

Type TCG Axial Leaded Aluminum Electrolytic Capacitors

85 °C Computer Grade Capacitor



Type TCG is an axial leaded, 85 °C, industrial and computer grade quality aluminum electrolytic capacitor that is suitable for computers, communication equipment and power supplies.

Highlights

- Industrial grade
- Computer grade
- Low profile mounting

Specifications

| | |
|-------------------------------------|---|
| Capacitance Range: | 10 to 10,000 μ F |
| Voltage Range: | 10 to 450 WVdc |
| Capacitance Tolerance: | 10 to 75 WVdc, -10 +75% 150 to 450 WVdc, -10 +50% |
| Operating Temperature Range: | -40 °C to 85 °C |
| DC Leakage Current: | $I = 6 \sqrt{CV}$ after 5 minutes Not to exceed 3 mA @ 25 °C |

$I = 6 \sqrt{CV}$ after 5 minutes
Not to exceed 3 mA @ 25 °C

I = leakage current in μ A

C = Capacitance in μ F

V = Rated voltage

Ripple Current Multipliers:

| Rated WVdc | Ripple Multipliers | | | |
|---------------|--------------------|--------|---------|---------|
| | 60 Hz | 400 Hz | 1000 Hz | 2400 Hz |
| 0 to 50 | 0.8 | 1.05 | 1.10 | 1.14 |
| 51 to 150 | 0.8 | 1.08 | 1.13 | 1.16 |
| 151 & up | 0.8 | 1.15 | 1.21 | 1.25 |

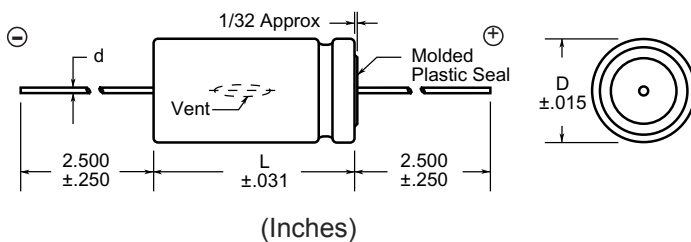
| Ambient Temp. | +45 °C | +55 °C | +65 °C | +75 °C | +85 °C |
|-------------------|--------|--------|--------|--------|--------|
| Ripple Multiplier | 2.2 | 2.0 | 1.7 | 1.4 | 1.0 |

QA Stability Test:

Apply WVdc for 1,000 h at 85 °C

- Capacitance change $\pm 15\%$ from initial limits
- DC leakage current meets initial limits
- ESR $\leq 150\%$ of initial measured value

Outline Drawing



Parts are supplied with PVC insulating sleeve.
Add .010" to diameter and .125" max
to length to allow for insulation.

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Ratings

| Cap (μ F) | Catalog Part Number | Max ESR | | Max Ripple | | Size | | |
|---------------------------------|------------------------|---------------------------------|------------------------|---------------------------|-------------------------|---------------------|--|--|
| | | 120 Hz 25 °C (Ω) | 120 Hz 85 °C (A) | Diameter D (Inches) | Length L (Inches) | Lead Wire (d) | | |
| 10 WVdc (12 Vdc Surge) | | | | | | | | |
| 2,500 | TCG252U010L1C | 0.170 | 1.407 | 0.875 | 1.125 | 0.040 | | |
| 2,500 | TCG252U010N1C | 0.171 | 1.521 | 1.000 | 1.125 | 0.040 | | |
| 3,500 | TCG352U010N1L | 0.092 | 2.424 | 1.000 | 1.625 | 0.040 | | |
| 5,000 | TCG502U010N1G | 0.082 | 2.488 | 1.000 | 1.375 | 0.040 | | |
| 5,500 | TCG552U010N1L | 0.081 | 2.584 | 1.000 | 1.625 | 0.040 | | |
| 10,000 | TCG103U010L3C | 0.046 | 4.274 | 0.875 | 3.125 | 0.040 | | |
| 10,000 | TCG103U010N2C | 0.048 | 3.772 | 1.000 | 2.125 | 0.040 | | |
| 15 WVdc (20 Vdc Surge) | | | | | | | | |
| 2,500 | TCG252U015G2L | 0.126 | 1.989 | 0.625 | 2.625 | 0.032 | | |
| 2,900 | TCG292U015G2L | 0.110 | 2.134 | 0.625 | 2.625 | 0.032 | | |
| 4,000 | TCG402U015N1L | 0.085 | 2.518 | 1.000 | 1.625 | 0.040 | | |
| 4,100 | TCG412U015N1L | 0.083 | 2.544 | 1.000 | 1.625 | 0.040 | | |
| 5,000 | TCG502U015J2L | 0.067 | 3.015 | 0.750 | 2.625 | 0.040 | | |
| 6,300 | TCG632U015L2L | 0.055 | 3.612 | 0.875 | 2.625 | 0.040 | | |
| 8,000 | TCG802U015N2L | 0.045 | 4.269 | 1.000 | 2.625 | 0.040 | | |
| 8,200 | TCG822U015N2L | 0.044 | 4.310 | 1.000 | 2.625 | 0.040 | | |
| 10,000 | TCG103U015N2L | 0.038 | 4.634 | 1.000 | 2.625 | 0.040 | | |
| 25 WVdc (30 Vdc Surge) | | | | | | | | |
| 1,000 | TCG102U025N1C | 0.216 | 1.352 | 1.000 | 1.125 | 0.040 | | |
| 1,100 | TCG112U025J1L | 0.190 | 1.431 | 0.750 | 1.625 | 0.040 | | |
| 2,000 | TCG202U025N1L | 0.154 | 2.137 | 1.000 | 1.625 | 0.040 | | |
| 2,200 | TCG222U025J2L | 0.098 | 2.487 | 0.750 | 2.625 | 0.040 | | |
| 4,000 | TCG402U025L3C | 0.057 | 3.827 | 0.875 | 3.125 | 0.040 | | |
| 30 WVdc (40 Vdc Surge) | | | | | | | | |
| 500 | TCG501U030J1C | 0.369 | 0.874 | 0.750 | 1.125 | 0.040 | | |
| 1,100 | TCG112U030G2L | 0.169 | 1.721 | 0.625 | 2.625 | 0.032 | | |
| 2,100 | TCG212U030L2L | 0.072 | 3.159 | 0.875 | 2.625 | 0.040 | | |
| 2,400 | TCG242U030L2L | 0.082 | 2.961 | 0.875 | 2.625 | 0.040 | | |
| 2,500 | TCG252U030N2L | 0.078 | 3.005 | 1.000 | 2.625 | 0.040 | | |
| 3,000 | TCG302U030L2C | 0.065 | 3.004 | 0.875 | 2.125 | 0.040 | | |
| 50 WVdc (65 Vdc Surge) | | | | | | | | |
| 250 | TCG251U050G1G | 0.499 | 0.742 | 0.625 | 1.375 | 0.032 | | |
| 500 | TCG501U050G2L | 0.156 | 1.788 | 0.625 | 2.625 | 0.032 | | |
| 500 | TCG501U050N1C | 0.262 | 1.227 | 1.000 | 1.125 | 0.040 | | |
| 600 | TCG601U050G2L | 0.211 | 1.539 | 0.625 | 2.625 | 0.032 | | |
| 600 | TCG601U050L1G | 0.215 | 1.363 | 0.875 | 1.375 | 0.040 | | |
| 1,100 | TCG112U050N1G | 1.050 | 2.480 | 1.000 | 1.375 | 0.040 | | |

| Cap (μ F) | Catalog Part Number | Max ESR | | Max Ripple | | Size | | |
|-----------------------------------|------------------------|---------------------------------|------------------------|---------------------------|-------------------------|---------------------|--|--|
| | | 120 Hz 25 °C (Ω) | 120 Hz 85 °C (A) | Diameter D (Inches) | Length L (Inches) | Lead Wire (d) | | |
| 50 WVdc (65 Vdc Surge) | | | | | | | | |
| 1,200 | TCG122U050L2C | 0.110 | 2.313 | 0.875 | 2.125 | 0.040 | | |
| 2,300 | TCG232U050N2L | 0.062 | 3.653 | 1.000 | 2.625 | 0.040 | | |
| 2,500 | TCG252U050N2L | 0.058 | 3.777 | 1.000 | 2.625 | 0.040 | | |
| 150 WVdc (175 Vdc Surge) | | | | | | | | |
| 100 | TCG101T150J1L | 0.696 | 0.748 | 0.750 | 1.625 | 0.040 | | |
| 110 | TCG111T150J1L | 0.634 | 0.784 | 0.750 | 1.625 | 0.040 | | |
| 250 | TCG251T150L2C | 0.284 | 1.439 | 0.875 | 2.125 | 0.040 | | |
| 530 | TCG531T150N3C | 0.139 | 2.639 | 1.000 | 3.125 | 0.040 | | |
| 560 | TCG561T150N3C | 0.133 | 2.705 | 1.000 | 3.125 | 0.040 | | |
| 200 WVdc (250 Vdc Surge) | | | | | | | | |
| 210 | TCG211T200N2C | 0.646 | 1.780 | 1.000 | 2.125 | 0.040 | | |
| 300 | TCG301T200N2C | 0.517 | 1.977 | 1.000 | 2.125 | 0.040 | | |
| 430 | TCG431U200N3L | 0.411 | 2.116 | 1.000 | 3.625 | 0.040 | | |
| 250 WVdc (300 Vdc Surge) | | | | | | | | |
| 50 | TCG500T250L1G | 2.450 | 0.607 | 0.875 | 1.375 | 0.040 | | |
| 100 | TCG101T250L2C | 1.230 | 1.039 | 0.875 | 2.125 | 0.040 | | |
| 200 | TCG201T250N2L | 0.277 | 1.726 | 1.000 | 2.625 | 0.040 | | |
| 350 WVdc (400 Vdc Surge) | | | | | | | | |
| 20 | TCG200T350G1L | 9.500 | 0.294 | 0.625 | 1.625 | 0.032 | | |
| 20 | TCG200T350J1C | 9.520 | 0.276 | 0.750 | 1.125 | 0.040 | | |
| 30 | TCG300T350G2C | 6.336 | 0.408 | 0.625 | 2.125 | 0.032 | | |
| 30 | TCG300T350L1C | 6.368 | 0.369 | 0.875 | 1.125 | 0.040 | | |
| 40 | TCG400T350N1C | 4.200 | 0.460 | 1.000 | 1.125 | 0.040 | | |
| 50 | TCG500T350N1G | 3.353 | 0.560 | 1.000 | 1.375 | 0.040 | | |
| 100 | TCG101T350N2C | 1.680 | 0.957 | 1.000 | 2.125 | 0.040 | | |
| 160 | TCG161T350N2L | 0.469 | 1.327 | 1.000 | 2.625 | 0.040 | | |
| 180 | TCG181T350N3C | 0.417 | 1.524 | 1.000 | 3.125 | 0.040 | | |
| 450 WVdc (525 Vdc Surge) | | | | | | | | |
| 10 | TCG100T450G1L | 17.392 | 0.217 | 0.625 | 1.625 | 0.032 | | |
| 10 | TCG100T450J1C | 17.404 | 0.204 | 0.750 | 1.125 | 0.040 | | |
| 12 | TCG120T450J1G | 14.500 | 0.244 | 0.750 | 1.375 | 0.040 | | |
| 20 | TCG200T450G2L | 8.704 | 0.384 | 0.625 | 2.625 | 0.032 | | |
| 20 | TCG200T450N1C | 8.732 | 0.341 | 1.000 | 1.125 | 0.040 | | |
| 50 | TCG500T450N1L | 4.742 | 0.709 | 1.000 | 1.625 | 0.040 | | |
| 50 | TCG500T450N2C | 4.049 | 0.548 | 1.000 | 2.125 | 0.040 | | |
| 60 | TCG600T450N2L | 3.950 | 0.890 | 1.000 | 2.625 | 0.040 | | |
| 85 | TCG850T450N2L | 1.869 | 0.998 | 1.000 | 2.625 | 0.040 | | |

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Case Code Format for Type TCG

| Case Code Chart | | | | | | |
|-----------------|--------|-------|-------------|------|--------|-----|
| Case | Inches | | Millimeters | | d | |
| Code | D | L | D | L | Inches | AWG |
| E1G | 0.500 | 1.375 | 12.7 | 34.9 | 0.032 | #20 |
| E2C | 0.500 | 2.125 | 12.7 | 53.9 | 0.032 | #20 |
| G1C | 0.625 | 1.125 | 15.9 | 28.6 | 0.032 | #20 |
| G1G | 0.625 | 1.375 | 15.9 | 34.9 | 0.032 | #20 |
| G1L | 0.625 | 1.625 | 15.9 | 41.3 | 0.032 | #20 |
| G2C | 0.625 | 2.125 | 15.9 | 53.9 | 0.032 | #20 |
| G2L | 0.625 | 2.625 | 15.9 | 66.7 | 0.032 | #20 |
| G3C | 0.625 | 3.125 | 15.9 | 79.4 | 0.032 | #20 |
| G3L | 0.625 | 3.625 | 15.9 | 92.1 | 0.032 | #20 |
| J1C | 0.750 | 1.125 | 19.1 | 28.6 | 0.040 | #18 |
| J1G | 0.750 | 1.375 | 19.1 | 34.9 | 0.040 | #18 |
| J1L | 0.750 | 1.625 | 19.1 | 41.3 | 0.040 | #18 |
| J2C | 0.750 | 2.125 | 19.1 | 53.9 | 0.040 | #18 |
| J2L | 0.750 | 2.625 | 19.1 | 66.7 | 0.040 | #18 |
| J3C | 0.750 | 3.125 | 19.1 | 79.4 | 0.040 | #18 |
| J3L | 0.750 | 3.625 | 19.1 | 92.1 | 0.040 | #18 |
| L1C | 0.875 | 1.125 | 22.2 | 28.6 | 0.040 | #18 |
| L1G | 0.875 | 1.375 | 22.2 | 34.9 | 0.040 | #18 |
| L1L | 0.875 | 1.625 | 22.2 | 41.3 | 0.040 | #18 |
| L2C | 0.875 | 2.125 | 22.2 | 53.9 | 0.040 | #18 |
| L2L | 0.875 | 2.625 | 22.2 | 66.7 | 0.040 | #18 |
| L3C | 0.875 | 3.125 | 22.2 | 79.4 | 0.040 | #18 |
| L3L | 0.875 | 3.625 | 22.2 | 92.1 | 0.040 | #18 |
| N1C | 1.000 | 1.125 | 25.4 | 28.6 | 0.040 | #18 |
| N1G | 1.000 | 1.375 | 25.4 | 34.9 | 0.040 | #18 |
| N1L | 1.000 | 1.625 | 25.4 | 41.3 | 0.040 | #18 |
| N2C | 1.000 | 2.125 | 25.4 | 53.9 | 0.040 | #18 |
| N2L | 1.000 | 2.625 | 25.4 | 66.7 | 0.040 | #18 |
| N3C | 1.000 | 3.125 | 25.4 | 79.4 | 0.040 | #18 |
| N3L | 1.000 | 3.625 | 25.4 | 92.1 | 0.040 | #18 |