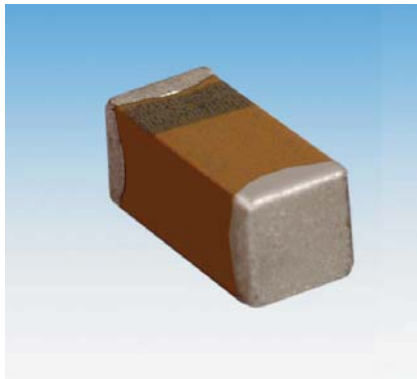


TPC Series



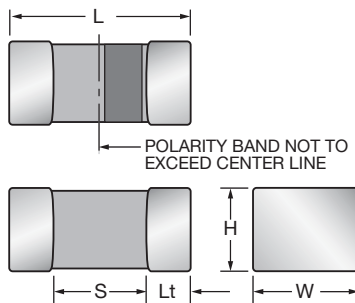
Low ESR TACmicrochip®



- Low ESR TACmicrochip® capacitor
- Smallest and low profile tantalum
- CV range: 1.0-100µF / 3-25V
- 4 case sizes available
- Power supply applications



CASE DIMENSIONS: millimeters (inches)



| Code | EIA Code | EIA Metric | Length (L) | Width (W) | Height (H) | Termination Spacing(S) | Minimum Termination Length (Lt) | Average Mass |
|------|----------|------------|---|---|---|------------------------|---------------------------------|--------------|
| H | 0805 | 2012-10 | 2.00 +0.20 -0.00 (0.079 +0.008 -0.000) | 1.35 +0.15 -0.00 (0.053 +0.006 -0.000) | 1.00 max. | 0.70 min | 0.15 min. | 17.1mg |
| K | 0402 | 1005-07 | 1.00 +0.20 -0.00 (0.039 +0.008 -0.000) | 0.50 +0.20 -0.00 (0.020 +0.008 -0.000) | 0.50 +0.20 -0.00 (0.020 +0.008 -0.000) | 0.40 min | 0.10 (0.004) | 2.8mg |
| L | 0603 | 1608-10 | 1.60 +0.20 -0.00 (0.063 +0.008 -0.000) | 0.85 +0.15 -0.00 (0.033 +0.006 -0.000) | 0.85 +0.15 -0.00 (0.033 +0.006 -0.000) | 0.55 min | 0.15 (0.006) | 8.6mg |
| R | 0805 | 2012-15 | 2.00 +0.20 -0.00 (0.079 +0.008 -0.000) | 1.35 +0.15 -0.00 (0.053 +0.006 -0.000) | 1.35 +0.15 -0.00 (0.053 +0.006 -0.000) | 0.70 min | 0.15 (0.006) | 29.9mg |

HOW TO ORDER

| | | | | | | |
|-----------------------|------------------------------|--|-------------------------------|--|---|-------------|
| TPC | R | 106 | M | 010 | R | 1800 |
| Type TACmicrochip® | Case Size See table above | Capacitance Code pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow) | Tolerance K=±10% M=±20% | Rated DC Voltage 003=3Vdc 004=4Vdc 006=6.3Vdc 010=10Vdc 016=16Vdc 020=20Vdc 025=25Vdc | Packaging R, P = 7" Standard Tin Termination Plastic Tape X, Q = 4 1/4" Standard Tin Termination Plastic Tape A, M = 7" Gold Termination Plastic Tape F, N = 4 1/4" Gold Termination Plastic Tape | ESR in mΩ |

TECHNICAL SPECIFICATIONS

| | | | | | | | | | |
|------------------------------------|--|-----|-----|-----|----|----|----|----|--|
| Technical Data: | All technical data relate to an ambient temperature of +25°C | | | | | | | | |
| Capacitance Range: | 1.0 µF to 100 µF | | | | | | | | |
| Capacitance Tolerance: | ±10%; ±20% | | | | | | | | |
| Leakage Current DCL: | 0.01CV or 0.5µA whichever is the greater | | | | | | | | |
| Rated Voltage (V _R) | ≤ +85°C: | 3 | 4 | 6.3 | 10 | 16 | 20 | 25 | |
| Category Voltage (V _C) | ≤ +125°C: | 2 | 2.7 | 4 | 7 | 10 | 13 | 17 | |
| Surge Voltage (V _S) | ≤ +85°C: | 3.9 | 5.2 | 8 | 13 | 20 | 26 | 32 | |
| Surge Voltage (V _S) | ≤ +125°C: | 2.6 | 3.2 | 5 | 8 | 12 | 16 | 20 | |
| Temperature Range: | -55°C to +125°C | | | | | | | | |
| Reliability: | 1% per 1000 hours at 85°C, V _R with 0.1Ω/V series impedance, 60% confidence level | | | | | | | | |
| Termination Finish: | Nickel and Tin Plating (standard), Nickel and Gold Plating option available upon request | | | | | | | | |



TPC Series



Low ESR TACmicrochip®

LOW ESR RANGE (LETTER DENOTES CASE SIZE)

| Capacitance | | Voltage Rating DC (V _R) at 85°C | | | | | | |
|-------------|------|---|---------------------------------|------------------------|--|---------|-------------------------|---------|
| µF | Code | 3.0V | 4.0V | 6.3V | 10V | 16V | 20V | 25V |
| 1.0 | 105 | | | | L(5000) | | | R(3000) |
| 1.5 | 155 | | | | | | | |
| 2.2 | 225 | | | K(8000)/L(5000) | L(5000) | L(5000) | | |
| 3.3 | 335 | | | | L(5000) | | | |
| 4.7 | 475 | K(8000) | | | L(5000) ^(M) | | R(1500) ^{(M)*} | |
| 6.8 | 685 | | | | | | | |
| 10 | 106 | | | L(4000) ^(M) | H(2500) L(4000) ^(M) ,R(1800) | R(1800) | | |
| 15 | 156 | | | R(1800) | R(1500) | | | |
| 22 | 226 | | L(5000) ^(M) /R(1800) | R(1500) | R(1500) | | | |
| 33 | 336 | R(1800) | H(1500) ^(M) /R(1500) | | R(1500) ^(M) | | | |
| 47 | 476 | R(1500) | | R(1800) ^(M) | | | | |
| 68 | 686 | | | | | | | |
| 100 | 107 | | R(1000) ^(M) | | | | | |

Codes shown are examples of ESR values offered on certain CV and case size. Other codes and ESR values available upon request.

Released codes ^(M tolerance only)

*Code under development – subject to change

Note: Voltage ratings are minimum values. AVX reserves the right to supply higher ratings in the same case size, to the same reliability standards



RATINGS & PART NUMBER REFERENCE

| AVX Part No. | EIA | Case Size | Cap (µF) | Rated Voltage (V) | DCL (µA) Max. | DF % Max. | ESR Max. (mΩ) @100kHz | MSL | 100kHz Ripple Current Ratings (A) | | | 100kHz Ripple Voltage Ratings (V) | | |
|---|------|-----------|----------|-------------------|---------------|-----------|-----------------------|-----|-----------------------------------|-------|-------|-----------------------------------|-------|-------|
| | | | | | | | | | 25°C | 85°C | 125°C | 25°C | 85°C | 125°C |
| 3 Volt @ 85°C (2 Volt @ 125°C) | | | | | | | | | | | | | | |
| TPCK475*003#8000 | 0402 | K | 4.7 | 3 | 0.5 | 12 | 8000 | 1 | 0.043 | 0.039 | 0.017 | 0.346 | 0.312 | 0.139 |
| TPCR336*003#1800 | 0805 | R | 33 | 3 | 1.0 | 10 | 1800 | 1 | 0.158 | 0.142 | 0.063 | 0.285 | 0.256 | 0.114 |
| TPCR476*003#1500 | 0805 | R | 47 | 3 | 1.5 | 10 | 1500 | 1 | 0.173 | 0.156 | 0.069 | 0.260 | 0.234 | 0.104 |
| 4 Volt @ 85°C (2.7 Volt @ 125°C) | | | | | | | | | | | | | | |
| TPCL226M004#5000 | 0603 | L | 22 | 4 | 0.9 | 6 | 5000 | 1 | 0.071 | 0.064 | 0.028 | 0.354 | 0.318 | 0.141 |
| TPCR226*004#1800 | 0805 | R | 22 | 4 | 0.9 | 8 | 1800 | 1 | 0.158 | 0.142 | 0.063 | 0.285 | 0.256 | 0.114 |
| TPCH336M004#1500 | 0805 | H | 33 | 4 | 1.3 | 14 | 1500 | 1 | 0.163 | 0.147 | 0.065 | 0.245 | 0.221 | 0.098 |
| TPCR336*004#1500 | 0805 | R | 33 | 4 | 1.3 | 10 | 1500 | 1 | 0.173 | 0.156 | 0.069 | 0.260 | 0.234 | 0.104 |
| TPCR107M004#1000 | 0805 | R | 100 | 4 | 4.0 | 30 | 1000 | 1 | 0.212 | 0.191 | 0.085 | 0.212 | 0.191 | 0.085 |
| 6.3 Volt @ 85°C (4 Volt @ 125°C) | | | | | | | | | | | | | | |
| TPCK225*006#8000 | 0402 | K | 2.2 | 6.3 | 0.5 | 8 | 8000 | 1 | 0.043 | 0.039 | 0.017 | 0.346 | 0.312 | 0.139 |
| TPCL225*006#5000 | 0603 | L | 2.2 | 6.3 | 0.5 | 6 | 5000 | 1 | 0.071 | 0.064 | 0.028 | 0.354 | 0.318 | 0.141 |
| TPCL106M006#4000 | 0603 | L | 10 | 6.3 | 0.6 | 10 | 4000 | 1 | 0.079 | 0.071 | 0.032 | 0.316 | 0.285 | 0.126 |
| TPCR156*006#1800 | 0805 | R | 15 | 6.3 | 0.9 | 8 | 1800 | 1 | 0.158 | 0.142 | 0.063 | 0.285 | 0.256 | 0.114 |
| TPCR226*006#1500 | 0805 | R | 22 | 6.3 | 1.4 | 10 | 1500 | 1 | 0.173 | 0.156 | 0.069 | 0.260 | 0.234 | 0.104 |
| TPCR476M006#1800 | 0805 | R | 47 | 6.3 | 3.0 | 20 | 1800 | 1 | 0.158 | 0.142 | 0.063 | 0.285 | 0.256 | 0.114 |
| 10 Volt @ 85°C (7 Volt @ 125°C) | | | | | | | | | | | | | | |
| TPCL105*010#5000 | 0603 | L | 1.0 | 10 | 0.5 | 6 | 5000 | 1 | 0.071 | 0.064 | 0.028 | 0.354 | 0.318 | 0.141 |
| TPCL225*010#5000 | 0603 | L | 2.2 | 10 | 0.5 | 6 | 5000 | 1 | 0.071 | 0.064 | 0.028 | 0.354 | 0.318 | 0.141 |
| TPCL335*010#5000 | 0603 | L | 3.3 | 10 | 0.5 | 8 | 5000 | 1 | 0.071 | 0.064 | 0.028 | 0.354 | 0.318 | 0.141 |
| TPCL475M010#5000 | 0603 | L | 4.7 | 10 | 0.5 | 10 | 5000 | 1 | 0.071 | 0.064 | 0.028 | 0.354 | 0.318 | 0.141 |
| TPCH106*010#2500 | 0805 | H | 10 | 10 | 1.0 | 8 | 2500 | 1 | 0.126 | 0.113 | 0.050 | 0.100 | 0.09 | 0.040 |
| TPCL106M010#4000 | 0603 | L | 10 | 10 | 1.0 | 20 | 4000 | 1 | 0.079 | 0.071 | 0.032 | 0.316 | 0.285 | 0.126 |
| TPCR106*010#1800 | 0805 | R | 10 | 10 | 1.0 | 8 | 1800 | 1 | 0.158 | 0.142 | 0.063 | 0.285 | 0.256 | 0.114 |
| TPCR156*010#1500 | 0805 | R | 15 | 10 | 1.5 | 10 | 1500 | 1 | 0.173 | 0.156 | 0.069 | 0.260 | 0.234 | 0.104 |
| TPCR226*010#1500 | 0805 | R | 22 | 10 | 2.2 | 14 | 1500 | 1 | 0.173 | 0.156 | 0.069 | 0.260 | 0.234 | 0.104 |
| TPCR336M010#1500 | 0805 | R | 33 | 10 | 3.3 | 20 | 1500 | 1 | 0.173 | 0.156 | 0.069 | 0.260 | 0.234 | 0.104 |
| 16 Volt @ 85°C (10 Volt @ 125°C) | | | | | | | | | | | | | | |
| TPCL225*016#5000 | 0603 | L | 2.2 | 16 | 0.5 | 10 | 5000 | 1 | 0.071 | 0.064 | 0.028 | 0.354 | 0.318 | 0.141 |
| TPCR106*016#1800 | 0805 | R | 10 | 16 | 1.6 | 10 | 1800 | 1 | 0.158 | 0.142 | 0.063 | 0.285 | 0.256 | 0.114 |
| 20 Volt @ 85°C (13 Volt @ 125°C) | | | | | | | | | | | | | | |
| TPCR475M020#1500 | 0805 | R | 4.7 | 20 | 0.9 | 8 | 1500 | 1 | 0.173 | 0.156 | 0.069 | 0.260 | 0.234 | 0.104 |
| 25 Volt @ 85°C (17 Volt @ 125°C) | | | | | | | | | | | | | | |
| TPCR105*025#3000 | 0805 | R | 1.0 | 25 | 0.5 | 8 | 3000 | 1 | 0.122 | 0.110 | 0.049 | 0.367 | 0.331 | 0.147 |

Moisture Sensitivity Level (MSL) is defined according to J-STD-020.

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts.

DCL is measured at rated voltage after 5 minutes.

The EIA & CECC standards for low ESR Solid Tantalum Capacitors allow an ESR movement to 1.25 times catalogue limit post mounting.

For typical weight and composition see page 124.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.