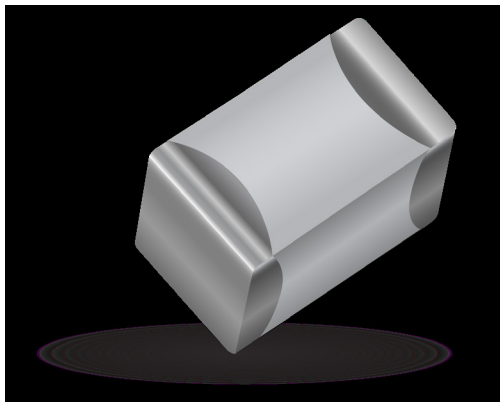


RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

100A Series Porcelain Superchip® Multilayer Capacitors



FEATURES

- Case A Size (.055" x .055")
- Lowest ESR/ESL
- High Q
- Low Noise
- Capacitance Range 0.1 pF to 100 pF
- Extended WVDC up to 250 VDC
- Ultra-Stable Performance
- High Self-Resonance
- Established Reliability (QPL)

GENERAL DESCRIPTION

AVX, the industry leader, offers new improved ESR/ESL performance for the 100A Series RF/Microwave Capacitors. This is AVX's most versatile high Q, high self resonant multilayer capacitor. High density porcelain construction provides a rugged, hermetic package.

Typical functional applications: Bypass, Coupling, Tuning, Feedback, Impedance Matching and DC Blocking.

Typical circuit applications: Microwave/RF/IF Amplifiers, Mixers, Oscillators, Low Noise Amplifiers, Filter Networks, Timing Circuits and Delay Lines.

PACKAGING OPTIONS



Tape & Reel



Vertical Orientation Tape & Reel



Cap-Pak® (100 pcs)



ELECTRICAL SPECIFICATIONS

| | |
|---------------------------------------|---|
| Temperature Coefficient (TCC) | 90 ± 20 PPM/°C |
| Capacitance Range | 0.1 pF to 100 pF |
| Operating Temperature | -55°C to +125°C* |
| Quality Factor | Greater than 10,000 @ 1 MHz. |
| Insulation Resistance (IR) | 0.1 pF to 100 pF 10 ⁶ Megohms min. @ 25°C at rated WVDC 10 ⁵ Megohms min. @ 125°C at rated WVDC |
| Working Voltage (WVDC) | See Capacitance Values table |
| Dielectric Withstanding Voltage (DWV) | 250% of rated WVDC for 5 seconds |
| Aging Effects | None |
| Piezoelectric Effects | None |
| Capacitance Drift | ± (0.02% or 0.02 pF), whichever is greater |

ENVIRONMENTAL CHARACTERISTICS

| | |
|----------------------|--|
| Thermal Shock | Mil-STD-202, Method 107, Condition A |
| Moisture Resistance | Mil-STD-202, Method 106 |
| Low Voltage Humidity | Mil-STD-202, Method 103, condition A, with 1.5 VDC applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours |
| Life Test | MIL-STD-202, Method 108, for 2000 hours, at 125°C. 200% WVDC applied. |
| Termination Styles | Available in various surface mount styles. See Mechanical Configurations, page 3 |
| Terminal Strength | Terminations for chips and pellets withstand a pull of 5 lbs. min., 10 lbs. typical, for 5 seconds in direction perpendicular to the termination surface of the capacitor. |



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CAPACITANCE VALUES

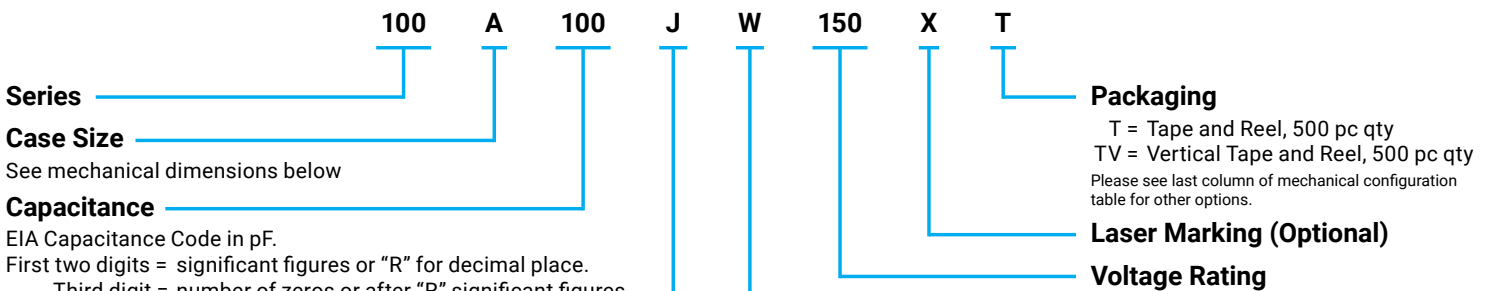
| Cap. Code | Cap. (pF) | Tol. | Rated WVDC | | Cap. Code | Cap. (pF) | Tol. | Rated WVDC | | Cap. Code | Cap. (pF) | Tol. | Rated WVDC | | | | | | | | | | | | | | | | | |
|-----------|-----------|---------|------------|------------------|-----------|------------------|---------|------------------|------------------|-----------|------------------|---------------|------------------|---------------|---------|------------------|------------------|-----|---------------|---------------|-----|---------|------------------|-----|------------------|-----|----------|---------------|-----|---------|
| | | | STD. | EXT. | | | | STD. | EXT. | | | | STD. | EXT. | | | | | | | | | | | | | | | | |
| 0R1 | 0.1 | B | 150 | EXTENDED VOLTAGE | 2R2 | 2.2 | B, C, D | 150 | EXTENDED VOLTAGE | 160 | 16 | F, G, J, K, M | 150 | VOLTAGE | | | | | | | | | | | | | | | | |
| 0R2 | 0.2 | | | | 2R4 | 2.4 | | | | 180 | 18 | | | | | | | | | | | | | | | | | | | |
| 0R3 | 0.3 | | | | 2R7 | 2.7 | | | | 200 | 20 | | | | | | | | | | | | | | | | | | | |
| 0R4 | 0.4 | | | | 3R0 | 3.0 | | | | 220 | 22 | | | | | | | | | | | | | | | | | | | |
| 0R5 | 0.5 | B, C | | | 250 | EXTENDED VOLTAGE | | | | 3R3 | 3.3 | | | | B, C, D | 250 | EXTENDED VOLTAGE | 240 | 24 | F, G, J, K, M | 250 | VOLTAGE | | | | | | | | |
| 0R6 | 0.6 | | | | | | | | | 3R6 | 3.6 | | | | | | | 270 | 27 | | | | | | | | | | | |
| 0R7 | 0.7 | | | | | | | | | 3R9 | 3.9 | | | | | | | 300 | 30 | | | | | | | | | | | |
| 0R8 | 0.8 | | | | | | | | | 4R3 | 4.3 | | | | | | | 330 | 33 | | | | | | | | | | | |
| 0R9 | 0.9 | B, C, D | | | | | | | | 250 | EXTENDED VOLTAGE | | | | | | | 4R7 | 4.7 | | | | B, C, D | 250 | EXTENDED VOLTAGE | 360 | 36 | F, G, J, K, M | 250 | VOLTAGE |
| 1R0 | 1.0 | | | | | | | | | | | | | | | | | 5R1 | 5.1 | | | | | | | 390 | 39 | | | |
| 1R1 | 1.1 | | | | | | | | | | | | | | | | | 5R6 | 5.6 | | | | | | | 430 | 43 | | | |
| 1R2 | 1.2 | | | | | | | | | | | | | | | | | 6R2 | 6.2 | | | | | | | 470 | 47 | | | |
| 1R3 | 1.3 | B, C, D | 250 | EXTENDED VOLTAGE | | | 6R8 | 6.8 | B, C, J, K, M | | | 250 | EXTENDED VOLTAGE | 510 | | | | 51 | F, G, J, K, M | | | | | | | 250 | EXTENDED | | | |
| 1R4 | 1.4 | | | | | | 7R5 | 7.5 | | | | | | 560 | | | | 56 | | | | | | | | | | | | |
| 1R5 | 1.5 | | | | | | 8R2 | 8.2 | | | | | | 620 | | | | 62 | | | | | | | | | | | | |
| 1R6 | 1.6 | | | | | | 9R1 | 9.1 | | | | | | 680 | | | | 68 | | | | | | | | | | | | |
| 1R7 | 1.7 | B, C, D | | | 250 | EXTENDED VOLTAGE | 100 | 10 | | | | | | B, C, J, K, M | 250 | EXTENDED VOLTAGE | 750 | 75 | | F, G, J, K, M | 250 | VOLT. | | | | | | | | |
| 1R8 | 1.8 | | | | | | 110 | 11 | | | | | | | | | 820 | 82 | | | | | | | | | | | | |
| 1R9 | 1.9 | | | | | | 120 | 12 | | | | | | | | | 910 | 91 | | | | | | | | | | | | |
| 2R0 | 2.0 | | | | | | 130 | 13 | | | | | | | | | 101 | 100 | | | | | | | | | | | | |
| 2R1 | 2.1 | B, C, D | | | | | 250 | EXTENDED VOLTAGE | | 150 | 15 | | | | | | B, C, J, K, M | 250 | | | | | EXTENDED VOLTAGE | | | | | F, G, J, K, M | 250 | EXT |

$v_{rms} = 0.707 \times WVDC$

Special values, tolerances, different WVDC and matching available. Please consult factory.

Note: Extended WVDC does not apply to CDR products

HOW TO ORDER



| Code | B | C | D | F | G | J | K | M |
|------|-------|--------|-------|-----|-----|-----|------|------|
| Tol. | ±1 pF | ±25 pF | ±5 pF | ±1% | ±2% | ±5% | ±10% | ±20% |

Termination Style Code W
Please see 2nd Column Mechanical Configuration Table

The above part number refers to a 100 A Series (case size A) 10 pF capacitor, J tolerance (±5%), 150 WVDC, with W termination (Tin / Lead, Solder Plated over Nickel Barrier), Laser Marking and Tape and Reel 1000 pc qty packaging.



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RF/Microwave Capacitors

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100A Series Porcelain Superchip® Multilayer Capacitors



MECHANICAL CONFIGURATION

| AVX Series & Case Size | AVX Term. Code | MIL-PRF-55681 | Case Size & Type | Outline W/T is a Termination Surface | Body Dimensions inches (mm) | | | Lead and Termination Dimensions and Material | | Pkg Type & Qty | Pkg Code |
|------------------------|----------------|---------------|-----------------------------|--------------------------------------|------------------------------------|----------------------------|------------------------|--|---|---|-----------------------------------|
| | | | | | Length (L) | Width (W) | Thickness (T) | Overlap (Y) | Materials | | |
| 100A | W | CDR12BG | A Solder Plate | | .055+.015-.010 (1.40+0.38-0.25) | .055 ±.015 (1.40 ±0.38) | .057 (1.45) max. | .010 + .010 - .005 (0.25 + 0.25 - 0.13) | Tin/ Lead, Solder Plated over Nickel Barrier Termination | T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs | T1K or T TV1K or TV C100 |
| 100A | P | CDR12BG | A Pellet | | .055+.025-.010 (1.40+0.64-0.25) | .055 ±.015 (1.40 ±0.38) | | | Heavy Tin/ Lead Coated, over Nickel Barrier Termination | T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs | T1K or T TV1K or TV C100 |
| 100A | T | N/A | A Solderable Nickel Barrier | | .055+.015-.010 (1.40+0.38-0.25) | .055 ±.015 (1.40 ±0.38) | | | RoHS Compliant Tin Plated over Nickel Barrier Termination | T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs | T1K or T TV1K or TV C100 |
| 100A | CA | CDR11BG | A Gold Chip | | .055+.015-.010 (1.40+0.38-0.25) | .055 ±.015 (1.40 ±0.38) | | | RoHS Compliant Gold Plated over Nickel Barrier Termination | T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs | T1K or T TV1K or TV C100 |

NON-MECHANICAL CONFIGURATION

| AVX Series & Case Size | AVX Term. Code | MIL-PRF-55681 | Case Size & Type | Outline W/T is a Termination Surface | Body Dimensions inches (mm) | | | Lead and Termination Dimensions and Material | | Pkg Type & Qty | Pkg Code |
|------------------------|----------------|--------------------|-----------------------------|--------------------------------------|------------------------------------|----------------------------|------------------------|--|--|---|-----------------------------------|
| | | | | | Length (L) | Width (W) | Thickness (T) | Overlap (Y) | Materials | | |
| 100A | WN | Meets Requirements | A Solder Plate | | .055+.015-.010 (1.40+0.38-0.25) | .055 ±.015 (1.40 ±0.38) | .057 (1.45) max. | .010 + .010 - .005 (0.25 + 0.25 - 0.13) | Tin/ Lead, Solder Plated over Non-Magnetic Barrier Termination | T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs | T1K or T TV1K or TV C100 |
| 100A | PN | Meets Requirements | A Pellet | | .055+.025-.010 (1.40+0.64-0.25) | .055 ±.015 (1.40 ±0.38) | | | Heavy Tin/ Lead Coated, over Non-Magnetic Barrier Termination | T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs | T1K or T TV1K or TV C100 |
| 100A | TN | Meets Requirements | A Solderable Nickel Barrier | | .055+.015-.010 (1.40+0.38-0.25) | .055 ±.015 (1.40 ±0.38) | | | RoHS Compliant Tin Plated over Non-Magnetic Barrier Termination | T&R, 1000 or 500 pcs Vertical T&R, 1000 or 500 pcs Cap Pac, 100 pcs | T1K or T TV1K or TV C100 |



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SUGGESTED MOUNTING PAD DIMENSIONS

Horizontal Electrode Orientation

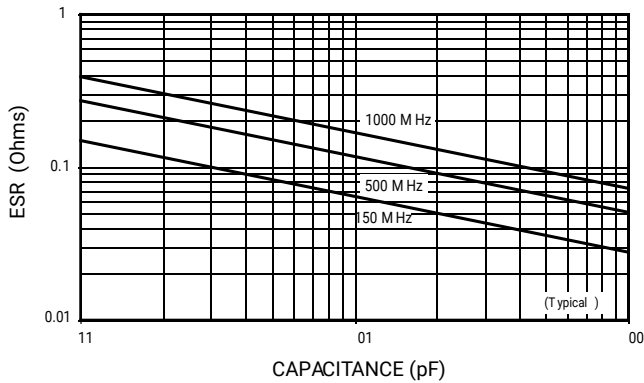
Vertical Electrode Orientation

| Case A | | | | | |
|------------------|--------------|--------|--------|--------|--------|
| Mount Type | Pad Size | A Min. | B Min. | C Min. | D Min. |
| Vertical Mount | Normal | .070 | .050 | .030 | .130 |
| | High Density | .050 | .030 | .030 | .090 |
| Horizontal Mount | Normal | .080 | .050 | .030 | .130 |
| | High Density | .060 | .030 | .030 | .090 |

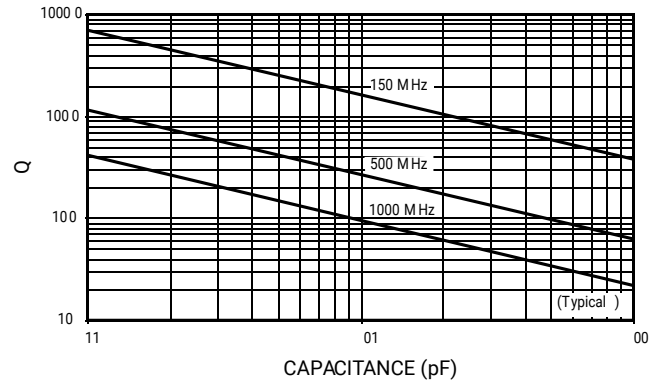
Dimensions are in inches.

PERFORMANCE DATA

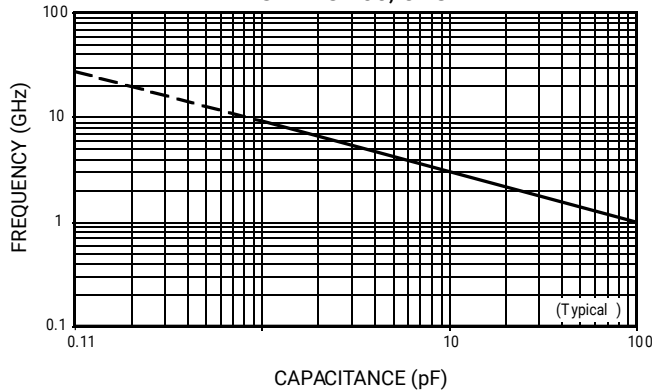
ESR VS. CAPACITANCE
SERIES 100, CASE A



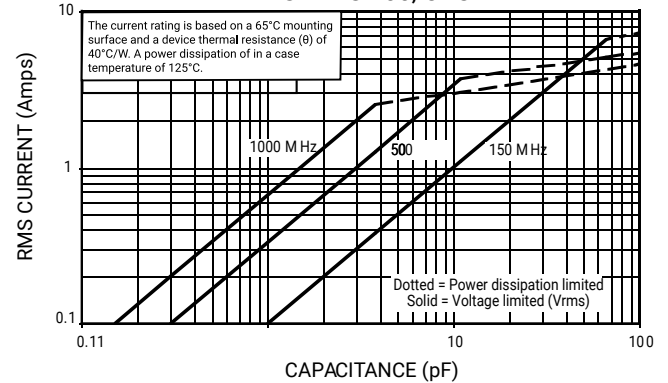
Q VS. CAPACITANCE
SERIES 100, CASE A



SERIES RESONANCE VS. CAPACITANCE
SERIES 100, CASE A



CURRENT RATING VS. CAPACITANCE
SERIES 100, CASE A



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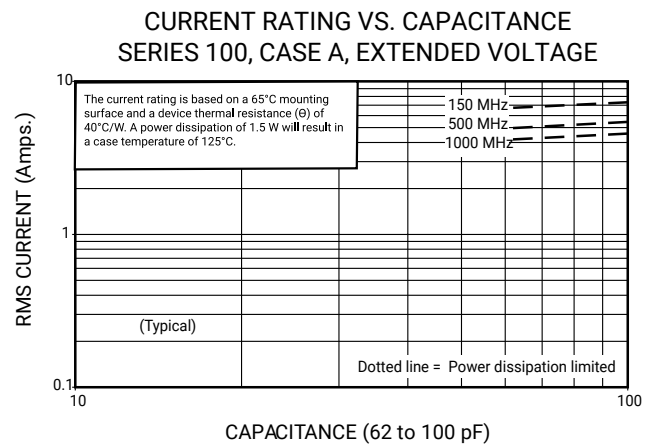
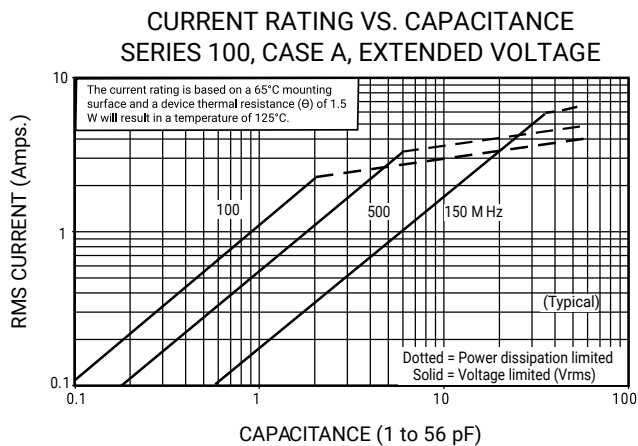
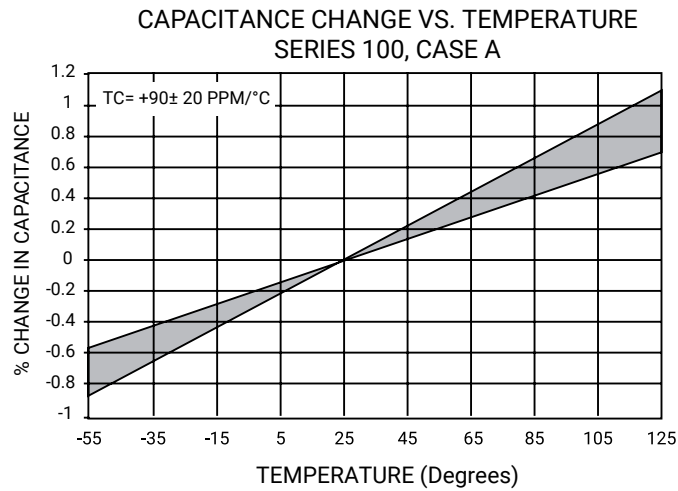
RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

100A Series Porcelain Superchip® Multilayer Capacitors



PERFORMANCE DATA



RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

100A Series Porcelain Superchip® Multilayer Capacitors



SAMPLE KITS

| Kit # | RoHS Compliant | Item Number | Description | Cap. Value Range (pF) | Cap Value (pF) | Tol. | Price |
|--------|----------------|-------------|---|-----------------------|--|-------|----------|
| Kit 1 | - | DK0001 | 100A Porcelain Superchip® 16 different values, 15 pcs. min. per value | 0.1 to 2.0 | 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.5 | ±0.1 | \$160.00 |
| Kit 1T | | DK0001T | | | 1.6, 1.8, 2.0 | ±0.25 | |
| Kit 2 | - | DK0002 | 100A Porcelain Superchip® 16 different values, 15 pc. min. per value | 1.0 to 10 | 1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3 | ±0.1 | \$160.00 |
| Kit 2T | | DK0002T | | | 3.9, 4.7, 5.6, 6.8, 8.2 | ±0.25 | |
| Kit 3 | - | DK0003 | 100A Porcelain Superchip® 16 different values, 15 pc. min. per value | 10 to 100 | 10, 12, 15, 18, 20, 22, 24, 27, 30, 33, 39, 47, 56, 68, 82, 100..... | ± 5% | \$160.00 |
| Kit 3T | | DK0003T | | | | | |



单击下面可查看定价，库存，交付和生命周期等信息

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