

## Aluminum Capacitors 105 °C, Miniature, Radial Lead


**FEATURES**

- Improved SMPS output capacitors
- Highest ripple current ratings per case size
- High CV
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



| QUICK REFERENCE DATA                        |  |
|---|--|
| DESCRIPTION                                 | VALUE  |
| Nominal case size<br>Ø D x L in inches [mm] | 0.394 x 0.472 [10.0 x 12.0]<br>to 0.709 x 1.575 [18.0 x 40.0]  |
| Operating temperature                       | - 55 °C to + 105 °C  |
| Rated capacitance range, C <sub>R</sub>     | 33 µF to 6800 µF   |
| Tolerance on C <sub>R</sub>                 | ± 20 %   |
| Rated voltage range, U <sub>R</sub>         | 6.3 WV <sub>DC</sub> to 63 WV <sub>DC</sub>  |
| Termination                                 | 2 and 3 radial leads and axial mount.  |
| Life validation test at 105 °C              | 4000 h (≥ 0.512" [13.0] diameter):<br>3000 h (0.394" [10.0] diameter):<br>ΔCAP ≤ 20 % (6.3 WV <sub>DC</sub><br>to 25 WV <sub>DC</sub> ),<br>≤ 15 % (40 WV <sub>DC</sub> to 63 WV <sub>DC</sub> )<br>from initial measurement.<br>ΔESR ≤ 1.3 x initial<br>specified limit.<br>ΔDCL ≤ 2 x initial specified limit. |
| Shelf life at 105 °C                        | 1000 h: ΔCAP ≤ 20 %<br>(6.3 WV <sub>DC</sub> to 25 WV <sub>DC</sub> ),<br>≤ 15 % (40 WV <sub>DC</sub> to 63 WV <sub>DC</sub> )<br>from initial measurements.<br>ΔESR ≤ 1.3 x initial<br>specified limit.   |
| DC leakage current                          | I = 0.01 CV, 2 min charge time.<br>I = 0.03 CV, 1 min charge time.<br>I in µA, C in µF, V in Volts   |

| RIPPLE CURRENT MULTIPLIERS |          |             |            |           |             |
|----------------------------|----------|-------------|------------|-----------|-------------|
| TEMPERATURE                |          |             |            |           |             |
| AMBIENT TEMPERATURE        |          | MULTIPLIERS |            |           |             |
| + 105 °C                   |          | 1.0         |            |           |             |
| + 85 °C                    |          | 2.2         |            |           |             |
| + 75 °C                    |          | 2.7         |            |           |             |
| ≤ + 65 °C                  |          | 3.0         |            |           |             |
| FREQUENCY (Hz)             |          |             |            |           |             |
| WV <sub>DC</sub>           | 50 TO 60 | 100 TO 120  | 300 TO 400 | 1K TO 19K | 20K TO 200K |
| 6.3 to 63                  | 0.60     | 0.70        | 0.75       | 0.82      | 1.0         |

| LOW TEMPERATURE PERFORMANCE                               |                 |                 |                 |                 |
|---|-----------------|-----------------|-----------------|-----------------|
| CAPACITANCE RATIO C - 55 °C / C + 25 °C MINIMUM AT 120 Hz |                 |                 |                 |                 |
| MAXIMUM CAPACITANCE CHANGE                                | VOLTAGE         | MULTIPLIER      |                 |                 |
|   |                 | 6.3 V to 16 V   | 0.75            |                 |
|   | 25 V to 63 V    | 0.85            |                 |                 |
| MAXIMUM IMPEDANCE CHANGE                                  | VOLTAGE         | MULTIPLIER      |                 |                 |
|   |                 | 6.3 V to 16 V   | 2.0             |                 |
|   | 25 V to 63 V    | 1.5             |                 |                 |
| ESL (TYPICAL VALUES AT 1 MHz TO 10 MHz)                   |                 |                 |                 |                 |
| NOMINAL DIAMETER  | 0.394<br>[10.0] | 0.512<br>[13.0] | 0.630<br>[16.0] | 0.709<br>[18.0] |
| TYPICAL ESL (nH)  | 4.0             | 7.0             | 10.0            | 12.0            |

**BULK SPECIFICATIONS** in millimeters

**TERMINAL CODE C**

**TERMINAL CODE D**

**TERMINAL CODE J**

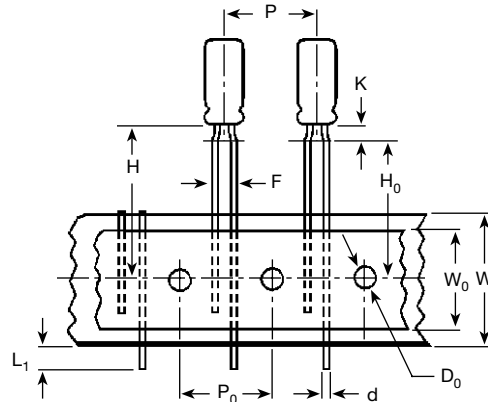
**TERMINAL CODE O**

**Notes**

- ⊕ Positive terminal
- ⊖ Negative terminal
- Ⓝ No charge potential

| <b>DIMENSIONS</b> 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.)     | $S \pm 0.024$<br>[0.60] | $T \pm 0.020$<br>[0.50] | NOMINAL       | AWG |
| 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  |
| DM  | 0.492 [12.5] | 1.043 [26.5] | 0.512 [13.0]   | 1.102 [28.0] | 0.512 [13.0]   | 1.161 [29.5] | 0.197 [5.0]             | 0.098 [2.5]             | 0.032 [0.81]  | 20  |
| DT  | 0.492 [12.5] | 1.319 [33.5] | 0.512 [13.0]   | 1.346 [34.2] | 0.512 [13.0]   | 1.417 [36.0] | 0.197 [5.0]             | 0.098 [2.5]             | 0.032 [0.81]  | 20  |
| DS  | 0.492 [12.5] | 1.673 [42.5] | 0.512 [13.0]   | 1.720 [43.7] | 0.512 [13.0]   | 1.791 [45.5] | 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  |
| EU  | 0.630 [16.0] | 1.575 [40.0] | 0.650 [16.5]   | 1.642 [41.7] | 0.650 [16.5]   | 1.669 [42.4] | 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  |
| FV  | 0.709 [18.0] | 1.575 [40.0] | 0.728 [18.5]   | 1.653 [42.0] | 0.728 [18.5]   | 1.693 [43.0] | 0.295 [7.5]             | 0.150 [3.8]             | 0.032 [0.81]  | 20  |

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

**Formed Leads**


| <b>DIMENSIONS</b> in inches [millimeters] <b>AND PACKAGING QUANTITIES</b> |                       |                      |
|---|-----------------------|----------------------|
| <b>CASE SIZE</b>  | <b>F LEAD SPACING</b> | <b>STD. QTY/REEL</b> |
| 0.236 x 0.453 [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 (Straight) Leads**


| <b>DIMENSIONS</b> in inches [millimeters] <b>AND PACKAGING QUANTITIES</b> |                            |                      |
|---|----------------------------|----------------------|
| <b>CASE SIZE</b>  | <b>F LEAD SPACING</b>      | <b>STD. QTY/REEL</b> |
| 0.236 x 0.453 [6.0 x 11.0]  | 0.098 [2.5]                | 800                  |
| 0.315 x 0.472 [8.0 x 12.0]  | 0.140 <sup>(1)</sup> [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**
<sup>(1)</sup> Available as special order.



| DIMENSIONS in inches [millimeters]       |                               |                               |                                |                                |                                |
|--|-------------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|
| ITEM                                     | CASE SIZE (DIAMETER x LENGTH) |                               |                                |                                |                                |
|  | 0.236 x 0.433<br>[6.0 x 11.0] | 0.315 x 0.472<br>[8.0 x 12.0] | 0.394 x 0.512<br>[10.0 x 13.0] | 0.394 x 0.630<br>[10.0 x 16.0] | 0.394 x 0.787<br>[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]                   | 0.025 [0.63]                   |
| 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 <sub>0</sub> - 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 <sub>0</sub> - 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 <sub>0</sub> - 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 <sub>0</sub> - 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]                   | 0.028 [0.7]                    | 0.028 [0.7]                    | 0.028 [0.7]                    |
| L <sub>1</sub> - 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 "l" = Tape and reel. Terminal Code "+" = Tape and ammo. Positive leader is standard. Negative leader is available by special order.

**ORDERING EXAMPLE**

Electrolytic capacitor 678D series: 678D 108 M 6R3 DG 3 D

| DESCRIPTION |   |
|-------------|---|
| CODE        | EXPLANATION   |
| 678D        | Product type  |
| 108         | Capacitance value (1000 µF)                             |
| M           | Tolerance (M = ± 20 %)                                  |
| 6R3         | Voltage rating at 105 °C (6R3 = 6.3 V)                  |
| DG          | Can size (see Dimensions table)                         |
| 3           | Sleeve and sealing (3 = P.V.C. sleeve w/epoxy end seal) |
| D           | Terminal code/packaging (D = Bulk; straight leads)      |

**Note**

- For lead (Pb)-free/RoHS compliant products add suffix "E3" to part number. Example: 678D108M6R3DG3DE3

| ELECTRICAL DATA AND ORDERING INFORMATION          |                 |                             |                          |        |   |                                       |
|---|-----------------|-----------------------------|--------------------------|--------|---|---------------------------------------|
| CAPACITANCE (µF)                                  | PART NUMBER     | NOMINAL CASE SIZE D x L     | MAX. ESR AT + 25 °C (mΩ) |        | MAX. RIPPLE AT + 105 °C (A) 20 kHz to 100 kHz | MAX. IMPEDANCE AT + 25 °C (mΩ) 100 Hz |
|   |                 |                             | 20 Hz                    | 20 kHz |   |                                       |
| <b>6.3 WV<sub>DC</sub> at 105 °C, SURGE = 9 V</b> |                 |                             |                          |        |   |                                       |
| 330.0   | 678D337M6R3CC3D | 0.394 x 0.512 [10.0 x 13.0] | 0.540                    | 0.213  | 0.36  | 0.213                                 |
| 470.0   | 678D477M6R3CD3D | 0.394 x 0.630 [10.0 x 16.0] | 0.340                    | 0.133  | 0.49  | 0.132                                 |
| 1000.0  | 678D108M6R3DG3D | 0.492 x 0.787 [12.5 x 20.0] | 0.200                    | 0.071  | 0.83  | 0.070                                 |
| 2200.0  | 678D228M6R3EK3D | 0.630 x 0.984 [16.0 x 25.0] | 0.110                    | 0.041  | 1.36  | 0.045                                 |
| 3300.0  | 678D338M6R3DS3D | 0.492 x 1.673 [12.5 x 42.5] | 0.067                    | 0.031  | 1.67  | 0.032                                 |
| 4700.0  | 678D478M6R3FR3D | 0.709 x 1.417 [18.0 x 36.0] | 0.066                    | 0.029  | 2.02  | 0.031                                 |
| <b>10 WV<sub>DC</sub> AT 105 °C, SURGE = 13 V</b> |                 |                             |                          |        |   |                                       |
| 330.0   | 678D337M010CD3D | 0.394 x 0.630 [10.0 x 16.0] | 0.350                    | 0.135  | 0.46  | 0.134                                 |
| 470.0   | 678D477M010CG3D | 0.394 x 0.787 [10.0 x 20.0] | 0.235                    | 0.092  | 0.63  | 0.090                                 |
| 1000.0 <sup>(1)</sup>                             | 678D108M010DM3D | 0.492 x 1.043 [12.5 x 26.5] | 0.120                    | 0.062  | 0.98  | 0.061                                 |
| 2200.0  | 678D228M010EK3D | 0.630 x 0.984 [16.0 x 25.0] | 0.115                    | 0.042  | 1.52  | 0.046                                 |
| 3300.0  | 678D338M010EN3D | 0.630 x 1.260 [16.0 x 32.0] | 0.085                    | 0.038  | 1.56  | 0.041                                 |
| 4700.0  | 678D487M010FR3D | 0.709 x 1.417 [18.0 x 36.0] | 0.070                    | 0.031  | 1.97  | 0.033                                 |



| ELECTRICAL DATA AND ORDERING INFORMATION          |                 |                             |                                      |        |   |   |
|---|-----------------|-----------------------------|--------------------------------------|--------|---|---|
| CAPACITANCE<br>( $\mu$ F)                         | PART NUMBER     | NOMINAL CASE SIZE<br>D x L  | MAX. ESR<br>AT + 25 °C (m $\Omega$ ) |        | MAX. RIPPLE<br>AT + 105 °C (A)<br>20 kHz to 100 kHz | MAX.<br>IMPEDANCE<br>AT + 25 °C (m $\Omega$ )<br>100 Hz |
|   |                 |                             | 20 Hz                                | 20 kHz |   |   |
| <b>16 WV<sub>DC</sub> AT 105 °C, SURGE = 20 V</b> |                 |                             |                                      |        |   |   |
| 220.0 <sup>(1)</sup>                              | 678D227M016CC3D | 0.394 x 0.512 [10.0 x 13.0] | 0.585                                | 0.217  | 0.40  | 0.217   |
| 330.0 <sup>(1)</sup>                              | 678D337M016CD3D | 0.394 x 0.630 [10.0 x 16.0] | 0.370                                | 0.137  | 0.52  | 0.136   |
| 470.0   | 678D477M016CG3D | 0.394 x 0.787 [10.0 x 20.0] | 0.250                                | 0.098  | 0.70  | 0.094   |
| 1000.0 <sup>(1)</sup>                             | 678D108M016DM3D | 0.492 x 1.043 [12.5 x 26.5] | 0.130                                | 0.066  | 1.00  | 0.065   |
| 2200.0  | 678D228M016ER3D | 0.630 x 1.417 [16.0 x 36.0] | 0.074                                | 0.032  | 1.78  | 0.034   |
| 3300.0  | 678D338M016FR3D | 0.709 x 1.417 [18.0 x 36.0] | 0.074                                | 0.032  | 1.94  | 0.034   |
| <b>20 WV<sub>DC</sub> AT 105 °C, SURGE = 30 V</b> |                 |                             |                                      |        |   |   |
| 220.0   | 678D227M020CD3D | 0.394 x 0.630 [10.0 x 16.0] | 0.380                                | 0.150  | 0.41  | 0.148   |
| 330.0   | 678D337M020CG3D | 0.394 x 0.787 [10.0 x 20.0] | 0.270                                | 0.100  | 0.61  | 0.098   |
| 470.0   | 678D477M020DG3D | 0.492 x 0.787 [12.5 x 20.0] | 0.250                                | 0.077  | 0.45  | 0.075   |
| 1000.0  | 678D108M020DT3D | 0.492 x 1.280 [12.5 x 33.5] | 0.115                                | 0.048  | 0.78  | 0.045   |
| 2200.0  | 678D228M020ER3D | 0.630 x 1.417 [16.0 x 36.0] | 0.077                                | 0.032  | 1.80  | 0.034   |
| 3300.0  | 678D338M020FV3D | 0.709 x 1.575 [18.0 x 40.0] | 0.061                                | 0.026  | 2.25  | 0.028   |
| <b>25 WV<sub>DC</sub> AT 105 °C, SURGE = 35 V</b> |                 |                             |                                      |        |   |   |
| 100.0 <sup>(1)</sup>                              | 678D107M025CC3D | 0.394 x 0.512 [10.0 x 13.0] | 0.700                                | 0.250  | 0.32  | 0.250   |
| 220.0   | 678D227M025CG3D | 0.394 x 0.787 [10.0 x 20.0] | 0.300                                | 0.105  | 0.59  | 0.100   |
| 330.0 <sup>(1)</sup>                              | 678D337M025DG3D | 0.492 x 0.787 [12.5 x 20.0] | 0.270                                | 0.078  | 0.79  | 0.076   |
| 470.0 <sup>(1)</sup>                              | 678D477M025DM3D | 0.492 x 1.043 [12.5 x 26.5] | 0.160                                | 0.067  | 0.97  | 0.068   |
| 1000.0  | 678D108M025DS3D | 0.492 x 1.673 [12.5 x 42.5] | 0.090                                | 0.034  | 1.60  | 0.036   |
| 2200.0  | 678D228M025FV3D | 0.709 x 1.575 [18.0 x 40.0] | 0.062                                | 0.026  | 2.22  | 0.028   |
| <b>40 WV<sub>DC</sub> AT 105 °C, SURGE = 55 V</b> |                 |                             |                                      |        |   |   |
| 47.0  | 678D476M040CC3D | 0.394 x 0.512 [10.0 x 13.0] | 0.950                                | 0.265  | 0.28  | 0.265   |
| 100.0 <sup>(1)</sup>                              | 678D107M040CD3D | 0.394 x 0.630 [10.0 x 16.0] | 0.580                                | 0.165  | 0.38  | 0.165   |
| 330.0 <sup>(1)</sup>                              | 678D337M040DM3D | 0.492 x 1.043 [12.5 x 26.5] | 0.200                                | 0.068  | 0.93  | 0.070   |
| 470.0 <sup>(1)</sup>                              | 678D477M040EK3D | 0.630 x 0.984 [16.0 x 25.0] | 0.133                                | 0.046  | 1.28  | 0.050   |
| 1000.0  | 678D108M040ER3D | 0.630 x 1.417 [16.0 x 36.0] | 0.080                                | 0.033  | 1.76  | 0.035   |
| <b>50 WV<sub>DC</sub> AT 105 °C, SURGE = 75 V</b> |                 |                             |                                      |        |   |   |
| 47.0  | 678D476M050CC3D | 0.394 x 0.512 [10.0 x 13.0] | 1.250                                | 0.275  | 0.28  | 0.275   |
| 100.0 <sup>(1)</sup>                              | 678D107M050CG3D | 0.394 x 0.787 [10.0 x 20.0] | 0.520                                | 0.115  | 0.57  | 0.112   |
| 220.0   | 678D227M050DM3D | 0.472 x 1.043 [12.5 x 26.5] | 0.240                                | 0.069  | 0.93  | 0.071   |
| 330.0   | 678D337M050EK3D | 0.630 x 0.984 [16.0 x 25.0] | 0.150                                | 0.048  | 1.26  | 0.052   |
| 470.0   | 678D477M050DS3D | 0.492 x 1.673 [12.5 x 42.5] | 0.110                                | 0.036  | 1.55  | 0.039   |
| 1000.0  | 678D108M050FV3D | 0.709 x 1.575 [18.0 x 40.0] | 0.077                                | 0.028  | 2.15  | 0.032   |
| <b>63 WV<sub>DC</sub> AT 105 °C, SURGE = 80 V</b> |                 |                             |                                      |        |   |   |
| 33.0  | 678D336M063CC3D | 0.394 x 0.512 [10.0 x 13.0] | 1.600                                | 0.288  | 0.27  | 0.288   |
| 47.0  | 678D476M063CD3D | 0.394 x 0.630 [10.0 x 16.0] | 1.000                                | 0.180  | 0.37  | 0.180   |
| 100.0   | 678D107M063DG3D | 0.492 x 0.787 [12.5 x 20.0] | 0.450                                | 0.093  | 0.72  | 0.090   |
| 220.0   | 678D227M063DT3D | 0.492 x 1.280 [12.5 x 33.5] | 0.160                                | 0.055  | 1.10  | 0.054   |
| 220.0 <sup>(1)</sup>                              | 678D227M063EK3D | 0.630 x 0.984 [16.0 x 25.0] | 0.170                                | 0.050  | 1.23  | 0.054   |
| 330.0   | 678D337M063DS3D | 0.492 x 1.673 [12.5 x 42.5] | 0.130                                | 0.038  | 1.51  | 0.040   |
| 470.0   | 678D477M063ER3D | 0.630 x 1.417 [16.0 x 36.0] | 0.120                                | 0.035  | 1.70  | 0.038   |

**Note**

(1) These values are normally stocked.



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- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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