

# XMPL



## Aluminum Polymer Capacitors

SMD Solid Conductive (multilayer-type)

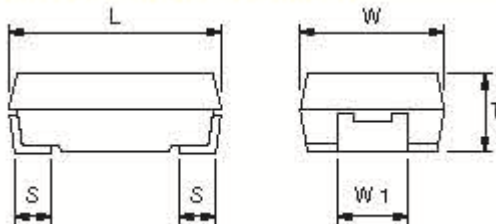
### FEATURES

Small Size – Low Impedance – Halogen Free Epoxy – RoHS Compliant – Stable with Temperature, Applied Voltage and Frequency

### APPLICATIONS

Decoupling – Noise Suppression

|   |              |  |  |   |     |                  |      |    |  |
|---|--------------|--|--|---|-----|------------------|------|----|--|
| <b>Operating Temperature Range</b>      |              | <b>-40°C to +105°C</b>   |  |   |     |                  |      |    |  |
| <b>Capacitance Tolerance</b>            |              | <b>±20% (M), -35% +10% (Y)</b><br><b>120 Hz, 20°C</b>                      |  |   |     |                  |      |    |  |
| <b>Surge Voltage</b>                    | <b>WVDC</b>  | 2  | 2.5                                      | 4 | 6.3 | 10               | 12.5 | 16 |  |
|   | <b>SVDC</b>  | 1.25*WVDC  |  |   |     |                  |      |    |  |
| <b>Dissipation Factor</b>               | <b>WVDC</b>  | 2  | 2.5                                      | 4 | 6.3 | 10               | 12.5 | 16 |  |
|   | <b>Tan δ</b> | .06  |  |   |     |                  |      |    |  |
| <b>Leakage Current (25°C) MAX</b>       |              | <b>Time</b>  | <b>≤10 VDC</b>                           |   |     | <b>≥12.5 VDC</b> |      |    |  |
|   |              | <b>2 Minutes</b>   | 0.04CV                                   |   |     | 0.1CV            |      |    |  |
| <b>Load Life</b>                        |              | <b>1000 hours at 105°C with rated WVDC applied</b>                         |  |   |     |                  |      |    |  |
|   |              | <b>Capacitance Change</b>  | ≤10% of initial measured value           |   |     |                  |      |    |  |
|   |              | <b>Dissipation Factor</b>  | ≤100% of maximum specified value         |   |     |                  |      |    |  |
|   |              | <b>Leakage Current</b>   | ≤100% of maximum specified value         |   |     |                  |      |    |  |
| <b>Moisture Resistance Test</b>         |              | <b>500 hours at 60°C and 90% relative Humidity with no voltage applied</b> |  |   |     |                  |      |    |  |
|   |              | <b>Capacitance Change</b>  | ≤20% to +70% of initially measured value |   |     |                  |      |    |  |
|   |              | <b>Dissipation Factor</b>  | ≤200% of maximum specified value         |   |     |                  |      |    |  |
|   |              | <b>Leakage Current</b>   | ≤100% of maximum specified value         |   |     |                  |      |    |  |
| <b>Moisture Sensitivity Level (MSL)</b> |              | 3  |  |   |     |                  |      |    |  |



| Case size | EIA Code | L±0.2 | W±0.2 | T±0.2 | W1±0.1 | S±0.3 |
|-----------|----------|-------|-------|-------|--------|-------|
| G19       | 7343     | 7.3   | 4.3   | 1.9   | 2.4    | 1.3   |
| G28       | 7343     | 7.3   | 4.3   | 2.8   | 2.4    | 1.3   |



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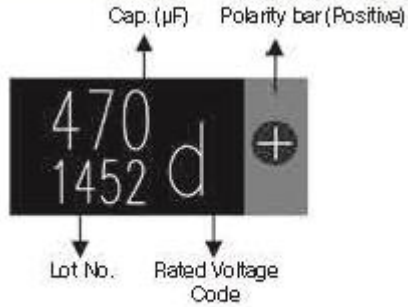
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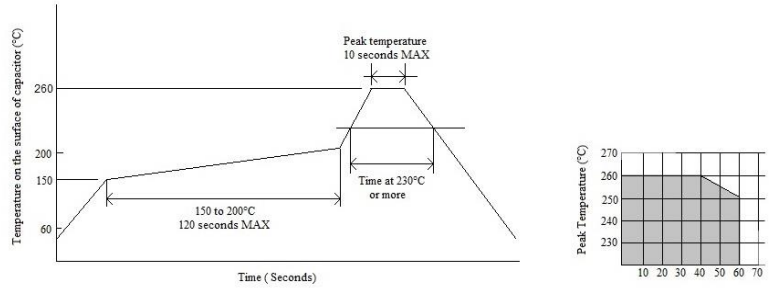


### Markings



Example: 470 $\mu\text{F}$ /2V

### Recommended soldering profile



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# XMPL

+105°C Multi-layer Low Profile Chip

| Capacitance (µF) | WVDC | IC PART NUMBER  | Maximum ESR (Ω) 120 Hz, +20°C | Maximum ESR (mΩ) 100 kHz, +20°C | Leakage Current (µA) | Maximum RMS Ripple Current (A) 100 kHz, +105°C | Dimensions LxHxT (mm) |
|------------------|------|-----------------|-------------------------------|---------------------------------|----------------------|--|-----------------------|
| 6.8              | 16   | 685XMPL016MG19  | 14.6282                       | 70                              | 32.64                | 2  | 7.3x4.3x1.9           |
| 10               | 6.3  | 106XMPL6R3MG19  | 9.9472                        | 40                              | 6.3                  | 1  | 7.3x4.3x1.9           |
| 10               | 10   | 106XMPL010MG19  | 9.9472                        | 45                              | 30                   | 1  | 7.3x4.3x1.9           |
| 10               | 12   | 106XMPL012MG19  | 9.9472                        | 55                              | 37.5                 | 1  | 7.3x4.3x1.9           |
| 10               | 16   | 106XMPL016MG19  | 9.9472                        | 40                              | 48                   | 2  | 7.3x4.3x1.9           |
| 15               | 12   | 156XMPL012MG19  | 6.6315                        | 45                              | 56.25                | 1  | 7.3x4.3x1.9           |
| 15               | 16   | 156XMPL016MG19  | 6.6315                        | 40                              | 72                   | 3  | 7.3x4.3x1.9           |
| 22               | 6.3  | 226XMPL6R3MG19  | 4.5214                        | 35                              | 13.86                | 1  | 7.3x4.3x1.9           |
| 22               | 10   | 226XMPL010MG19  | 4.5214                        | 40                              | 66                   | 1.8  | 7.3x4.3x1.9           |
| 22               | 12   | 226XMPL012MG19  | 4.5214                        | 30                              | 82.5                 | 1.8  | 7.3x4.3x1.9           |
| 22               | 16   | 226XMPL016MG19  | 4.5214                        | 40                              | 105.6                | 3  | 7.3x4.3x1.9           |
| 22               | 16   | 226XMPL016MG28  | 4.5214                        | 40                              | 105.6                | 3  | 7.3x4.3x2.8           |
| 33               | 6.3  | 336XMPL6R3MG19  | 3.0143                        | 25                              | 20.79                | 1.8  | 7.3x4.3x1.9           |
| 33               | 10   | 336XMPL010MG19  | 3.0143                        | 40                              | 99                   | 2  | 7.3x4.3x1.9           |
| 33               | 12   | 336XMPL012MG28  | 3.0143                        | 25                              | 123.75               | 2  | 7.3x4.3x2.8           |
| 47               | 6.3  | 476XMPL6R3MG19  | 2.1164                        | 25                              | 29.61                | 1.8  | 7.3x4.3x1.9           |
| 47               | 10   | 476XMPL010MG19  | 2.1164                        | 40                              | 141                  | 3  | 7.3x4.3x1.9           |
| 47               | 12   | 476XMPL012MG28  | 2.1164                        | 20                              | 176.25               | 2  | 7.3x4.3x2.8           |
| 68               | 4    | 686XMPL004MG19  | 1.4628                        | 20                              | 27.2                 | 1.9  | 7.3x4.3x1.9           |
| 68               | 6.3  | 686XMPL6R3MG19  | 1.4628                        | 15                              | 42.84                | 2  | 7.3x4.3x1.9           |
| 68               | 10   | 686XMPL010MG28  | 1.4628                        | 40                              | 204                  | 3  | 7.3x4.3x2.8           |
| 82               | 4    | 826XMPL004MG19  | 1.2131                        | 9                               | 32.8                 | 3  | 7.3x4.3x1.9           |
| 100              | 2    | 107XMPL002MG19  | 0.9947                        | 16                              | 20                   | 2  | 7.3x4.3x1.9           |
| 100              | 4    | 107XMPL004MG19  | 0.9947                        | 9                               | 40                   | 3  | 7.3x4.3x1.9           |
| 100              | 6.3  | 107XMPL6R3MG19  | 0.9947                        | 15                              | 63                   | 2.7  | 7.3x4.3x1.9           |
| 100              | 6.3  | 107XMPL6R3MG19H | 0.9947                        | 12                              | 63                   | 2.7  | 7.3x4.3x1.9           |
| 120              | 6.3  | 127XMPL6R3MG19X | 0.8289                        | 9                               | 75.6                 | 2.7  | 7.3x4.3x1.9           |
| 120              | 6.3  | 127XMPL6R3MG19  | 0.8289                        | 15                              | 75.6                 | 2.7  | 7.3x4.3x1.9           |
| 120              | 6.3  | 127XMPL6R3MG19H | 0.8289                        | 12                              | 75.6                 | 2.7  | 7.3x4.3x1.9           |
| 150              | 2    | 157XMPL002MG19  | 0.6631                        | 9                               | 30                   | 3  | 7.3x4.3x1.9           |
| 150              | 2.5  | 157XMPL2R5MG28  | 0.6631                        | 9                               | 37.5                 | 3  | 7.3x4.3x2.8           |
| 150              | 2.5  | 157XMPL2R5MG19  | 0.6631                        | 9                               | 37.5                 | 3  | 7.3x4.3x1.9           |
| 150              | 4    | 157XMPL004MG19  | 0.6631                        | 12                              | 60                   | 3  | 7.3x4.3x1.9           |
| 150              | 4    | 157XMPL004MG19R | 0.6631                        | 7                               | 60                   | 3  | 7.3x4.3x1.9           |
| 150              | 4    | 157XMPL004MG19X | 0.6631                        | 9                               | 60                   | 3  | 7.3x4.3x1.9           |
| 150              | 6.3  | 157XMPL6R3MG28  | 0.6631                        | 15                              | 94.5                 | 3  | 7.3x4.3x2.8           |
| 150              | 6.3  | 157XMPL6R3MG28H | 0.6631                        | 12                              | 94.5                 | 3  | 7.3x4.3x2.8           |
| 150              | 6.3  | 157XMPL6R3MG19  | 0.6631                        | 15                              | 94.5                 | 3  | 7.3x4.3x1.9           |
| 150              | 6.3  | 157XMPL6R3MG19H | 0.6631                        | 12                              | 94.5                 | 3  | 7.3x4.3x1.9           |
| 150              | 6.3  | 157XMPL6R3MG19X | 0.6631                        | 9                               | 94.5                 | 3  | 7.3x4.3x1.9           |
| 150              | 6.3  | 157XMPL6R3MG28X | 0.6631                        | 9                               | 94.5                 | 3  | 7.3x4.3x2.8           |
| 180              | 2    | 187XMPL002MG19  | 0.5526                        | 9                               | 36                   | 2.7  | 7.3x4.3x1.9           |
| 180              | 2.5  | 187XMPL2R5MG19  | 0.5526                        | 9                               | 45                   | 3  | 7.3x4.3x1.9           |
| 180              | 2.5  | 187XMPL2R5MG28  | 0.5526                        | 9                               | 45                   | 3  | 7.3x4.3x2.8           |
| 180              | 4    | 187XMPL004MG28R | 0.5526                        | 7                               | 72                   | 3  | 7.3x4.3x2.8           |
| 180              | 4    | 187XMPL004MG28X | 0.5526                        | 9                               | 72                   | 3  | 7.3x4.3x2.8           |
| 180              | 4    | 187XMPL004MG19H | 0.5526                        | 12                              | 72                   | 3  | 7.3x4.3x1.9           |
| 180              | 4    | 187XMPL004MG19R | 0.5526                        | 7                               | 72                   | 3  | 7.3x4.3x1.9           |
| 180              | 4    | 187XMPL004MG19X | 0.5526                        | 9                               | 72                   | 3  | 7.3x4.3x1.9           |
| 180              | 4    | 187XMPL004MG28H | 0.5526                        | 12                              | 72                   | 3  | 7.3x4.3x2.8           |
| 180              | 6.3  | 187XMPL6R3MG19  | 0.5526                        | 15                              | 113.4                | 2.7  | 7.3x4.3x1.9           |
| 220              | 2    | 227XMPL002MG19  | 0.4521                        | 15                              | 44                   | 3  | 7.3x4.3x1.9           |
| 220              | 2.5  | 227XMPL2R5MG19H | 0.4521                        | 12                              | 55                   | 3  | 7.3x4.3x1.9           |
| 220              | 2.5  | 227XMPL2R5MG19R | 0.4521                        | 7                               | 55                   | 3  | 7.3x4.3x1.9           |
| 220              | 2.5  | 227XMPL2R5MG19X | 0.4521                        | 9                               | 55                   | 3  | 7.3x4.3x1.9           |
| 220              | 2.5  | 227XMPL2R5MG28H | 0.4521                        | 12                              | 55                   | 3  | 7.3x4.3x2.8           |
| 220              | 2.5  | 227XMPL2R5MG28R | 0.4521                        | 7                               | 55                   | 3  | 7.3x4.3x2.8           |
| 220              | 2.5  | 227XMPL2R5MG28X | 0.4521                        | 9                               | 55                   | 3  | 7.3x4.3x2.8           |

# XMPL

+105°C Multi-layer Low Profile Chip

| Capacitance (µF) | WVDC | IC PART NUMBER  | Maximum ESR (Ω)<br>120 Hz,<br>+20°C | Maximum ESR (mΩ)<br>100 kHz,<br>+20°C | Leakage Current (µA) | Maximum RMS Ripple Current (A)<br>100 kHz,<br>+105°C | Dimensions LxHxT (mm) |
|------------------|------|-----------------|-------------------------------------|---------------------------------------|----------------------|--|-----------------------|
| 220              | 4    | 227XMPL004MG28R | 0.4521                              | 7                                     | 88                   | 3  | 7.3x4.3x2.8           |
| 220              | 4    | 227XMPL004MG28X | 0.4521                              | 9                                     | 88                   | 3  | 7.3x4.3x2.8           |
| 220              | 4    | 227XMPL004MG19H | 0.4521                              | 12                                    | 88                   | 3  | 7.3x4.3x1.9           |
| 220              | 4    | 227XMPL004MG19R | 0.4521                              | 7                                     | 88                   | 3  | 7.3x4.3x1.9           |
| 220              | 4    | 227XMPL004MG19X | 0.4521                              | 9                                     | 88                   | 3  | 7.3x4.3x1.9           |
| 220              | 4    | 227XMPL004MG28H | 0.4521                              | 12                                    | 88                   | 3  | 7.3x4.3x2.8           |
| 220              | 6.3  | 227XMPL6R3MG19  | 0.4521                              | 10                                    | 138.6                | 3  | 7.3x4.3x1.9           |
| 220              | 6.3  | 227XMPL6R3MG28  | 0.4521                              | 15                                    | 138.6                | 3  | 7.3x4.3x2.8           |
| 270              | 2    | 277XMPL002MG19H | 0.3684                              | 12                                    | 54                   | 3  | 7.3x4.3x1.9           |
| 270              | 2    | 277XMPL002MG19R | 0.3684                              | 6                                     | 54                   | 3  | 7.3x4.3x1.9           |
| 270              | 2    | 277XMPL002MG19X | 0.3684                              | 9                                     | 54                   | 3  | 7.3x4.3x1.9           |
| 270              | 2.5  | 277XMPL2R5MG28R | 0.3684                              | 7                                     | 67.5                 | 3  | 7.3x4.3x2.8           |
| 270              | 2.5  | 277XMPL2R5MG28X | 0.3684                              | 9                                     | 67.5                 | 3  | 7.3x4.3x2.8           |
| 270              | 2.5  | 277XMPL2R5MG19X | 0.3684                              | 9                                     | 67.5                 | 3  | 7.3x4.3x1.9           |
| 270              | 2.5  | 277XMPL2R5MG28H | 0.3684                              | 12                                    | 67.5                 | 3  | 7.3x4.3x2.8           |
| 270              | 2.5  | 277XMPL2R5MG19H | 0.3684                              | 12                                    | 67.5                 | 3  | 7.3x4.3x1.9           |
| 270              | 2.5  | 277XMPL2R5MG19R | 0.3684                              | 7                                     | 67.5                 | 3  | 7.3x4.3x1.9           |
| 270              | 4    | 277XMPL004MG19R | 0.3684                              | 7                                     | 108                  | 2.7  | 7.3x4.3x1.9           |
| 270              | 4    | 277XMPL004MG19X | 0.3684                              | 9                                     | 108                  | 2.7  | 7.3x4.3x1.9           |
| 270              | 4    | 277XMPL004MG19H | 0.3684                              | 12                                    | 108                  | 2.7  | 7.3x4.3x1.9           |
| 330              | 2    | 337XMPL002MG28H | 0.3014                              | 12                                    | 66                   | 3  | 7.3x4.3x2.8           |
| 330              | 2    | 337XMPL002MG28A | 0.3014                              | 4.5                                   | 66                   | 3  | 7.3x4.3x2.8           |
| 330              | 2    | 337XMPL002MG19A | 0.3014                              | 4.5                                   | 66                   | 3  | 7.3x4.3x1.9           |
| 330              | 2    | 337XMPL002MG19R | 0.3014                              | 6                                     | 66                   | 3  | 7.3x4.3x1.9           |
| 330              | 2    | 337XMPL002MG19H | 0.3014                              | 12                                    | 66                   | 3  | 7.3x4.3x1.9           |
| 330              | 2    | 337XMPL002MG28R | 0.3014                              | 6                                     | 66                   | 3  | 7.3x4.3x2.8           |
| 330              | 2    | 337XMPL002MG28X | 0.3014                              | 9                                     | 66                   | 3  | 7.3x4.3x2.8           |
| 330              | 2    | 337XMPL002MG19X | 0.3014                              | 9                                     | 66                   | 3  | 7.3x4.3x1.9           |
| 330              | 2.5  | 337XMPL2R5MG19A | 0.3014                              | 4.5                                   | 82.5                 | 3  | 7.3x4.3x1.9           |
| 330              | 2.5  | 337XMPL2R5MG19R | 0.3014                              | 6                                     | 82.5                 | 3  | 7.3x4.3x1.9           |
| 330              | 2.5  | 337XMPL2R5MG19X | 0.3014                              | 9                                     | 82.5                 | 3  | 7.3x4.3x1.9           |
| 330              | 2.5  | 337XMPL2R5MG19H | 0.3014                              | 12                                    | 82.5                 | 3  | 7.3x4.3x1.9           |
| 330              | 4    | 337XMPL004YG19X | 0.3014                              | 9                                     | 132                  | 2.7  | 7.3x4.3x1.9           |
| 330              | 4    | 337XMPL004YG19R | 0.3014                              | 7                                     | 132                  | 2.7  | 7.3x4.3x1.9           |
| 330              | 4    | 337XMPL004YG19H | 0.3014                              | 12                                    | 132                  | 2.7  | 7.3x4.3x1.9           |
| 330              | 6.3  | 337XMPL6R3YG19  | 0.3014                              | 10                                    | 207.9                | 3  | 7.3x4.3x1.9           |
| 330              | 6.3  | 337XMPL6R3YG28  | 0.3014                              | 10                                    | 207.9                | 3  | 7.3x4.3x2.8           |
| 390              | 2    | 397XMPL002MG19X | 0.2551                              | 9                                     | 78                   | 3  | 7.3x4.3x1.9           |
| 390              | 2    | 397XMPL002MG19R | 0.2551                              | 6                                     | 78                   | 3  | 7.3x4.3x1.9           |
| 390              | 2    | 397XMPL002MG19A | 0.2551                              | 4.5                                   | 78                   | 3  | 7.3x4.3x1.9           |
| 390              | 2.5  | 397XMPL2R5MG19R | 0.2551                              | 6                                     | 97.5                 | 3  | 7.3x4.3x1.9           |
| 390              | 2.5  | 397XMPL2R5MG19X | 0.2551                              | 9                                     | 97.5                 | 3  | 7.3x4.3x1.9           |
| 390              | 2.5  | 397XMPL2R5MG19H | 0.2551                              | 12                                    | 97.5                 | 3  | 7.3x4.3x1.9           |
| 390              | 2.5  | 397XMPL2R5MG19A | 0.2551                              | 4.5                                   | 97.5                 | 3  | 7.3x4.3x1.9           |
| 470              | 2    | 477XMPL002MG19X | 0.2116                              | 9                                     | 94                   | 3  | 7.3x4.3x1.9           |
| 470              | 2    | 477XMPL002MG28A | 0.2116                              | 4.5                                   | 94                   | 3  | 7.3x4.3x2.8           |
| 470              | 2    | 477XMPL002MG28X | 0.2116                              | 9                                     | 94                   | 3  | 7.3x4.3x2.8           |
| 470              | 2    | 477XMPL002MG28R | 0.2116                              | 6                                     | 94                   | 3  | 7.3x4.3x2.8           |
| 470              | 2    | 477XMPL002MG19A | 0.2116                              | 4.5                                   | 94                   | 3  | 7.3x4.3x1.9           |
| 470              | 2    | 477XMPL002MG19R | 0.2116                              | 6                                     | 94                   | 3  | 7.3x4.3x1.9           |
| 470              | 2.5  | 477XMPL2R5YG19R | 0.2116                              | 6                                     | 117.5                | 3  | 7.3x4.3x1.9           |
| 470              | 2.5  | 477XMPL2R5YG28A | 0.2116                              | 4.5                                   | 117.5                | 3  | 7.3x4.3x2.8           |
| 470              | 2.5  | 477XMPL2R5YG19X | 0.2116                              | 9                                     | 117.5                | 3  | 7.3x4.3x1.9           |
| 470              | 2.5  | 477XMPL2R5YG28H | 0.2116                              | 12                                    | 117.5                | 3  | 7.3x4.3x2.8           |
| 470              | 2.5  | 477XMPL2R5YG28R | 0.2116                              | 6                                     | 117.5                | 3  | 7.3x4.3x2.8           |
| 470              | 2.5  | 477XMPL2R5YG28X | 0.2116                              | 9                                     | 117.5                | 3  | 7.3x4.3x2.8           |
| 470              | 2.5  | 477XMPL2R5YG19A | 0.2116                              | 4.5                                   | 117.5                | 3  | 7.3x4.3x1.9           |
| 470              | 2.5  | 477XMPL2R5YG19H | 0.2116                              | 12                                    | 117.5                | 3  | 7.3x4.3x1.9           |