

# Aluminum Capacitors +85 °C, Miniature, Axial Lead



## FEATURES

- High CV per case size
- Material categorization:  
for definitions of compliance please see  
[www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


RoHS  
COMPLIANT

| QUICK REFERENCE DATA                    |                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DESCRIPTION                             | VALUE                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Nominal case size<br>Ø D x L in mm      | 0.197" x 0.472" [5.0 x 12.0]<br>to 0.709" x 1.614" [18.0 x 41.0]                                                                                                                                                                                                                                                                                                                                                                        |
| Operating temperature                   | -40 °C to +85 °C<br>(-25 °C to +85 °C for<br>315 WV <sub>DC</sub> to 450 WV <sub>DC</sub> units)                                                                                                                                                                                                                                                                                                                                        |
| Rated capacitance range, C <sub>R</sub> | 0.47 µF to 10 000 µF                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Tolerance on C <sub>R</sub>             | ± 20 %                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Rated voltage range, U <sub>R</sub>     | 6.3 WV <sub>DC</sub> to 450 WV <sub>DC</sub>                                                                                                                                                                                                                                                                                                                                                                                            |
| Termination                             | 2 axial leads                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Life validation test at 85 °C           | 2000 h: ΔCAP ≤ 20 % from<br>initial measurement.<br>ΔDF x 2 initial specified limit.<br>ΔDCL ≤ initial specified limit.                                                                                                                                                                                                                                                                                                                 |
| Shelf life at 85 °C                     | 1000 h: ΔCAP ± 20 % from<br>initial measurement.<br>ΔDF 2 x initial specified limit.<br>ΔDCL ≤ the initial specified limit.                                                                                                                                                                                                                                                                                                             |
| DC leakage current                      | Rated voltage for 1 min for<br>6.3 WV <sub>DC</sub> to 100 WV <sub>DC</sub> units<br>I < 0.03 CV or 4 µA<br>(whichever is greater)<br>Rated voltage for 2 min for<br>6.3 WV <sub>DC</sub> to 100 WV <sub>DC</sub> units<br>I < 0.01 CV or 3 µA<br>(whichever is greater)<br>Rated voltage for 1 min for<br>160 WV <sub>DC</sub> to 450 WV <sub>DC</sub> units<br>I < 0.1 CV + 40 µA and CV ≤ 1000<br>I < 0.04 CV + 100 µA and CV > 1000 |

| RIPPLE CURRENT MULTIPLIERS        |                |          |            |             |       |          |
|-----------------------------------|----------------|----------|------------|-------------|-------|----------|
| TEMPERATURE                       |                |          |            |             |       |          |
| AMBIENT TEMPERATURE               |                |          |            | MULTIPLIERS |       |          |
| ≤ +70 °C                          |                |          |            | 1.27        |       |          |
| +85 °C                            |                |          |            | 1.0         |       |          |
| FREQUENCY (Hz) / CAPACITANCE (µF) |                |          |            |             |       |          |
| WV <sub>DC</sub>                  | CAP. (µF)      | 50 TO 60 | 100 TO 120 | 300 TO 400  | 1 kHz | ≥ 10 kHz |
| 6.3 to 100                        | 0 to 47        | 0.75     | 1          | 1.35        | 1.57  | 2.00     |
|                                   | 100 to 470     | 0.80     | 1          | 1.23        | 1.34  | 1.50     |
|                                   | 1000 to 10 000 | 0.85     | 1          | 1.10        | 1.13  | 1.15     |
| 160 to 450                        | 1 to 100       | 0.80     | 1          | 1.25        | 1.40  | 1.60     |

| LOW TEMPERATURE PERFORMANCE                                                        |                       |                       |
|------------------------------------------------------------------------------------|-----------------------|-----------------------|
| MAXIMUM IMPEDANCE RATIO Z <sup>(T)</sup> / Z <sup>(+20 °C)</sup> MAXIMUM AT 120 Hz |                       |                       |
| RATED VOLTAGE (WV <sub>DC</sub> )                                                  | Z - 25 °C / Z + 20 °C | Z - 40 °C / Z + 20 °C |
| 6.3                                                                                | 4.0                   | 10.0                  |
| 10.0                                                                               | 3.0                   | 8.0                   |
| 16.0                                                                               | 2.0                   | 6.0                   |
| 25.0                                                                               | 2.0                   | 4.0                   |
| 35.0 to 100.0                                                                      | 2.0                   | 3.0                   |
| 160.0 to 250.0                                                                     | 4.0                   | 12.0                  |
| 315.0 to 350.0                                                                     | 6.0                   | -                     |
| 400.0 to 450.0                                                                     | 15.0                  | -                     |

| DIMENSIONS in inches [millimeters] |                             |               |                    |           |                             |               |                    |
|------------------------------------|-----------------------------|---------------|--------------------|-----------|-----------------------------|---------------|--------------------|
| CASE CODE                          | NOMINAL CASE SIZE D x L     | LEAD DIAMETER | TYPICAL WEIGHT (g) | CASE CODE | NOMINAL CASE SIZE D x L     | LEAD DIAMETER | TYPICAL WEIGHT (g) |
| JL                                 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]   | 0.56               | NR        | 0.394 x 1.023 [10.0 x 26.0] | 0.024 [0.6]   | 3.10               |
| LL                                 | 0.248 x 0.472 [6.3 x 12.0]  | 0.024 [0.6]   | 0.90               | PR        | 0.512 x 1.023 [13.0 x 26.0] | 0.024 [0.6]   | 4.63               |
| LM                                 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]   | 1.07               | PS        | 0.512 x 1.240 [13.0 x 31.5] | 0.024 [0.6]   | 5.47               |
| MM                                 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]   | 1.45               | QS        | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]   | 8.26               |
| MN                                 | 0.315 x 0.787 [8.0 x 20.0]  | 0.024 [0.6]   | 1.70               | QT        | 0.630 x 1.633 [16.0 x 41.5] | 0.031 [0.8]   | 10.42              |
| NP                                 | 0.394 x 0.827 [10.0 x 21.0] | 0.024 [0.6]   | 2.32               | RT        | 0.709 x 1.614 [18.0 x 41.0] | 0.031 [0.8]   | 12.42              |

**DIMENSIONS** in inches [millimeters]

**DIMENSIONS** in inches [millimeters] **AND PACKAGING QUANTITIES**

| CASE CODE | TAPING CODE | SPECIFICATIONS             |                                 |                   |
|-----------|-------------|----------------------------|---------------------------------|-------------------|
|           |             | TAPE WIDTH W ± 0.059 [1.5] | COMPONENT PITCH P ± 0.020 [0.5] | QUANTITY PER REEL |
| JL        | B           | 2.063 [52.4]               | 0.394 [10.0]                    | 1600              |
| LL        | B           | 2.063 [52.4]               | 0.394 [10.0]                    | 1300              |
| LM        | B           | 2.063 [52.4]               | 0.394 [10.0]                    | 1300              |
| MM        | B           | 2.063 [52.4]               | 0.394 [10.0]                    | 1000              |
| MN        | B           | 2.500 [63.5]               | 0.394 [10.0]                    | 1000              |
| NP        | B           | 2.500 [63.5]               | 0.591 [15.0]                    | 500               |
| NP        | C           | 2.874 [73.0]               | 0.591 [15.0]                    | 500               |
| NR        | B           | 2.500 [63.5]               | 0.591 [15.0]                    | 500               |
| NR        | C           | 2.874 [73.0]               | 0.591 [15.0]                    | 500               |
| PR        | B           | 2.500 [63.5]               | 0.591 [15.0]                    | 350               |
| PR        | C           | 2.874 [73.0]               | 0.591 [15.0]                    | 350               |
| PS        | B           | 2.874 [73.0]               | 0.591 [15.0]                    | 350               |

**ORDERING EXAMPLE**

Electrolytic capacitor 516D series: 516D 107 M 6R3 JL 6 A E3

**DESCRIPTION**

| CODE | EXPLANATION                           |
|------|---------------------------------------|
| 516D | Product type                          |
| 107  | Capacitance value (100 μF)            |
| M    | Tolerance (M = ± 20 %)                |
| 6R3  | Voltage rating at 85 °C (6R3 = 6.3 V) |
| JL   | Can size (see Dimensions table)       |
| 6    | Packaging (bulk)                      |
| A    | Lead style (uncut)                    |
| E3   | RoHS compliant indicator              |

**PACKING AND LEAD STYLES**

- 6A Bulk, uncut leads.
- 7B Tape and reel. For case codes JL, LL, LM, MM, MN, NP, NR, PR and PS only.
- 7C Tape and reel with 2.874" [73.0] mm tape width. For case codes NP, NR and PR only.

\* Suffix E3 denotes lead (Pb)-free / RoHS-compliant products

**ELECTRICAL DATA AND ORDERING INFORMATION**

| CAPACITANCE<br>( $\mu$ F)                         | PART NUMBER       | NOMINAL CASE SIZE<br>D x L  | LEAD<br>DIAMETER | MAX. DF<br>AT +20 °C<br>120 Hz | MAX. RIPPLE<br>AT +85 °C / 120 Hz<br>(mA <sub>RMS</sub> ) |
|---------------------------------------------------|-------------------|-----------------------------|------------------|--------------------------------|-----------------------------------------------------------|
| <b>6.3 WV<sub>DC</sub> AT +85 °C, SURGE = 8 V</b> |                   |                             |                  |                                |                                                           |
| 100                                               | 516D107M6R3JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.24                           | 110                                                       |
| 220                                               | 516D227M6R3LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.24                           | 200                                                       |
| 330                                               | 516D337M6R3LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.24                           | 250                                                       |
| 470                                               | 516D477M6R3MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.24                           | 330                                                       |
| 1000                                              | 516D108M6R3NP6AE3 | 0.394 x 0.827 [10.0 x 21.0] | 0.024 [0.6]      | 0.24                           | 600                                                       |
| 2200                                              | 516D228M6R3PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.24                           | 1020                                                      |
| 3300                                              | 516D338M6R3PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.24                           | 1200                                                      |
| 4700                                              | 516D478M6R3QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.024 [0.6]      | 0.24                           | 1500                                                      |
| 6800                                              | 516D688M6R3QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.24                           | 1840                                                      |
| 10 000                                            | 516D109M6R3QT6AE3 | 0.630 x 1.633 [16.0 x 41.5] | 0.031 [0.8]      | 0.24                           | 2260                                                      |
| <b>10 WV<sub>DC</sub> AT +85 °C, SURGE = 13 V</b> |                   |                             |                  |                                |                                                           |
| 33                                                | 516D336M010JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.2                            | 65                                                        |
| 47                                                | 516D476M010JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.2                            | 80                                                        |
| 100                                               | 516D107M010LL6AE3 | 0.248 x 0.472 [6.3 x 12.0]  | 0.024 [0.6]      | 0.2                            | 130                                                       |
| 220                                               | 516D227M010LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.2                            | 210                                                       |
| 330                                               | 516D337M010MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.2                            | 300                                                       |
| 470                                               | 516D477M010MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.2                            | 350                                                       |
| 1000                                              | 516D108M010NP6AE3 | 0.394 x 0.827 [10.0 x 21.0] | 0.024 [0.6]      | 0.2                            | 640                                                       |
| 2200                                              | 516D228M010PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.2                            | 1090                                                      |
| 3300                                              | 516D338M010PS6AE3 | 0.512 x 1.240 [13.0 x 31.5] | 0.024 [0.6]      | 0.2                            | 1390                                                      |
| 4700                                              | 516D478M010QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.2                            | 1730                                                      |
| 6800                                              | 516D688M010QT6AE3 | 0.630 x 1.633 [16.0 x 41.5] | 0.031 [0.8]      | 0.2                            | 1930                                                      |
| 10 000                                            | 516D109M010RT6AE3 | 0.709 x 1.614 [18.0 x 41.0] | 0.031 [0.8]      | 0.2                            | 2350                                                      |
| <b>16 WV<sub>DC</sub> AT +85 °C, SURGE = 20 V</b> |                   |                             |                  |                                |                                                           |
| 22                                                | 516D226M016JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.16                           | 60                                                        |
| 33                                                | 516D336M016JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.16                           | 70                                                        |
| 47                                                | 516D476M016JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.16                           | 85                                                        |
| 100                                               | 516D107M016LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.16                           | 160                                                       |
| 220                                               | 516D227M016MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.16                           | 260                                                       |
| 330                                               | 516D337M016MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.16                           | 320                                                       |
| 470                                               | 516D477M016MN6AE3 | 0.315 x 0.787 [8.0 x 20.0]  | 0.024 [0.6]      | 0.16                           | 430                                                       |
| 1000                                              | 516D108M016NR6AE3 | 0.394 x 1.024 [10.0 x 26.0] | 0.024 [0.6]      | 0.16                           | 770                                                       |
| 2200                                              | 516D228M016PS6AE3 | 0.512 x 1.240 [13.0 x 31.5] | 0.024 [0.6]      | 0.16                           | 1180                                                      |
| 3300                                              | 516D338M016QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.16                           | 1620                                                      |
| 4700                                              | 516D478M016QT6AE3 | 0.630 x 1.633 [16.0 x 41.5] | 0.031 [0.8]      | 0.16                           | 1840                                                      |
| 6800                                              | 516D688M016RT6AE3 | 0.709 x 1.614 [18.0 x 41.0] | 0.031 [0.8]      | 0.16                           | 2310                                                      |
| <b>25 WV<sub>DC</sub> AT +85 °C, SURGE = 32 V</b> |                   |                             |                  |                                |                                                           |
| 10                                                | 516D106M025JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.14                           | 40                                                        |
| 22                                                | 516D226M025JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.14                           | 65                                                        |
| 33                                                | 516D336M025JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.14                           | 80                                                        |
| 47                                                | 516D476M025LL6AE3 | 0.248 x 0.472 [6.3 x 12.0]  | 0.024 [0.6]      | 0.14                           | 100                                                       |
| 100                                               | 516D107M025LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.14                           | 170                                                       |
| 220                                               | 516D227M025MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.14                           | 280                                                       |
| 330                                               | 516D337M025MN6AE3 | 0.315 x 0.787 [8.0 x 20.0]  | 0.024 [0.6]      | 0.14                           | 380                                                       |
| 470                                               | 516D477M025NR6AE3 | 0.394 x 1.024 [10.0 x 26.0] | 0.024 [0.6]      | 0.14                           | 510                                                       |
| 1000                                              | 516D108M025PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.14                           | 900                                                       |

**ELECTRICAL DATA AND ORDERING INFORMATION**

| CAPACITANCE<br>( $\mu$ F)                         | PART NUMBER       | NOMINAL CASE SIZE<br>D x L  | LEAD<br>DIAMETER | MAX. DF<br>AT +20 °C<br>120 Hz | MAX. RIPPLE<br>AT +85 °C / 120 Hz<br>(mA <sub>RMS</sub> ) |
|---------------------------------------------------|-------------------|-----------------------------|------------------|--------------------------------|-----------------------------------------------------------|
| <b>25 WV<sub>DC</sub> AT +85 °C, SURGE = 32 V</b> |                   |                             |                  |                                |                                                           |
| 2200                                              | 516D228M025QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.14                           | 1480                                                      |
| 3300                                              | 516D338M025QT6AE3 | 0.630 x 1.633 [16.0 x 41.5] | 0.031 [0.8]      | 0.14                           | 1710                                                      |
| 4700                                              | 516D478M025RT6AE3 | 0.709 x 1.614 [18.0 x 41.0] | 0.031 [0.8]      | 0.14                           | 2170                                                      |
| <b>35 WV<sub>DC</sub> AT +85 °C, SURGE = 44 V</b> |                   |                             |                  |                                |                                                           |
| 10                                                | 516D106M035JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.12                           | 45                                                        |
| 22                                                | 516D226M035JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.12                           | 70                                                        |
| 33                                                | 516D336M035LL6AE3 | 0.248 x 0.472 [6.3 x 12.0]  | 0.024 [0.6]      | 0.12                           | 90                                                        |
| 47                                                | 516D476M035LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.12                           | 120                                                       |
| 100                                               | 516D107M035MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.12                           | 210                                                       |
| 220                                               | 516D227M035MN6AE3 | 0.315 x 0.787 [8.0 x 20.0]  | 0.024 [0.6]      | 0.12                           | 340                                                       |
| 330                                               | 516D337M035NP6AE3 | 0.394 x 0.827 [10.0 x 21.0] | 0.024 [0.6]      | 0.12                           | 460                                                       |
| 470                                               | 516D477M035NR6AE3 | 0.394 x 1.024 [10.0 x 26.0] | 0.024 [0.6]      | 0.12                           | 610                                                       |
| 1000                                              | 516D108M035PS6AE3 | 0.512 x 1.240 [13.0 x 31.5] | 0.024 [0.6]      | 0.12                           | 1060                                                      |
| 2200                                              | 516D228M035QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.12                           | 1580                                                      |
| 3300                                              | 516D338M035QT6AE3 | 0.630 x 1.633 [16.0 x 41.5] | 0.031 [0.8]      | 0.12                           | 2050                                                      |
| <b>50 WV<sub>DC</sub> AT +85 °C, SURGE = 63 V</b> |                   |                             |                  |                                |                                                           |
| 0.47                                              | 516D474M050JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.1                            | 5                                                         |
| 1.0                                               | 516D105M050JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.1                            | 10                                                        |
| 2.2                                               | 516D225M050JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.1                            | 23                                                        |
| 3.3                                               | 516D335M050JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.1                            | 28                                                        |
| 4.7                                               | 516D475M050JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.1                            | 34                                                        |
| 10                                                | 516D106M050JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.1                            | 50                                                        |
| 22                                                | 516D226M050LL6AE3 | 0.248 x 0.472 [6.3 x 12.0]  | 0.024 [0.6]      | 0.1                            | 85                                                        |
| 33                                                | 516D336M050LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.1                            | 110                                                       |
| 47                                                | 516D476M050LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.1                            | 130                                                       |
| 100                                               | 516D107M050MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.1                            | 220                                                       |
| 220                                               | 516D227M050NP6AE3 | 0.394 x 0.827 [10.0 x 21.0] | 0.024 [0.6]      | 0.1                            | 410                                                       |
| 330                                               | 516D337M050NR6AE3 | 0.394 x 1.024 [10.0 x 26.0] | 0.024 [0.6]      | 0.1                            | 560                                                       |
| 470                                               | 516D477M050PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.8]      | 0.1                            | 730                                                       |
| 1000                                              | 516D108M050QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.1                            | 1260                                                      |
| 2200                                              | 516D228M050RT6AE3 | 0.709 x 1.614 [18.0 x 41.0] | 0.031 [0.8]      | 0.1                            | 1920                                                      |
| <b>63 WV<sub>DC</sub> AT +85 °C, SURGE = 79 V</b> |                   |                             |                  |                                |                                                           |
| 3.3                                               | 516D335M063JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.08                           | 31                                                        |
| 4.7                                               | 516D475M063JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.08                           | 37                                                        |
| 10                                                | 516D106M063JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.08                           | 55                                                        |
| 22                                                | 516D226M063LL6AE3 | 0.248 x 0.472 [6.3 x 12.0]  | 0.024 [0.6]      | 0.08                           | 90                                                        |
| 33                                                | 516D336M063LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.08                           | 120                                                       |
| 47                                                | 516D476M063MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.08                           | 160                                                       |
| 100                                               | 516D107M063MN6AE3 | 0.315 x 0.787 [8.0 x 20.0]  | 0.024 [0.6]      | 0.08                           | 260                                                       |
| 220                                               | 516D227M063NR6AE3 | 0.394 x 1.024 [10.0 x 26.0] | 0.024 [0.6]      | 0.08                           | 480                                                       |
| 330                                               | 516D337M063PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.08                           | 650                                                       |
| 470                                               | 516D477M063PS6AE3 | 0.512 x 1.240 [13.0 x 31.5] | 0.024 [0.6]      | 0.08                           | 840                                                       |
| 1000                                              | 516D108M063QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.08                           | 1330                                                      |

**ELECTRICAL DATA AND ORDERING INFORMATION**

| CAPACITANCE<br>( $\mu$ F)                           | PART NUMBER       | NOMINAL CASE SIZE<br>D x L  | LEAD<br>DIAMETER | MAX. DF<br>AT +20 °C<br>120 Hz | MAX. RIPPLE<br>AT +85 °C / 120 Hz<br>(mA <sub>RMS</sub> ) |
|-----------------------------------------------------|-------------------|-----------------------------|------------------|--------------------------------|-----------------------------------------------------------|
| <b>100 WV<sub>DC</sub> AT +85 °C, SURGE = 125 V</b> |                   |                             |                  |                                |                                                           |
| 0.47                                                | 516D474M100JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.08                           | 10                                                        |
| 1.0                                                 | 516D105M100JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.08                           | 18                                                        |
| 2.2                                                 | 516D225M100JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.08                           | 28                                                        |
| 3.3                                                 | 516D335M100JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.08                           | 34                                                        |
| 4.7                                                 | 516D475M100JL6AE3 | 0.197 x 0.472 [5.0 x 12.0]  | 0.024 [0.6]      | 0.08                           | 40                                                        |
| 10                                                  | 516D106M100LL6AE3 | 0.248 x 0.472 [6.3 x 12.0]  | 0.024 [0.6]      | 0.08                           | 60                                                        |
| 22                                                  | 516D226M100MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.08                           | 120                                                       |
| 33                                                  | 516D336M100MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.08                           | 150                                                       |
| 47                                                  | 516D476M100MN6AE3 | 0.315 x 0.787 [8.0 x 20.0]  | 0.024 [0.6]      | 0.08                           | 190                                                       |
| 100                                                 | 516D107M100NR6AE3 | 0.394 x 1.024 [10.0 x 26.0] | 0.024 [0.6]      | 0.08                           | 340                                                       |
| 220                                                 | 516D227M100PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.08                           | 560                                                       |
| 330                                                 | 516D337M100PS6AE3 | 0.512 x 1.240 [13.0 x 31.5] | 0.024 [0.6]      | 0.08                           | 750                                                       |
| 470                                                 | 516D477M100QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.08                           | 970                                                       |
| <b>160 WV<sub>DC</sub> AT +85 °C, SURGE = 200 V</b> |                   |                             |                  |                                |                                                           |
| 1.0                                                 | 516D105M160LL6AE3 | 0.248 x 0.472 [6.3 x 12.0]  | 0.024 [0.6]      | 0.2                            | 13                                                        |
| 2.2                                                 | 516D225M160LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.2                            | 23                                                        |
| 3.3                                                 | 516D335M160MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.2                            | 33                                                        |
| 4.7                                                 | 516D475M160MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.2                            | 39                                                        |
| 10                                                  | 516D106M160MN6AE3 | 0.315 x 0.787 [8.0 x 20.0]  | 0.024 [0.6]      | 0.2                            | 60                                                        |
| 22                                                  | 516D226M160NR6AE3 | 0.394 x 1.024 [10.0 x 26.0] | 0.024 [0.6]      | 0.2                            | 120                                                       |
| 33                                                  | 516D336M160PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.2                            | 170                                                       |
| 47                                                  | 516D476M160PS6AE3 | 0.512 x 1.240 [13.0 x 31.5] | 0.024 [0.6]      | 0.2                            | 230                                                       |
| 100                                                 | 516D107M160QT6AE3 | 0.630 x 1.633 [16.0 x 41.5] | 0.031 [0.8]      | 0.2                            | 430                                                       |
| <b>200 WV<sub>DC</sub> AT +85 °C, SURGE = 250 V</b> |                   |                             |                  |                                |                                                           |
| 1.0                                                 | 516D105M200LL6AE3 | 0.248 x 0.472 [6.3 x 12.0]  | 0.024 [0.6]      | 0.2                            | 13                                                        |
| 2.2                                                 | 516D225M200LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.2                            | 23                                                        |
| 3.3                                                 | 516D335M200MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.2                            | 33                                                        |
| 4.7                                                 | 516D475M200MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.2                            | 39                                                        |
| 10                                                  | 516D106M200NP6AE3 | 0.394 x 0.827 [10.0 x 21.0] | 0.024 [0.6]      | 0.2                            | 70                                                        |
| 22                                                  | 516D226M200PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.2                            | 140                                                       |
| 33                                                  | 516D336M200PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.2                            | 170                                                       |
| 47                                                  | 516D476M200PS6AE3 | 0.512 x 1.240 [13.0 x 31.5] | 0.024 [0.6]      | 0.2                            | 230                                                       |
| 100                                                 | 516D107M200QT6AE3 | 0.630 x 1.633 [16.0 x 41.5] | 0.031 [0.8]      | 0.2                            | 430                                                       |
| <b>250 WV<sub>DC</sub> AT +85 °C, SURGE = 300 V</b> |                   |                             |                  |                                |                                                           |
| 1.0                                                 | 516D105M250LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.2                            | 14                                                        |
| 2.2                                                 | 516D225M250MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.2                            | 27                                                        |
| 3.3                                                 | 516D335M250MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.2                            | 33                                                        |
| 4.7                                                 | 516D475M250MN6AE3 | 0.315 x 0.787 [8.0 x 20.0]  | 0.024 [0.6]      | 0.2                            | 45                                                        |
| 10                                                  | 516D106M250NP6AE3 | 0.394 x 0.827 [10.0 x 21.0] | 0.024 [0.6]      | 0.2                            | 70                                                        |
| 22                                                  | 516D226M250PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.2                            | 140                                                       |
| 33                                                  | 516D336M250PS6AE3 | 0.512 x 1.240 [13.0 x 31.5] | 0.024 [0.6]      | 0.2                            | 190                                                       |
| 47                                                  | 516D476M250QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.2                            | 260                                                       |
| 100                                                 | 516D107M250QT6AE3 | 0.630 x 1.633 [16.0 x 41.5] | 0.031 [0.8]      | 0.2                            | 430                                                       |

**ELECTRICAL DATA AND ORDERING INFORMATION**

| CAPACITANCE<br>( $\mu$ F)                           | PART NUMBER       | NOMINAL CASE SIZE<br>D x L  | LEAD<br>DIAMETER | MAX. DF<br>AT +20 °C<br>120 Hz | MAX. RIPPLE<br>AT +85 °C / 120 Hz<br>(mA <sub>RMS</sub> ) |
|-----------------------------------------------------|-------------------|-----------------------------|------------------|--------------------------------|-----------------------------------------------------------|
| <b>315 WV<sub>DC</sub> AT +85 °C, SURGE = 365 V</b> |                   |                             |                  |                                |                                                           |
| 1.0                                                 | 516D105M315LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.2                            | 14                                                        |
| 2.2                                                 | 516D225M315MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.2                            | 27                                                        |
| 3.3                                                 | 516D335M315MN6AE3 | 0.315 x .0787 [8.0 x 20.0]  | 0.024 [0.6]      | 0.2                            | 36                                                        |
| 4.7                                                 | 516D475M315MN6AE3 | 0.315 x 0.787 [8.0 x 20.0]  | 0.024 [0.6]      | 0.2                            | 45                                                        |
| 10                                                  | 516D106M315NR6AE3 | 0.394 x 1.024 [10.0 x 26.0] | 0.024 [0.6]      | 0.2                            | 80                                                        |
| 22                                                  | 516D226M315PS6AE3 | 0.512 x 1.240 [13.0 x 31.5] | 0.024 [0.6]      | 0.2                            | 150                                                       |
| 33                                                  | 516D336M315QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.2                            | 210                                                       |
| 47                                                  | 516D476M315QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.2                            | 260                                                       |
| <b>350 WV<sub>DC</sub> AT +85 °C, SURGE = 400 V</b> |                   |                             |                  |                                |                                                           |
| 1.0                                                 | 516D105M350LM6AE3 | 0.248 x 0.630 [6.3 x 16.0]  | 0.024 [0.6]      | 0.25                           | 12                                                        |
| 2.2                                                 | 516D225M350MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.25                           | 24                                                        |
| 3.3                                                 | 516D335M350MN6AE3 | 0.315 x 0.787 [8.0 x 20.0]  | 0.024 [0.6]      | 0.25                           | 32                                                        |
| 4.7                                                 | 516D475M350NP6AE3 | 0.394 x 0.827 [10.0 x 21.0] | 0.024 [0.6]      | 0.25                           | 46                                                        |
| 10                                                  | 516D106M350PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.25                           | 85                                                        |
| 22                                                  | 516D226M350PS6AE3 | 0.512 x 1.240 [13.0 x 31.5] | 0.024 [0.6]      | 0.25                           | 140                                                       |
| 33                                                  | 516D336M350QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.25                           | 190                                                       |
| 47                                                  | 516D476M350QT6AE3 | 0.630 x 1.633 [16.0 x 41.5] | 0.031 [0.8]      | 0.25                           | 260                                                       |
| <b>400 WV<sub>DC</sub> AT +85 °C, SURGE = 450 V</b> |                   |                             |                  |                                |                                                           |
| 1.0                                                 | 516D105M400MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.25                           | 14                                                        |
| 2.2                                                 | 516D225M400MN6AE3 | 0.315 x 0.787 [8.0 x 20.0]  | 0.024 [0.6]      | 0.25                           | 28                                                        |
| 3.3                                                 | 516D335M400NP6AE3 | 0.394 x 0.827 [10.0 x 21.0] | 0.024 [0.6]      | 0.25                           | 38                                                        |
| 4.7                                                 | 516D475M400NP6AE3 | 0.394 x 0.827 [10.0 x 21.0] | 0.024 [0.6]      | 0.25                           | 46                                                        |
| 10                                                  | 516D106M400PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.25                           | 85                                                        |
| 22                                                  | 516D226M400QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.25                           | 150                                                       |
| 33                                                  | 516D336M400QT6AE3 | 0.630 x 1.633 [16.0 x 41.5] | 0.031 [0.8]      | 0.25                           | 210                                                       |
| 47                                                  | 516D476M400RT6AE3 | 0.709 x 1.614 [18.0 x 41.0] | 0.031 [0.8]      | 0.25                           | 290                                                       |
| <b>450 WV<sub>DC</sub> AT +85 °C, SURGE = 500 V</b> |                   |                             |                  |                                |                                                           |
| 1.0                                                 | 516D105M450MM6AE3 | 0.315 x 0.630 [8.0 x 16.0]  | 0.024 [0.6]      | 0.25                           | 14                                                        |
| 2.2                                                 | 516D225M450NP6AE3 | 0.394 x 0.827 [10.0 x 21.0] | 0.024 [0.6]      | 0.25                           | 31                                                        |
| 3.3                                                 | 516D335M450NP6AE3 | 0.394 x 0.827 [10.0 x 21.0] | 0.024 [0.6]      | 0.25                           | 38                                                        |
| 4.7                                                 | 516D475M450NR6AE3 | 0.394 x 1.024 [10.0 x 26.0] | 0.024 [0.6]      | 0.25                           | 50                                                        |
| 10                                                  | 516D106M450PR6AE3 | 0.512 x 1.024 [13.0 x 26.0] | 0.024 [0.6]      | 0.25                           | 85                                                        |
| 22                                                  | 516D226M450QS6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 0.031 [0.8]      | 0.25                           | 150                                                       |
| 33                                                  | 516D336M450RT6AE3 | 0.709 x 1.614 [18.0 x 41.0] | 0.031 [0.8]      | 0.25                           | 230                                                       |

Statements about product lifetime are based on calculations and internal testing. They should only be interpreted as estimations. Also due to external factors, the lifetime in the field application may deviate from the calculated lifetime. In general, nothing stated herein shall be construed as a guarantee of durability.



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