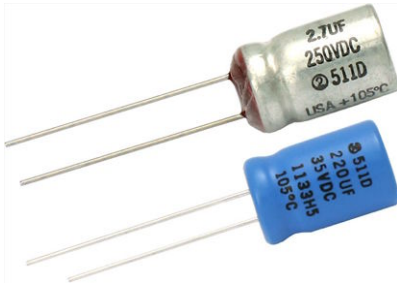


Aluminum Capacitors General Purpose, Miniature, Radial Lead


FEATURES

- +105 °C
- Suitable for long life applications
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



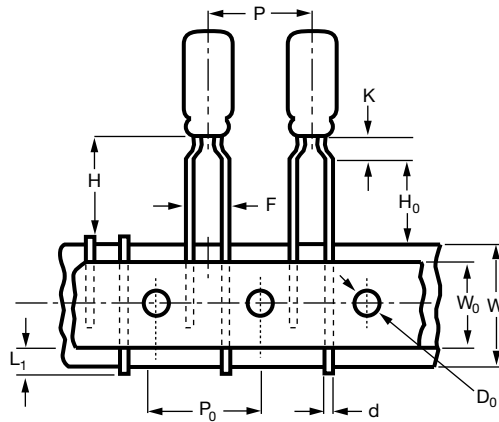
| QUICK REFERENCE DATA | |
|--|---|
| DESCRIPTION | VALUE |
| Nominal case size Ø D x L in mm | 0.236" x 0.433" [6.0 x 11.0] to 0.709" x 1.417" [18.0 x 36.0] |
| Operating temperature | -40 °C to +105 °C |
| Rated capacitance range, C _R | 1 µF to 10 000 µF |
| Tolerance on C _R | ± 20 % |
| Rated voltage range, U _R | 6.3 WV _{DC} to 250 WV _{DC} |
| Termination | 2 or 3 radial leads |
| Life validation test at 105 °C | 1000 h (diameter ≤ 0.315" [8.0]): 2000 h (diameter > 0.315" [8.0]): ΔCAP ≤ 15 % (6.3 WV _{DC} to 16 WV _{DC}), ≤ 10 % (25 WV _{DC} to 250 WV _{DC}) from initial measurement. ΔESR ≤ 1.2 x initial specified limit. ΔDCL ≤ initial specified limit |
| Shelf life at 105 °C | 500 h: ΔCAP ≤ 10 % from initial measurement. ΔESR 1.2 x initial specified limit. ΔDCL ≤ 2 x initial specified limit. |
| DC leakage current (after 5 min charge) | I = 0.005 CV (6.3 V _{DC} to 63 V _{DC}) I = 0.01 CV (100 V _{DC} to 250 V _{DC}) I in µA, C in µF, V in Volts |

| RIPPLE CURRENT MULTIPLIERS | | | | |
|----------------------------|----------|-------------|------------|------------|
| TEMPERATURE | | | | |
| AMBIENT TEMPERATURE | | MULTIPLIERS | | |
| +105 °C | | 0.4 | | |
| +95 °C | | 0.7 | | |
| +85 °C | | 1.0 | | |
| +75 °C | | 1.2 | | |
| ≤ +65 °C | | 1.4 | | |
| FREQUENCY (Hz) | | | | |
| WV _{DC} | 50 TO 60 | 100 TO 120 | 300 TO 400 | 1K TO 100K |
| 6.3 to 25 | 0.85 | 1.00 | 1.05 | 1.1 |
| 26 to 250 | 0.80 | 1.00 | 1.30 | 1.4 |

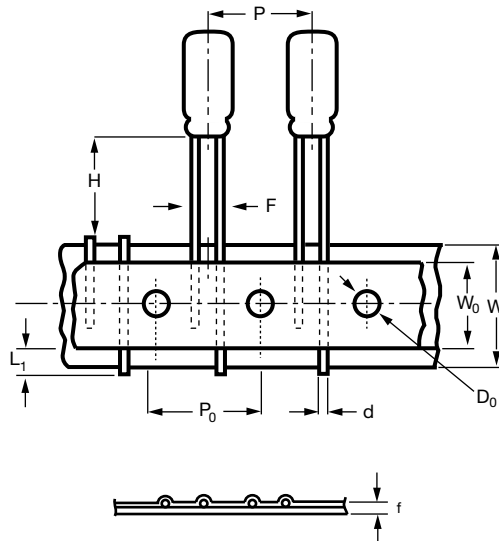
| LEAD LENGTH FOR D TERMINATION | | |
|-------------------------------|--------------------|--------------------|
| CASE CODE | L ₁ (-) | L ₂ (+) |
| D | 0.591 [15.0] | 0.787 [20.0] |

| DIMENSIONS in inches [millimeters] | | | | | | | | | | |
|------------------------------------|--------------|--------------|----------------|--------------|----------------|--------------|------------------|-----------------|---------------|---------|
| CASE CODE | NOMINAL | | STYLES 2 AND 4 | | STYLES 3 AND 5 | | LEAD SPACING | | LEAD DIAMETER | |
| | D | L | D (max.) | L (max.) | D (max.) | L (max.) | S ± 0.024 [0.60] | T ± 0.02 [0.50] | NOMINAL | AWG NO. |
| AA | 0.236 [6.0] | 0.433 [11.0] | 0.256 [6.5] | 0.472 [12.0] | 0.256 [6.5] | 0.512 [13.0] | 0.098 [2.5] | n/a | 0.025 [0.63] | 22 |
| BB | 0.315 [8.0] | 0.472 [12.0] | 0.335 [8.5] | 0.512 [13.0] | 0.335 [8.5] | 0.551 [14.0] | 0.138 [3.5] | n/a | 0.025 [0.63] | 22 |
| CC | 0.394 [10.0] | 0.512 [13.0] | 0.413 [10.5] | 0.563 [14.3] | 0.413 [10.5] | 0.630 [16.0] | 0.197 [5.0] | n/a | 0.025 [0.63] | 22 |
| CD | 0.394 [10.0] | 0.630 [16.0] | 0.413 [10.5] | 0.669 [17.0] | 0.413 [10.5] | 0.740 [18.8] | 0.197 [5.0] | n/a | 0.025 [0.63] | 22 |
| CG | 0.394 [10.0] | 0.787 [20.0] | 0.413 [10.5] | 0.846 [21.5] | 0.413 [10.5] | 0.906 [23.0] | 0.197 [5.0] | n/a | 0.025 [0.63] | 22 |
| DG | 0.492 [12.5] | 0.787 [20.0] | 0.512 [13.0] | 0.846 [21.5] | 0.512 [13.0] | 0.906 [23.0] | 0.197 [5.0] | 0.098 [2.5] | 0.032 [0.81] | 20 |
| DK | 0.492 [12.5] | 0.984 [25.0] | 0.512 [13.0] | 1.043 [26.5] | 0.512 [13.0] | 1.142 [29.0] | 0.197 [5.0] | 0.098 [2.5] | 0.032 [0.81] | 20 |
| EK | 0.630 [16.0] | 0.984 [25.0] | 0.650 [16.5] | 1.031 [26.2] | 0.650 [16.5] | 1.098 [27.9] | 0.295 [7.5] | 0.150 [3.8] | 0.032 [0.81] | 20 |
| EN | 0.630 [16.0] | 1.260 [32.0] | 0.650 [16.5] | 1.319 [33.5] | 0.650 [16.5] | 1.417 [36.0] | 0.295 [7.5] | 0.150 [3.8] | 0.032 [0.81] | 20 |
| ER | 0.630 [16.0] | 1.417 [36.0] | 0.650 [16.5] | 1.476 [37.5] | 0.650 [16.5] | 1.575 [40.0] | 0.295 [7.5] | 0.150 [3.8] | 0.032 [0.81] | 20 |
| FR | 0.709 [18.0] | 1.417 [36.0] | 0.728 [18.5] | 1.476 [37.5] | 0.728 [18.5] | 1.575 [40.0] | 0.295 [7.5] | 0.150 [3.8] | 0.032 [0.81] | 20 |

TAPE AND REEL, SPECIFICATIONS TO EIA-468 in inches [millimeters]

Formed Leads


| DIMENSIONS in inches [millimeters] | | |
|------------------------------------|----------------|---------------|
| CASE SIZE | F LEAD SPACING | STD. QTY/REEL |
| 0.236 x 0.433 [6.0 x 11.0] | 0.197 [5.0] | 800 |
| 0.315 x 0.472 [8.0 x 12.0] | 0.197 [5.0] | 700 |

Unformed Leads


| DIMENSIONS in inches [millimeters] | | |
|------------------------------------|----------------------------|---------------|
| CASE SIZE | F LEAD SPACING | STD. QTY/REEL |
| 0.236 x 0.433 [6.0 x 11.0] | 0.098 ⁽¹⁾ [2.5] | 800 |
| 0.315 x 0.472 [8.0 x 12.0] | 0.140 ⁽¹⁾ [3.5] | 700 |
| 0.394 x 0.512 [10.0 x 13.0] | 0.197 [5.0] | 500 |
| 0.394 x 0.630 [10.0 x 16.0] | 0.197 [5.0] | 500 |
| 0.394 x 0.787 [10.0 x 20.0] | 0.197 [5.0] | 500 |

Note
⁽¹⁾ Available as special order



| DIMENSIONS in inches [millimeters] | | | | | |
|--|-------------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|
| ITEM | CASE SIZE (Diameter x Length) | | | | |
| | 0.236 x 0.433 [6.0 x 11.0] | 0.315 x 0.472 [8.0 x 12.0] | 0.394 x 0.512 [10.0 x 13.0] | 0.394 x 0.630 [10.0 x 16.0] | 0.394 x 0.787 [10.0 x 20.0] |
| d - Lead-wire diameter | 0.025 [0.63] | 0.025 [0.63] | 0.025 [0.63] | 0.025 [0.63] | 0.020 [0.5] |
| P - Pitch of component | 0.500 [12.7] | 0.500 [12.7] | 0.500 [12.7] | 0.500 [12.7] | 0.500 [12.7] |
| P ₀ - Feed hole pitch | 0.500 [12.7] | 0.500 [12.7] | 0.500 [12.7] | 0.500 [12.7] | 0.500 [12.7] |
| F - Lead-to-lead distance | 0.197 [5.0] | 0.197 [5.0] | 0.197 [5.0] | 0.197 [5.0] | 0.197 [5.0] |
| K - Clinch height | 0.098 [2.5] | 0.157 [4.0] | n/a | n/a | n/a |
| H - Height of component from tape center | 0.728 [18.5] | 0.787 [20.0] | 0.906 [23.0] | 0.906 [23.0] | 0.906 [23.0] |
| H ₀ - Lead-wire clinch height | 0.630 [16.0] | 0.630 [16.0] | n/a | n/a | n/a |
| W - Tape width | 0.709 [18.0] | 0.709 [18.0] | 0.709 [18.0] | 0.709 [18.0] | 0.709 [18.0] |
| W ₀ - Hold down tape width | 0.591 [15.0] | 0.591 [15.0] | 0.591 [15.0] | 0.591 [15.0] | 0.591 [15.0] |
| D ₀ - Feed hole diameter | 0.157 [4.0] | 0.157 [4.0] | 0.157 [4.0] | 0.157 [4.0] | 0.157 [4.0] |
| t - Total tape thickness | 0.028 [0.7] | 0.028 [0.7] | 0.157 [4.0] | 0.157 [4.0] | 0.157 [4.0] |
| L ₁ - Maximum lead protrusion | 0.118 [3.0] | 0.118 [3.0] | 0.118 [3.0] | 0.118 [3.0] | 0.118 [3.0] |

Note

- Terminal code "I" = tape and reel. Terminal code "+" = tape and ammo. Positive leader is standard. Negative leader is available by special order.

ORDERING EXAMPLE

Electrolytic capacitor 511D series: 511D 157 M 063 CG 4 D

| DESCRIPTION | |
|-------------|--|
| CODE | EXPLANATION |
| 511D | Product type |
| 157 | Capacitance value (150 µF) |
| M | Tolerance (M = ± 20 %) |
| 063 | Voltage rating at 105 °C (063 = 63 V) |
| DF | Can size (see Dimensions table) |
| 4 | Sleeve and sealing (4 = P.V.C. sleeve) |
| D | Packaging (D = bulk; straight leads) |

Note

- For lead (Pb)-free / RoHS compliant products add suffix "E3" to part number.
Example: 511D157M063CG4DE3

| ELECTRICAL DATA AND ORDERING INFORMATION | | | | | | | |
|--|-----------------|--|------------------------|------------------|---------------------------|------------------|-------------------------------------|
| CAPACITANCE (µF) | PART NUMBER | NOMINAL CASE SIZE D x L IN INCHES [mm] | MAX. ESR AT +25 °C (Ω) | | MAX. RIPPLE AT +85 °C (A) | | MAX. IMPEDANCE AT +25 °C (Ω) 100 Hz |
| | | | 120 Hz | 20 kHz TO 40 kHz | 120 Hz | 20 kHz TO 40 kHz | |
| 6.3 WV_{DC} AT +105 °C, SURGE = 8 V | | | | | | | |
| 150.0 | 511D157M6R3AA4D | 0.236 x 0.433 [6.0 x 11.0] | 3.130 | 2.720 | 0.123 | 0.132 | 2.800 |
| 1200.0 | 511D128M6R3CG4D | 0.394 x 0.787 [10.0 x 20.0] | 0.420 | 0.270 | 0.590 | 0.741 | 0.286 |
| 4700.0 | 511D478M6R3EK4D | 0.630 x 0.984 [16.0 x 25.0] | 0.121 | 0.075 | 1.580 | 2.010 | 0.090 |
| 10 000.0 | 511D109M6R3FR4D | 0.630 x 1.417 [16.0 x 36.0] | 0.068 | 0.050 | 2.640 | 3.070 | 0.061 |
| 10 WV_{DC} AT +105 °C, SURGE = 13 V | | | | | | | |
| 100.0 ⁽¹⁾ | 511D107M010AA4D | 0.236 x 0.433 [6.0 x 11.0] | 4.073 | 2.800 | 0.108 | 0.131 | 2.900 |
| 220.0 ⁽¹⁾ | 511D227M010BB4D | 0.315 x 0.472 [8.0 x 12.0] | 1.855 | 1.150 | 0.198 | 0.252 | 1.300 |
| 1000.0 | 511D108M010CG4D | 0.394 x 0.787 [10.0 x 20.0] | 0.407 | 0.290 | 0.603 | 0.715 | 0.290 |
| 3300.0 | 511D338M010EK4D | 0.630 x 0.984 [16.0 x 25.0] | 0.166 | 0.086 | 1.350 | 1.880 | 0.094 |
| 4700.0 | 511D478M010EN4D | 0.630 x 1.260 [16.0 x 32.0] | 0.122 | 0.060 | 1.740 | 2.480 | 0.067 |
| 16 WV_{DC} AT +105 °C, SURGE = 20 V | | | | | | | |
| 150.0 | 511D157M016BB4D | 0.315 x 0.472 [8.0 x 12.0] | 2.433 | 1.250 | 0.173 | 0.241 | 1.250 |
| 470.0 ⁽¹⁾ | 511D477M016CD4D | 0.394 x 0.630 [10.0 x 16.0] | 0.748 | 0.442 | 0.419 | 0.522 | 0.442 |
| 1500.0 | 511D158M016DK4D | 0.492 x 0.984 [12.5 x 25.0] | 0.243 | 0.140 | 0.971 | 1.270 | 0.140 |
| 2200.0 | 511D228M016EK4D | 0.630 x 0.984 [16.0 x 25.0] | 0.176 | 0.090 | 1.310 | 1.840 | 0.098 |
| 3300.0 | 511D338M016EN4D | 0.630 x 1.260 [16.0 x 32.0] | 0.147 | 0.062 | 1.580 | 2.440 | 0.067 |

Note

- ⁽¹⁾ These values are normally stocked. See Original Ratings for more values that are stocked.



| ELECTRICAL DATA AND ORDERING INFORMATION | | | | | | | |
|--|-----------------|--|---------------------------|------------------|------------------------------|------------------|--|
| CAPACITANCE (µF) | PART NUMBER | NOMINAL CASE SIZE D x L IN INCHES [mm] | MAX. ESR AT +25 °C (Ω) | | MAX. RIPPLE AT +85 °C (A) | | MAX. IMPEDANCE AT +25 °C (Ω) 100 Hz |
| | | | 120 Hz | 20 kHz TO 40 kHz | 120 Hz | 20 kHz TO 40 kHz | |
| 20 WV_{DC} AT +105 °C, SURGE = 25 V | | | | | | | |
| 120.0 | 511D127M020BB4D | 0.315 x 0.472 [8.0 x 12.0] | 2.650 | 1.350 | 0.166 | 0.232 | 1.350 |
| 220.0 | 511D227M020CC4D | 0.394 x 0.512 [10.0 x 13.0] | 1.472 | 0.950 | 0.266 | 0.331 | 0.900 |
| 330.0 | 511D337M020CD4D | 0.394 x 0.630 [10.0 x 16.0] | 0.981 | 0.550 | 0.350 | 0.468 | 0.500 |
| 470.0 | 511D477M020CG4D | 0.394 x 0.787 [10.0 x 20.0] | 0.679 | 0.300 | 0.467 | 0.703 | 0.305 |
| 1500.0 | 511D158M020EK4D | 0.630 x 0.984 [16.0 x 25.0] | 0.243 | 0.110 | 1.120 | 1.660 | 0.100 |
| 2200.0 | 511D228M020EN4D | 0.630 x 1.260 [16.0 x 32.0] | 0.163 | 0.080 | 1.510 | 2.150 | 0.080 |
| 3300.0 | 511D338M020FR4D | 0.630 x 1.417 [16.0 x 36.0] | 0.128 | 0.060 | 1.920 | 2.810 | 0.064 |
| 25 WV_{DC} AT +105 °C, SURGE = 32 V | | | | | | | |
| 47.0 ⁽¹⁾ | 511D476M025AA4D | 0.236 x 0.433 [6.0 x 11.0] | 6.120 | 2.940 | 0.089 | 0.127 | 2.950 |
| 100.0 | 511D107M025BB4D | 0.315 x 0.472 [8.0 x 12.0] | 2.914 | 1.350 | 0.158 | 0.232 | 1.350 |
| 1200.0 | 511D128M025EK4D | 0.630 x 0.984 [16.0 x 25.0] | 0.239 | 0.110 | 1.127 | 1.660 | 0.105 |
| 2200.0 | 511D228M025ER4D | 0.630 x 1.417 [16.0 x 36.0] | 0.162 | 0.064 | 1.580 | 2.520 | 0.074 |
| 35 WV_{DC} AT +105 °C, SURGE = 44 V | | | | | | | |
| 120.0 | 511D127M035CC4D | 0.394 x 0.512 [10.0 x 13.0] | 1.830 | 1.010 | 0.239 | 0.323 | 0.980 |
| 330.0 | 511D337M035CG4D | 0.394 x 0.787 [10.0 x 20.0] | 0.677 | 0.305 | 0.468 | 0.697 | 0.310 |
| 1000.0 | 511D108M035EK4D | 0.630 x 0.984 [16.0 x 25.0] | 0.223 | 0.110 | 1.170 | 1.660 | 0.112 |
| 1500.0 | 511D158M035EN4D | 0.630 x 1.260 [16.0 x 32.0] | 0.165 | 0.078 | 1.490 | 2.180 | 0.078 |
| 2200.0 | 511D228M035FR4D | 0.709 x 1.417 [18.0 x 36.0] | 0.121 | 0.060 | 1.980 | 2.810 | 0.062 |
| 40 WV_{DC} AT +105 °C, SURGE = 50 V | | | | | | | |
| 100.0 | 511D107M040CC4D | 0.394 x 0.512 [10.0 x 13.0] | 1.939 | 1.010 | 0.232 | 0.323 | 0.981 |
| 220.0 | 511D227M040CG4D | 0.394 x 0.787 [10.0 x 20.0] | 0.883 | 0.305 | 0.411 | 0.698 | 0.311 |
| 330.0 | 511D337M040DG4D | 0.492 x 0.787 [12.5 x 20.0] | 0.588 | 0.210 | 0.573 | 0.959 | 0.221 |
| 470.0 | 511D477M040DK4D | 0.492 x 0.984 [12.5 x 25.0] | 0.407 | 0.151 | 0.719 | 1.190 | 0.157 |
| 1000.0 | 511D108M040EN4D | 0.630 x 1.260 [16.0 x 32.0] | 0.193 | 0.078 | 1.390 | 2.180 | 0.078 |
| 50 WV_{DC} AT +105 °C, SURGE = 63 V | | | | | | | |
| 47.0 | 511D476M050BB4D | 0.315 x 0.472 [8.0 x 12.0] | 3.884 | 1.510 | 0.137 | 0.221 | 1.450 |
| 120.0 | 511D127M050CD4D | 0.394 x 0.630 [10.0 x 16.0] | 1.320 | 0.466 | 0.302 | 0.509 | 0.488 |
| 270.0 | 511D277M050DG4D | 0.492 x 0.787 [12.5 x 20.0] | 0.601 | 0.221 | 0.567 | 0.937 | 0.231 |
| 1000.0 | 511D108M050ER4D | 0.630 x 1.417 [16.0 x 36.0] | 0.161 | 0.065 | 1.590 | 2.510 | 0.068 |
| 1500.0 | 511D158M050FR4D | 0.709 x 1.417 [18.0 x 36.0] | 0.153 | 0.065 | 1.760 | 2.710 | 0.068 |
| 63 WV_{DC} AT +105 °C, SURGE = 79 V | | | | | | | |
| 47.0 | 511D476M063CC4D | 0.394 x 0.512 [10.0 x 13.0] | 3.076 | 1.170 | 0.184 | 0.299 | 1.110 |
| 150.0 | 511D157M063CG4D | 0.394 x 0.787 [10.0 x 20.0] | 1.010 | 0.331 | 0.385 | 0.671 | 0.341 |
| 470.0 | 511D477M063EK4D | 0.630 x 0.984 [16.0 x 25.0] | 0.307 | 0.125 | 0.995 | 1.560 | 0.125 |
| 1200.0 | 511D128M063FR4D | 0.709 x 1.417 [18.0 x 36.0] | 0.165 | 0.065 | 1.690 | 2.710 | 0.068 |
| 75 WV_{DC} AT +105 °C, SURGE = 90 V | | | | | | | |
| 33.0 | 511D336M075CC4D | 0.394 x 0.512 [10.0 x 13.0] | 4.440 | 1.210 | 0.153 | 0.295 | 1.210 |
| 100.0 | 511D107M075CG4D | 0.394 x 0.787 [10.0 x 20.0] | 1.460 | 0.341 | 0.318 | 0.661 | 0.341 |
| 150.0 | 511D157M075DG4D | 0.492 x 0.787 [12.5 x 20.0] | 1.010 | 0.261 | 0.439 | 0.862 | 0.261 |
| 220.0 | 511D227M075DK4D | 0.492 x 0.984 [12.5 x 25.0] | 0.666 | 0.211 | 0.589 | 1.050 | 0.211 |
| 470.0 | 511D477M075EN4D | 0.630 x 1.260 [16.0 x 32.0] | 0.307 | 0.105 | 1.110 | 1.880 | 0.105 |
| 100 WV_{DC} AT +105 °C, SURGE = 125 V | | | | | | | |
| 4.7 ⁽¹⁾ | 511D475M100AA4D | 0.236 x 0.433 [6.0 x 11.0] | 30.79 | 4.310 | 0.041 | 0.106 | 4.210 |
| 10.0 ⁽¹⁾ | 511D106M100BB4D | 0.314 x 0.472 [8.0 x 12.0] | 14.63 | 1.810 | 0.071 | 0.202 | 1.710 |
| 33.0 | 511D336M100CD4D | 0.394 x 0.630 [10.0 x 16.0] | 4.440 | 0.531 | 0.165 | 0.477 | 0.531 |
| 120.0 | 511D127M100DK4D | 0.492 x 0.984 [12.5 x 25.0] | 1.210 | 0.215 | 0.437 | 1.030 | 0.215 |
| 330.0 | 511D337M100ER4D | 0.630 x 1.260 [16.0 x 32.0] | 0.444 | 0.076 | 0.958 | 2.320 | 0.078 |
| 470.0 | 511D477M100FR4D | 0.709 x 1.417 [18.0 x 36.0] | 0.361 | 0.071 | 1.150 | 2.610 | 0.074 |
| 160 WV_{DC} AT +105 °C, SURGE = 185 V | | | | | | | |
| 10.0 | 511D106M160CD4D | 0.394 x 0.630 [10.0 x 16.0] | 16.09 | 4.910 | 0.086 | 0.157 | 4.910 |
| 22.0 | 511D226M160DG4D | 0.492 x 0.787 [12.5 x 20.0] | 7.330 | 3.210 | 0.162 | 0.245 | 3.210 |
| 33.0 | 511D336M160DK4D | 0.492 x 0.984 [12.5 x 25.0] | 4.880 | 2.250 | 0.216 | 0.319 | 2.250 |
| 100.0 | 511D107M160ER4D | 0.630 x 1.260 [16.0 x 32.0] | 1.610 | 0.531 | 0.504 | 0.876 | 0.531 |

Note

⁽¹⁾ These values are normally stocked. See Original Ratings for more values that are stocked.



| ELECTRICAL DATA AND ORDERING INFORMATION | | | | | | | |
|--|-----------------|--|------------------------------------|------------------|------------------------------|------------------|---|
| CAPACITANCE (μ F) | PART NUMBER | NOMINAL CASE SIZE D x L IN INCHES [mm] | MAX. ESR AT +25 °C (Ω) | | MAX. RIPPLE AT +85 °C (A) | | MAX. IMPEDANCE AT +25 °C (Ω) 100 Hz |
| | | | 120 Hz | 20 kHz TO 40 kHz | 120 Hz | 20 kHz TO 40 kHz | |
| 200 WV_{DC} AT +105 °C, SURGE = 225 V | | | | | | | |
| 1.5 | 511D155M200AA4D | 0.236 x 0.433 [6.0 x 11.0] | 110.010 | 33.110 | 0.021 | 0.038 | 33.010 |
| 22.0 | 511D226M200DG4D | 0.492 x 0.787 [12.5 x 20.0] | 7.330 | 3.210 | 0.162 | 0.245 | 3.210 |
| 33.0 | 511D336M200DK4D | 0.492 x 0.984 [12.5 x 25.0] | 4.880 | 2.250 | 0.216 | 0.319 | 2.250 |
| 47.0 | 511D476M200EK4D | 0.630 x 0.984 [16.0 x 25.0] | 3.384 | 1.210 | 0.299 | 0.501 | 1.210 |
| 120.0 | 511D127M200FR4D | 0.709 x 1.417 [18.0 x 36.0] | 1.420 | 0.481 | 0.577 | 0.991 | 0.491 |
| 250 WV_{DC} AT +105 °C, SURGE = 275 V | | | | | | | |
| 10.0 | 511D106M250CG4D | 0.394 x 0.787 [10.0 x 20.0] | 16.090 | 3.760 | 0.096 | 0.198 | 3.760 |
| 33.0 | 511D336M250EK4D | 0.630 x 0.984 [16.0 x 25.0] | 4.880 | 1.270 | 0.249 | 0.489 | 1.270 |
| 47.0 | 511D476M250EN4D | 0.630 x 1.260 [16.0 x 32.0] | 3.380 | 0.721 | 0.331 | 0.717 | 0.721 |

Note

(1) These values are normally stocked. See Original Ratings for more values that are stocked.

| ORIGINAL RATINGS | | |
|--|-----------|-----------------|
| CAPACITANCE (μ F) | CASE CODE | PART NUMBER |
| 6.3 WV_{DC} AT +105 °C, SURGE = 8 V | | |
| 470.0 | CC | 511D477M6R3CC4D |
| 1000.0 | CG | 511D108M6R3CG4D |
| 2200.0 | DK | 511D228M6R3DK4D |
| 10 WV_{DC} AT +85 °C, SURGE = 13 V | | |
| 470.0 | CD | 511D477M010CD4D |
| 1000.0 | DG | 511D108M010DG4D |
| 4700.0 | ER | 511D478M010ER4D |
| 16 WV_{DC} AT +105 °C, SURGE = 20 V | | |
| 47.0 (1) | AA | 511D476M016AA4D |
| 100.0 (1) | BB | 511D107M016BB4D |
| 220.0 | CC | 511D227M016CC4D |
| 25 WV_{DC} AT +105 °C, SURGE = 32 V | | |
| 220.0 | CD | 511D227M025CD4D |
| 470.0 | DG | 511D477M025DG4D |
| 1000.0 | EK | 511D108M025EK4D |
| 35 WV_{DC} AT +105 °C, SURGE = 44 V | | |
| 22.0 | AA | 511D226M035AA4D |
| 47.0 | BB | 511D476M035BB4D |
| 100.0 (1) | CC | 511D107M035CC4D |
| 220.0 | CG | 511D227M035CG4D |
| 470.0 | DK | 511D477M035DK4D |
| 1000.0 | EN | 511D108M035EN4D |
| 50 WV_{DC} AT +105 °C, SURGE = 63 V | | |
| 47.0 | CC | 511D476M050CC4D |
| 220.0 | DK | 511D227M050DK4D |
| 63 WV_{DC} AT +105 °C, SURGE = 70 V | | |
| 10.0 (1) | AA | 511D106M063AA4D |
| 22.0 | BB | 511D226M063BB4D |
| 47.0 (1) | CD | 511D476M063CD4D |
| 100.0 | CG | 511D107M063CG4D |
| 220.0 | EK | 511D227M063EK4D |
| 470.0 | EN | 511D477M063EN4D |
| 100 WV_{DC} AT +105 °C, SURGE = 125 V | | |
| 22.0 | CD | 511D226M100CD4D |
| 47.0 | CG | 511D476M100CG4D |
| 220.0 | EN | 511D227M100EN4D |

Note

(1) These values are normally stocked.

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