8                                             | 25x25         |
| 390              | 250  | 397LBB250M2BE  | 425.09                            | 2.01                                            | 22x35         |
| 390              | 250  | 397LBB250M2CD  | 425.09                            | 2.03                                            | 25x30         |
| 390              | 250  | 397LBB250M2DC  | 425.09                            | 2.1                                             | 30x25         |
| 390              | 350  | 397LBB350M2DF  | 637.64                            | 2.1                                             | 30x40         |
| 390              | 350  | 397LBB350M2ED  | 637.64                            | 2.04                                            | 35x30         |
| 390              | 350  | 397LBB350M2CH  | 637.64                            | 2.08                                            | 25x50         |
| 390              | 400  | 397LBB400M2EE  | 637.64                            | 2.52                                            | 35x35         |
| 390              | 400  | 397LBB400M2DG  | 637.64                            | 2.55                                            | 30x45         |
| 390              | 450  | 397LBB450M2EF  | 637.64                            | 2.66                                            | 35x40         |
| 470              | 160  | 477LBB160M2BD  | 352.74                            | 1.73                                            | 22x30         |
| 470              | 160  | 477LBB160M2CC  | 352.74                            | 1.74                                            | 25x25         |
| 470              | 200  | 477LBB200M2CD  | 352.74                            | 2.13                                            | 25x30         |
| 470              | 200  | 477LBB200M2DC  | 352.74                            | 2.21                                            | 30x25         |
| 470              | 200  | 477LBB200M2BE  | 352.74                            | 1.78                                            | 22x35         |
| 470              | 250  | 477LBB250M2DC  | 352.74                            | 2.31                                            | 30x25         |
| 470              | 250  | 477LBB250M2BF  | 352.74                            | 2.34                                            | 22x40         |
| 470              | 250  | 477LBB250M2EC  | 529.11                            | 2.54                                            | 35x25         |
| 470              | 250  | 477LBB250M2CE  | 352.74                            | 2.38                                            | 25x35         |
| 470              | 350  | 477LBB350M2EE  | 529.11                            | 2.38                                            | 35x35         |
| 470              | 350  | 477LBB350M2DF  | 529.11                            | 2.3                                             | 30x40         |
| 470              | 400  | 477LBB400M2EF  | 529.11                            | 2.92                                            | 35x40         |
| 470              | 450  | 477LBB450M2EG  | 529.11                            | 3.07                                            | 35x45         |
| 560              | 160  | 567LBB160M2BE  | 296.05                            | 1.99                                            | 22x35         |
| 560              | 160  | 567LBB160M2CC  | 296.05                            | 1.95                                            | 25x25         |
| 560              | 200  | 567LBB200M2BF  | 296.05                            | 2.44                                            | 22x40         |
| 560              | 200  | 567LBB200M2DC  | 296.05                            | 2.41                                            | 30x25         |
| 560              | 200  | 567LBB200M2CE  | 296.05                            | 2.48                                            | 25x35         |
| 560              | 250  | 567LBB250M2DD  | 296.05                            | 2.71                                            | 30x30         |
| 560              | 250  | 567LBB250M2CF  | 296.05                            | 2.74                                            | 25x40         |
| 560              | 250  | 567LBB250M2EC  | 444.07                            | 2.78                                            | 35x25         |
| 560              | 250  | 567LBB250M2BH  | 296.05                            | 2.82                                            | 22x50         |
| 560              | 350  | 567LBB350M2EF  | 444.07                            | 2.75                                            | 35x40         |
| 560              | 350  | 567LBB350M2DH  | 444.07                            | 2.76                                            | 30x50         |
| 560              | 400  | 567LBB400M2EG  | 444.07                            | 3.34                                            | 35x45         |
| 680              | 160  | 687LBB160M2DC  | 243.8                             | 2.29                                            | 30x25         |
| 680              | 160  | 687LBB160M2BF  | 243.8                             | 2.32                                            | 22x40         |
| 680              | 160  | 687LBB160M2CD  | 243.8                             | 2.21                                            | 25x30         |
| 680              | 200  | 687LBB200M2CE  | 243.8                             | 2.73                                            | 25x35         |
| 680              | 200  | 687LBB200M2DD  | 243.8                             | 2.85                                            | 30x30         |
| 680              | 200  | 687LBB200M2BG  | 243.8                             | 2.83                                            | 22x45         |
| 680              | 200  | 687LBB200M2EC  | 365.71                            | 2.92                                            | 35x25         |
| 680              | 250  | 687LBB250M2CG  | 243.8                             | 3.19                                            | 25x45         |
| 680              | 250  | 687LBB250M2DE  | 243.8                             | 3.18                                            | 30x35         |

# LBB

+85°C, Extended Life, 3000 hours

| Capacitance (µF) | WVDC | IC PART NUMBER | Maximum ESR (mΩ)<br>120 Hz, +20°C | Maximum RMS Ripple Current (A)<br>120 Hz, +85°C | Dims DxL (mm) |
|------------------|------|----------------|-----------------------------------|-------------------------------------------------|---------------|
| 680              | 250  | 687LBB250M2ED  | 365.71                            | 3.28                                            | 35x30         |
| 680              | 350  | 687LBB350M2EG  | 365.71                            | 3.18                                            | 35x45         |
| 680              | 400  | 687LBB400M2EH  | 365.71                            | 3.85                                            | 35x50         |
| 820              | 160  | 827LBB160M2DD  | 202.18                            | 2.7                                             | 30x30         |
| 820              | 160  | 827LBB160M2CE  | 202.18                            | 2.58                                            | 25x35         |
| 820              | 160  | 827LBB160M2BG  | 202.18                            | 2.68                                            | 22x45         |
| 820              | 200  | 827LBB200M2DD  | 202.18                            | 3.13                                            | 30x30         |
| 820              | 200  | 827LBB200M2CF  | 202.18                            | 3.17                                            | 25x40         |
| 820              | 200  | 827LBB200M2EC  | 303.27                            | 3.21                                            | 35x25         |
| 820              | 250  | 827LBB250M2CH  | 202.18                            | 3.67                                            | 25x50         |
| 820              | 250  | 827LBB250M2DF  | 202.18                            | 3.69                                            | 30x40         |
| 820              | 250  | 827LBB250M2ED  | 303.27                            | 3.6                                             | 35x30         |
| 1000             | 80   | 108LBB080M2BC  | 248.68                            | 1.5                                             | 22x25         |
| 1000             | 100  | 108LBB100M2CC  | 248.68                            | 2                                               | 25x25         |
| 1000             | 100  | 108LBB100M2BD  | 248.68                            | 2                                               | 22x30         |
| 1000             | 160  | 108LBB160M2BH  | 165.79                            | 3.11                                            | 22x50         |
| 1000             | 160  | 108LBB160M2EC  | 248.68                            | 3.05                                            | 35x25         |
| 1000             | 160  | 108LBB160M2DD  | 165.79                            | 2.98                                            | 30x30         |
| 1000             | 160  | 108LBB160M2CF  | 165.79                            | 3.02                                            | 25x40         |
| 1000             | 200  | 108LBB200M2CH  | 165.79                            | 3.87                                            | 25x50         |
| 1000             | 200  | 108LBB200M2DE  | 165.79                            | 3.68                                            | 30x35         |
| 1000             | 200  | 108LBB200M2ED  | 248.68                            | 3.8                                             | 35x30         |
| 1000             | 250  | 108LBB250M2EE  | 248.68                            | 4.22                                            | 35x35         |
| 1000             | 250  | 108LBB250M2DG  | 165.79                            | 4.28                                            | 30x45         |
| 1200             | 100  | 128LBB100M2BD  | 207.233                           | 2.1                                             | 22x30         |
| 1200             | 100  | 128LBB100M2CC  | 207.233                           | 2.1                                             | 25x25         |
| 1200             | 160  | 128LBB160M2ED  | 207.23                            | 3.59                                            | 35x30         |
| 1200             | 160  | 128LBB160M2CG  | 138.16                            | 3.49                                            | 25x45         |
| 1200             | 160  | 128LBB160M2DE  | 138.16                            | 3.48                                            | 30x35         |
| 1200             | 200  | 128LBB200M2DF  | 138.16                            | 4.26                                            | 30x40         |
| 1200             | 200  | 128LBB200M2EE  | 207.23                            | 4.42                                            | 35x35         |
| 1200             | 250  | 128LBB250M2DH  | 138.16                            | 4.91                                            | 30x50         |
| 1200             | 250  | 128LBB250M2EF  | 207.23                            | 4.88                                            | 35x40         |
| 1500             | 63   | 158LBB063M2BC  | 165.786                           | 1.66                                            | 22x25         |
| 1500             | 80   | 158LBB080M2BD  | 165.786                           | 2                                               | 22x30         |
| 1500             | 80   | 158LBB080M2CC  | 165.786                           | 2                                               | 25x25         |
| 1500             | 100  | 158LBB100M2CD  | 165.786                           | 2.43                                            | 25x30         |
| 1500             | 100  | 158LBB100M2BE  | 165.786                           | 2.41                                            | 22x35         |
| 1500             | 100  | 158LBB100M2DC  | 165.786                           | 2.46                                            | 30x25         |
| 1500             | 160  | 158LBB160M2EE  | 165.786                           | 4.26                                            | 35x35         |
| 1500             | 160  | 158LBB160M2DF  | 110.52                            | 4.11                                            | 30x40         |
| 1500             | 200  | 158LBB200M2EF  | 165.786                           | 5.02                                            | 35x40         |
| 1500             | 250  | 158LBB250M2EH  | 165.786                           | 5.74                                            | 35x50         |
| 1800             | 100  | 188LBB100M2DD  | 138.16                            | 2.35                                            | 30x30         |
| 1800             | 100  | 188LBB100M2BF  | 138.16                            | 2.77                                            | 22x40         |
| 1800             | 100  | 188LBB100M2CE  | 138.16                            | 2.75                                            | 25x35         |
| 1800             | 160  | 188LBB160M2DG  | 92.1                              | 4.73                                            | 30x45         |
| 1800             | 160  | 188LBB160M2EE  | 138.16                            | 4.67                                            | 35x35         |
| 1800             | 200  | 188LBB200M2EG  | 138.16                            | 4.32                                            | 35x45         |
| 2200             | 50   | 228LBB050M2BC  | 150.71                            | 1.91                                            | 22x25         |
| 2200             | 63   | 228LBB063M2BD  | 113.04                            | 2.31                                            | 22x30         |
| 2200             | 63   | 228LBB063M2CC  | 113.04                            | 2.3                                             | 25x25         |
| 2200             | 80   | 228LBB080M2CD  | 113.04                            | 2.46                                            | 25x30         |
| 2200             | 80   | 228LBB080M2DC  | 113.04                            | 2.49                                            | 30x25         |
| 2200             | 80   | 228LBB080M2BF  | 113.04                            | 2.44                                            | 22x40         |
| 2200             | 100  | 228LBB100M2CF  | 113.04                            | 3.13                                            | 25x40         |
| 2200             | 100  | 228LBB100M2BH  | 113.04                            | 3.08                                            | 22x50         |
| 2200             | 100  | 228LBB100M2EC  | 113.04                            | 3.14                                            | 35x25         |

| Capacitance (µF) | WVDC | IC PART NUMBER | Maximum ESR (mΩ)<br>120 Hz, +20°C | Maximum RMS Ripple Current (A)<br>120 Hz, +85°C | Dims DxL (mm) |
|------------------|------|----------------|-----------------------------------|-------------------------------------------------|---------------|
| 2200             | 100  | 228LBB100M2DD  | 113.04                            | 3.09                                            | 30x30         |
| 2200             | 160  | 228LBB160M2EG  | 113.04                            | 4.96                                            | 35x45         |
| 2200             | 200  | 228LBB200M2EH  | 113.04                            | 4.92                                            | 35x50         |
| 3300             | 35   | 338LBB035M2BC  | 125.6                             | 2.05                                            | 22x25         |
| 3300             | 50   | 338LBB050M2BD  | 100.48                            | 2.37                                            | 22x30         |
| 3300             | 50   | 338LBB050M2CC  | 100.48                            | 2.38                                            | 25x25         |
| 3300             | 63   | 338LBB063M2CD  | 75.36                             | 2.64                                            | 25x30         |
| 3300             | 63   | 338LBB063M2BE  | 75.36                             | 2.62                                            | 22x35         |
| 3300             | 63   | 338LBB063M2DC  | 75.36                             | 2.78                                            | 30x25         |
| 3300             | 80   | 338LBB080M2BH  | 75.36                             | 3.16                                            | 22x50         |
| 3300             | 80   | 338LBB080M2EC  | 75.36                             | 3.5                                             | 35x25         |
| 3300             | 80   | 338LBB080M2DD  | 75.36                             | 3.17                                            | 30x30         |
| 3300             | 80   | 338LBB080M2CF  | 75.36                             | 3.21                                            | 25x40         |
| 3300             | 100  | 338LBB100M2ED  | 75.36                             | 4.05                                            | 35x30         |
| 3300             | 100  | 338LBB100M2CH  | 75.36                             | 4.06                                            | 25x50         |
| 3300             | 100  | 338LBB100M2DF  | 75.36                             | 4.05                                            | 30x40         |
| 4700             | 25   | 478LBB025M2BC  | 105.82                            | 2.25                                            | 22x25         |
| 4700             | 35   | 478LBB035M2BD  | 88.18                             | 2.41                                            | 22x30         |
| 4700             | 35   | 478LBB035M2CC  | 88.18                             | 2.42                                            | 25x25         |
| 4700             | 50   | 478LBB050M2CD  | 70.55                             | 2.98                                            | 25x30         |
| 4700             | 50   | 478LBB050M2BE  | 70.55                             | 2.72                                            | 22x35         |
| 4700             | 50   | 478LBB050M2DC  | 70.55                             | 2.81                                            | 30x25         |
| 4700             | 63   | 478LBB063M2DD  | 52.91                             | 3.32                                            | 30x30         |
| 4700             | 63   | 478LBB063M2CE  | 52.91                             | 2.79                                            | 25x35         |
| 4700             | 63   | 478LBB063M2BG  | 52.91                             | 3.04                                            | 22x45         |
| 4700             | 63   | 478LBB063M2EC  | 52.91                             | 3.36                                            | 35x25         |
| 4700             | 80   | 478LBB080M2CH  | 52.91                             | 4.05                                            | 25x50         |
| 4700             | 80   | 478LBB080M2DF  | 52.91                             | 4.05                                            | 30x40         |
| 4700             | 80   | 478LBB080M2ED  | 52.91                             | 4.09                                            | 35x30         |
| 4700             | 100  | 478LBB100M2EF  | 52.91                             | 5.11                                            | 35x40         |
| 4700             | 100  | 478LBB100M2DH  | 52.91                             | 5.13                                            | 30x50         |
| 6800             | 16   | 688LBB016M2BC  | 121.9                             | 2.4                                             | 22x25         |
| 6800             | 25   | 688LBB025M2CC  | 73.14                             | 2.56                                            | 25x25         |
| 6800             | 25   | 688LBB025M2BD  | 73.14                             | 2.4                                             | 22x30         |
| 6800             | 35   | 688LBB035M2BE  | 60.95                             | 2.82                                            | 22x35         |
| 6800             | 35   | 688LBB035M2CD  | 60.95                             | 2.74                                            | 25x30         |
| 6800             | 35   | 688LBB035M2DC  | 60.95                             | 2.97                                            | 30x25         |
| 6800             | 50   | 688LBB050M2DD  | 48.76                             | 3                                               | 30x30         |
| 6800             | 50   | 688LBB050M2CF  | 48.76                             | 3.81                                            | 25x40         |
| 6800             | 50   | 688LBB050M2BH  | 48.76                             | 3.81                                            | 22x50         |
| 6800             | 50   | 688LBB050M2EC  | 48.76                             | 3.23                                            | 35x25         |
| 6800             | 63   | 688LBB063M2CH  | 36.57                             | 4.27                                            | 25x50         |
| 6800             | 63   | 688LBB063M2DE  | 48.76                             | 3.46                                            | 30x35         |
| 6800             | 63   | 688LBB063M2ED  | 48.76                             | 4.15                                            | 35x30         |
| 6800             | 80   | 688LBB080M2DH  | 36.57                             | 5.16                                            | 30x50         |
| 6800             | 80   | 688LBB080M2EF  | 36.57                             | 5.14                                            | 35x40         |
| 6800             | 100  | 688LBB100M2EH  | 36.57                             | 6.5                                             | 35x50         |
| 10000            | 16   | 109LBB016M2BC  | 82.89                             | 2.77                                            | 22x25         |
| 10000            | 16   | 109LBB016M2CC  | 66.3                              | 2.67                                            | 25x25         |
| 10000            | 25   | 109LBB025M2CD  | 49.736                            | 3.12                                            | 25x30         |
| 10000            | 25   | 109LBB025M2BE  | 49.736                            | 3.2                                             | 22x35         |
| 10000            | 25   | 109LBB025M2DC  | 49.736                            | 3.21                                            | 30x25         |
| 10000            | 35   | 109LBB035M2EC  | 41.45                             | 3.02                                            | 35x25         |
| 10000            | 35   | 109LBB035M2BG  | 49.736                            | 3.34                                            | 22x45         |
| 10000            | 35   | 109LBB035M2DD  | 41.45                             | 3.46                                            | 30x30         |
| 10000            | 35   | 109LBB035M2CE  | 41.45                             | 3.06                                            | 25x35         |
| 10000            | 50   | 109LBB050M2DE  | 33.16                             | 3.35                                            | 30x35         |
| 10000            | 50   | 109LBB050M2ED  | 33.16                             | 3.64                                            | 35x30         |

# LBB

+85°C, Extended Life, 3000 hours

| Capacitance (μF) | WVDC | IC PART NUMBER | Maximum ESR (mΩ)<br>120 Hz, +20°C | Maximum RMS Ripple Current (A)<br>120 Hz, +85°C | Dims DxL (mm) |
|------------------|------|----------------|-----------------------------------|-------------------------------------------------|---------------|
| 10000            | 50   | 109LBB050M2CH  | 33.16                             | 3.7                                             | 25x50         |
| 10000            | 63   | 109LBB063M2DG  | 24.87                             | 3.72                                            | 30x45         |
| 10000            | 63   | 109LBB063M2EF  | 24.87                             | 5.47                                            | 35x40         |
| 15000            | 16   | 159LBB016M2DC  | 55.26                             | 3.66                                            | 30x25         |
| 15000            | 16   | 159LBB016M2CD  | 55.26                             | 3.46                                            | 25x30         |
| 15000            | 16   | 159LBB016M2BE  | 55.26                             | 3.29                                            | 22x35         |
| 15000            | 25   | 159LBB025M2DD  | 33.16                             | 4                                               | 30x30         |
| 15000            | 25   | 159LBB025M2BG  | 33.16                             | 3.7                                             | 22x45         |
| 15000            | 25   | 159LBB025M2EC  | 33.16                             | 3.95                                            | 35x25         |
| 15000            | 25   | 159LBB025M2CE  | 33.16                             | 3.45                                            | 25x35         |
| 15000            | 35   | 159LBB035M2DE  | 27.63                             | 3.67                                            | 30x35         |
| 15000            | 35   | 159LBB035M2ED  | 27.63                             | 3.98                                            | 35x30         |
| 15000            | 35   | 159LBB035M2CH  | 27.63                             | 4.54                                            | 25x50         |
| 15000            | 50   | 159LBB050M2EF  | 22.1                              | 4.83                                            | 35x40         |
| 15000            | 50   | 159LBB050M2DH  | 22.1                              | 4.61                                            | 30x50         |
| 15000            | 63   | 159LBB063M2EH  | 16.58                             | 5.3                                             | 35x50         |

| Capacitance (μF) | WVDC | IC PART NUMBER | Maximum ESR (mΩ)<br>120 Hz, +20°C | Maximum RMS Ripple Current (A)<br>120 Hz, +85°C | Dims DxL (mm) |
|------------------|------|----------------|-----------------------------------|-------------------------------------------------|---------------|
| 22000            | 16   | 229LBB016M2CF  | 37.68                             | 4.26                                            | 25x40         |
| 22000            | 16   | 229LBB016M2DD  | 37.68                             | 4.21                                            | 30x30         |
| 22000            | 16   | 229LBB016M2EC  | 37.68                             | 4.15                                            | 35x25         |
| 22000            | 16   | 229LBB016M2BH  | 37.68                             | 4.37                                            | 22x50         |
| 22000            | 25   | 229LBB025M2DE  | 22.61                             | 4.52                                            | 30x35         |
| 22000            | 25   | 229LBB025M2CG  | 22.61                             | 4.48                                            | 25x45         |
| 22000            | 25   | 229LBB025M2ED  | 22.61                             | 4.61                                            | 35x30         |
| 22000            | 35   | 229LBB035M2DG  | 18.84                             | 4.94                                            | 30x45         |
| 22000            | 35   | 229LBB035M2EF  | 18.84                             | 5.41                                            | 35x40         |
| 33000            | 16   | 339LBB016M2DF  | 25.12                             | 5.36                                            | 30x40         |
| 33000            | 16   | 339LBB016M2ED  | 25.12                             | 5.15                                            | 35x30         |
| 33000            | 25   | 339LBB025M2DH  | 15.07                             | 6.15                                            | 30x50         |
| 33000            | 25   | 339LBB025M2EF  | 15.07                             | 6.33                                            | 35x40         |
| 33000            | 35   | 339LBB035M2EH  | 12.56                             | 7.27                                            | 35x50         |
| 47000            | 16   | 479LBB016M2EF  | 17.64                             | 6.76                                            | 35x40         |
| 47000            | 16   | 479LBB016M2DH  | 17.64                             | 6.79                                            | 30x50         |