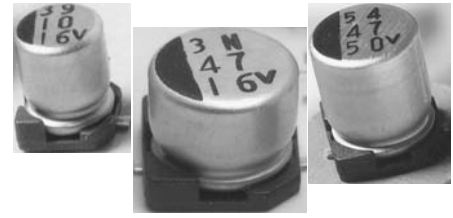


FEATURES

- Cylindrical leadless type for surface mounting.
- Long life, 5,000* hours @ 105°C.
*(3,000 hours for 10 x 13.5) (4,000 hours for 10 x 17.5)
- 4 Terminal for extra stability.
- Solvent resistant (2 minutes).
- Designed for automatic mounting and reflow soldering.

Note: Unless otherwise specified here, the capacitor shall conform to JIC-C-5141 and 5102.

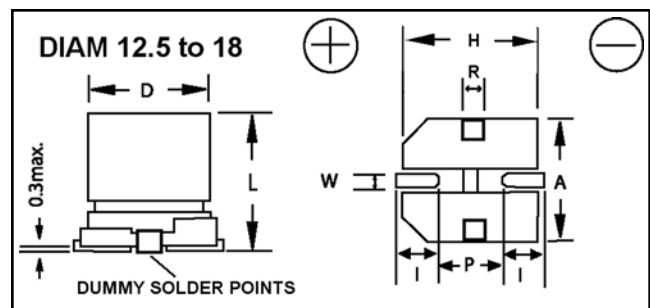
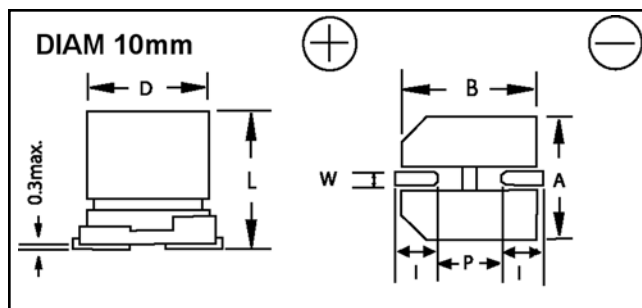


PART NUMBERING

| Part Number Example: MXLH-160/470M16X17TR13F | | | | | | | | | |
|---|---|------------------|---|------------------------|----------------|-------|----------------|-----------|----------------|
| MXLH | - | 160 | / | 470 | M | 16X17 | TR | 13 | F |
| Type | | Rated DC Voltage | | Capacitance Code (μF)* | Tolerance Code | Size | Package Code** | Reel Size | RoHs Compliant |
| * Capacitance Code: First two digits represent significant figure, third digit represents multiplier (number of zeros). | | | | | | | | | |
| ** Package Code: TR = Tape & Reel. | | | | | | | | | |

SPECIFICATIONS

| Performance Characteristics | | | | | | | |
|--|----------------------|-----|-----|-----|-----|-----|-----|
| Operating Temperature Range | -25°C ~ +105°C. | | | | | | |
| Voltage Range | 160VDC ~ 450VDC. | | | | | | |
| Capacitance Range | 2.2μF ~ 100μF. | | | | | | |
| Capacitance Tolerance | ±20%. | | | | | | |
| Maximum Dissipation Factor (20°C, 120Hz) | Rated Voltage (WVDC) | 160 | 200 | 250 | 350 | 400 | 450 |
| | DF % | 15 | 15 | 15 | 20 | 24 | 24 |
| Maximum Leakage Current (20°C) (after 2 minutes) | 0.06CV + 10μA. | | | | | | |



DIMENSIONS (mm)

| Case Size | dØ ± 0.5 | L ± 0.5 | A ± 0.2 | B ± 0.2 | I ± 0.3 | W | P ± 0.2 |
|-------------|----------|---------|---------|---------|---------|-----------|---------|
| 10 x 13.5 | 10 | 14 | 10.3 | 10.3 | 3.5 | 0.7 - 1.1 | 4.6 |
| 10 x 17.5 | 10 | 18 | 10.3 | 10.3 | 3.5 | 0.7 - 1.1 | 4.6 |
| 12.5 x 16.5 | 12.5 | 17 | 13.5 | 12.8 | 4.7 | 0.6 - 1.2 | 4.4 |
| 16 x 16.5 | 16 | 17 | 17 | 16.3 | 5.5 | 0.9 - 1.5 | 6.7 |
| 16 x 21.5 | 16 | 22 | 17 | 16.3 | 5.5 | 0.9 - 1.5 | 6.7 |
| 18 x 16.5 | 18 | 17 | 19 | 18.8 | 6.5 | 0.9 - 1.5 | 6.7 |
| 18 x 21.5 | 18 | 22 | 19 | 18.8 | 6.5 | 0.9 - 1.5 | 6.7 |

STANDARD PRODUCT TABLE

| Cap. (μF) | Code | WVDC | | | | | |
|-----------|------|------------------------|-------------|-----------|-----------|-----------|-------------|
| | | 160 | 200 | 250 | 350 | 400 | 450 |
| 2.2 | 2R2 | | | | | | 10 x 13.5 |
| 3.3 | 3R3 | | | | | 10 x 13.5 | 10 x 17.5 |
| 4.7 | 4R7 | | | | | 10 x 17.5 | 12.5 x 16.5 |
| 10 | 100 | 10 x 13.5 | | 10 x 17.5 | 16 x 16.5 | 16 x 16.5 | 18 x 16.5 |
| 22 | 220 | | 12.5 x 16.5 | 16 x 16.5 | 18 x 16.5 | 16 x 21.5 | 18 x 21.5 |
| 33 | 330 | 12.5 x 16.5 | 16 x 16.5 | 18 x 16.5 | 16 x 21.5 | 18 x 21.5 | |
| 47 | 470 | 16 x 16.5 | 18 x 16.5 | 16 x 21.5 | 18 x 21.5 | | |
| 68 | 680 | 16 x 21.5 18 x 16.5 | 16 x 21.5 | 18 x 21.5 | | | |
| 100 | 101 | 18 x 21.5 | 18 x 21.5 | | | | |

MAXIMUM RIPPLE (mA rms @ 120Hz & 105°C)

| Cap. (μF) | WVDC | | | | | |
|-----------|------|------|-----|-----|-----|-----|
| | 160 | 200 | 250 | 350 | 400 | 450 |
| 2.2 | | | | | | 29 |
| 3.3 | | | | | 40 | 41 |
| 4.7 | | | | | 50 | 49 |
| 10 | 70 | | 88 | 270 | 250 | 310 |
| 22 | | 470 | 560 | 350 | 410 | 560 |
| 33 | 470 | 600 | 560 | 480 | 600 | |
| 47 | 600 | 600 | 710 | 670 | | |
| 68 | 750 | 750 | 990 | | | |
| 100 | 1060 | 1060 | | | | |

MAXIMUM ESR (Ω @ 120Hz & 20°C)

| Cap. (μF) | WVDC | | | | | |
|-----------|------|------|------|------|------|------|
| | 160 | 200 | 250 | 350 | 400 | 450 |
| 2.2 | | | | | | 181 |
| 3.3 | | | | | 121 | 121 |
| 4.7 | | | | | 84.8 | 84.8 |
| 10 | 24.9 | | 24.9 | 33.2 | 39.9 | 39.9 |
| 22 | | 11.3 | 11.3 | 15.1 | 18.1 | 18.1 |
| 33 | 7.55 | 7.55 | 7.55 | 10.1 | 12.1 | |
| 47 | 5.3 | 5.3 | 5.3 | 7.07 | | |
| 68 | 3.66 | 3.66 | 3.66 | | | |
| 100 | 2.49 | 2.49 | | | | |