

F72/F75 Series



Low Profile and High CV Conformal Coated Chip



FEATURES

- Compliant to the RoHS2 directive 2011/65/EU
- SMD Conformal
- Small and low profile



APPLICATIONS

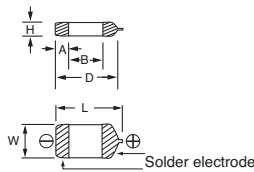
- Smartphone
- Mobile phone
- Wireless module
- Hearing aid

CASE DIMENSIONS: millimeters (inches)

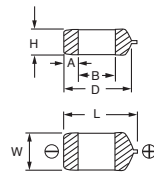
| Code | EIA Code | EIA Metric | L | W | H | A | B | D* |
|----------------------------|----------|------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------|
| F72 Case Dimensions | | | | | | | | |
| M | 2824 | 7260-20 | 7.20±0.30 (0.283±0.012) | 6.00±0.30 (0.236±0.012) | 2.00 Max. (0.079 Max) | 1.30±0.40 (0.051±0.016) | 3.80±0.60 (0.150±0.024) | 6.20 (0.244) |
| R | 2824 | 7260-15 | 7.20±0.30 (0.283±0.012) | 6.00±0.30 (0.236±0.012) | 1.20±0.30 (0.047±0.012) | 1.30±0.40 (0.051±0.016) | 3.80±0.60 (0.150±0.024) | 6.20 (0.244) |
| F75 Case Dimensions | | | | | | | | |
| C | 2813 | 7132-28 | 7.10±0.30 (0.280±0.012) | 3.20±0.30 (0.126±0.012) | 2.50±0.30 (0.098±0.012) | 1.30±0.30 (0.051±0.012) | 3.60±0.60 (0.142±0.024) | 6.00 (0.236) |
| D | 2914 | 7343-31 | 7.30±0.30 (0.287±0.012) | 4.30±0.30 (0.169±0.012) | 2.80±0.30 (0.110±0.012) | 1.30±0.40 (0.051±0.016) | 3.90±0.60 (0.153±0.024) | 6.40 (0.252) |
| M | 2824 | 7260-28 | 7.20±0.30 (0.283±0.012) | 6.00±0.30 (0.236±0.012) | 2.80 Max. (0.110 Max) | 1.30±0.40 (0.051±0.016) | 3.80±0.60 (0.150±0.024) | 6.20 (0.244) |
| R | 2824 | 7260-38 | 7.20±0.30 (0.283±0.012) | 6.00±0.30 (0.236±0.012) | 3.50±0.30 (0.138±0.012) | 1.30±0.40 (0.051±0.016) | 3.80±0.60 (0.150±0.024) | 6.20 (0.244) |
| U | 2813 | 7132-20 | 7.10±0.30 (0.280±0.012) | 3.20±0.30 (0.126±0.012) | 2.00 Max. (0.079 Max) | 1.30±0.30 (0.051±0.012) | 3.60±0.60 (0.142±0.024) | 6.00 (0.236) |

*D dimension only for reference

F72



F75



HOW TO ORDER

F72

Type

1A

Rated Voltage

107

Capacitance Code

pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)

M

Tolerance
K = ±10%
M = ±20%

R

Case Size
See table above



Packaging
See Tape & Reel Packaging Section



Specification Suffix
AH1 = Low ESR

AQ2 or Q2

Single Face Electrode

F75

Type

1C

Rated Voltage

157

Capacitance Code

pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)

M

Tolerance
K = ±10%
M = ±20%

D

Case Size
See table above



Packaging
See Tape & Reel Packaging Section

AQ2

Single Face Electrode

TECHNICAL SPECIFICATIONS

| | |
|-----------------------------------|---|
| Category Temperature Range: | -55 to +125°C |
| Rated Temperature: | +85°C |
| Capacitance Tolerance: | ±20%, ±10% at 120Hz |
| Dissipation Factor: | Refer to next page |
| ESR 100kHz: | Refer to next page |
| Leakage Current: | After 1 minute's application of rated voltage, leakage current at 20°C is not more than 0.01CV or 0.5µA, whichever is greater. After 1 minute's application of rated voltage, leakage current at 85°C is not more than 0.1CV or 5µA, whichever is greater. After 1 minute's application of derated voltage, leakage current at 125°C is not more than 0.125CV or 6.3µA, whichever is greater. |
| Capacitance Change By Temperature | +15% Max. at +125°C +10% Max. at +85°C -10% Max. at -55°C |

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CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

F72

| Capacitance | | Rated Voltage | | | |
|-------------|------|---------------|-----------|----------|----------|
| µF | Code | 4V (0G) | 6.3V (0J) | 10V (1A) | 16V (1C) |
| 33 | 336 | | | | R |
| 47 | 476 | | | R | R |
| 68 | 686 | | R | R | R |
| 100 | 107 | R | R | R | |
| 150 | 157 | R | R | R | |
| 220 | 227 | R | R | R | M |
| 330 | 337 | R | R | | M |
| 470 | 477 | | | M | |
| 680 | 687 | | | M | |
| 1000 | 108 | | M/M(AH1) | M | |
| 1500 | 158 | | M | | |

F75

| Capacitance | | Rated Voltage | | | |
|-------------|------|---------------|-----------|----------|----------|
| µF | Code | 4V (0G) | 6.3V (0J) | 10V (1A) | 16V (1C) |
| 68 | 686 | | | | C |
| 100 | 107 | | | | C |
| 150 | 157 | | | C | D |
| 220 | 227 | | C | C/D | R |
| 330 | 337 | C | C/D | D | |
| 470 | 477 | C/D | D/U | R/U | |
| 680 | 687 | D | D/R | | |
| 1000 | 108 | D/R | R/U | | |
| 1500 | 158 | R | | | |
| 2200 | 228 | R | M | | |

Released ratings

Please contact to your local AVX sales office when these series are being designed in your application.

RATINGS & PART NUMBER REFERENCE

F72

| AVX Part No. | Case Size | Capacitance (µF) | Rated Voltage (V) | DCL (µA) | DF @ 120Hz (%) | ESR @ 100kHz (Ω) | 100kHz RMS Current (mA) | | | *1 ΔC/C (%) | MSL |
|------------------|-----------|------------------|-------------------|----------|----------------|------------------|-------------------------|------|-------|-------------|-----|
| | | | | | | | 25°C | 85°C | 125°C | | |
| 4 Volt | | | | | | | | | | | |
| F720G107#RC | R | 100 | 4 | 4.0 | 8 | 0.70 | 463 | 417 | 185 | * | 3 |
| F720G157#RC | R | 150 | 4 | 6.0 | 10 | 0.70 | 463 | 417 | 185 | * | 3 |
| F720G227#RC | R | 220 | 4 | 8.8 | 12 | 0.70 | 463 | 417 | 185 | * | 3 |
| F720G337#RC | R | 330 | 4 | 13.2 | 12 | 0.70 | 463 | 417 | 185 | * | 3 |
| 6.3 Volt | | | | | | | | | | | |
| F720J686#RC | R | 68 | 6.3 | 4.3 | 6 | 0.75 | 447 | 402 | 179 | * | 3 |
| F720J107#RC | R | 100 | 6.3 | 6.3 | 8 | 0.70 | 463 | 417 | 185 | * | 3 |
| F720J157#RC | R | 150 | 6.3 | 9.5 | 10 | 0.70 | 463 | 417 | 185 | * | 3 |
| F720J227#RC | R | 220 | 6.3 | 13.9 | 12 | 0.70 | 463 | 417 | 185 | * | 3 |
| F720J337#RC | R | 330 | 6.3 | 20.8 | 12 | 0.70 | 463 | 417 | 185 | * | 3 |
| F720J108#MCAQ2 | M | 1000 | 6.3 | 63.0 | 30 | 0.14 | 1118 | 1006 | 447 | ±15 | 3 |
| F720J108#MCAH1Q2 | M | 1000 | 6.3 | 63.0 | 30 | 0.075 | 1528 | 1375 | 611 | ±15 | 3 |
| F720J158#MCAQ2 | M | 1500 | 6.3 | 95.0 | 45 | 0.14 | 1118 | 1006 | 447 | ±20 | 3 |
| 10 Volt | | | | | | | | | | | |
| F721A476#RC | R | 47 | 10 | 4.7 | 6 | 0.80 | 433 | 390 | 173 | * | 3 |
| F721A686#RC | R | 68 | 10 | 6.8 | 6 | 0.75 | 447 | 402 | 179 | * | 3 |
| F721A107#RC | R | 100 | 10 | 10.0 | 8 | 0.70 | 463 | 417 | 185 | * | 3 |
| F721A157#RC | R | 150 | 10 | 15.0 | 10 | 0.70 | 463 | 417 | 185 | * | 3 |
| F721A227#RC | R | 220 | 10 | 22.0 | 12 | 0.70 | 463 | 417 | 185 | * | 3 |
| F721A477#MCAQ2 | M | 470 | 10 | 47.0 | 30 | 0.14 | 1118 | 1006 | 447 | ±15 | 3 |
| F721A687#MCAQ2 | M | 680 | 10 | 68.0 | 35 | 0.14 | 1118 | 1006 | 447 | ±20 | 3 |
| F721A108#MCAQ2 | M | 1000 | 10 | 200 | 45 | 0.14 | 1118 | 1006 | 447 | ±20 | 3 |
| 16 Volt | | | | | | | | | | | |
| F721C336#RC | R | 33 | 16 | 5.3 | 6 | 0.90 | 408 | 367 | 163 | * | 3 |
| F721C476#RC | R | 47 | 16 | 7.5 | 6 | 0.80 | 433 | 390 | 173 | * | 3 |
| F721C686#RC | R | 68 | 16 | 10.9 | 6 | 0.75 | 447 | 402 | 179 | * | 3 |
| F721C227#MCAQ2 | M | 220 | 16 | 35.2 | 12 | 0.20 | 935 | 842 | 374 | ±20 | 3 |
| F721C337#MCAQ2 | M | 330 | 16 | 52.8 | 45 | 0.20 | 935 | 842 | 374 | ±20 | 3 |

F75

| AVX Part No. | Case Size | Capacitance (µF) | Rated Voltage (V) | DCL (µA) | DF @ 120Hz (%) | ESR @ 100kHz (Ω) | 100kHz RMS Current (mA) | | | *1 ΔC/C (%) | MSL |
|-----------------|-----------|------------------|-------------------|----------|----------------|------------------|-------------------------|------|-------|-------------|-----|
| | | | | | | | 25°C | 85°C | 125°C | | |
| 4 Volt | | | | | | | | | | | |
| F750G337#CC | C | 330 | 4 | 13.2 | 10 | 0.15 | 856 | 771 | 343 | * | 3 |
| F750G477#CC | C | 470 | 4 | 18.8 | 14 | 0.12 | 957 | 862 | 383 | * | 3 |
| F750G477#DC | D | 470 | 4 | 18.8 | 14 | 0.12 | 1118 | 1006 | 447 | * | 3 |
| F750G687#DC | D | 680 | 4 | 27.2 | 18 | 0.12 | 1118 | 1006 | 447 | * | 3 |
| F750G108#DC | D | 1000 | 4 | 40.0 | 24 | 0.12 | 1118 | 1006 | 447 | * | 3 |
| F750G108#RC | R | 1000 | 4 | 40.0 | 24 | 0.12 | 1443 | 1299 | 577 | * | 3 |
| F750G158#RC | R | 1500 | 4 | 60.0 | 30 | 0.12 | 1443 | 1299 | 577 | * | 3 |
| F750G228#RC | R | 2200 | 4 | 88.0 | 45 | 0.07 | 1890 | 1701 | 756 | * | 3 |
| 6.3 Volt | | | | | | | | | | | |
| F750J227#CC | C | 220 | 6.3 | 13.9 | 10 | 0.20 | 742 | 667 | 297 | * | 3 |
| F750J337#CC | C | 330 | 6.3 | 20.8 | 10 | 0.15 | 856 | 771 | 343 | * | 3 |
| F750J337#DC | D | 330 | 6.3 | 20.8 | 10 | 0.15 | 1000 | 900 | 400 | * | 3 |
| F750J477#DC | D | 470 | 6.3 | 29.6 | 14 | 0.12 | 1118 | 1006 | 447 | * | 3 |



F72/F75 Series



Low Profile and High CV Conformal Coated Chip

RATINGS & PART NUMBER REFERENCE

| AVX Part No. | Case Size | Capacitance (μF) | Rated Voltage (V) | DCL (μA) | DF @ 120Hz (%) | ESR @ 100kHz (Ω) | 100kHz RMS Current (mA) | | | *1 ΔC/C (%) | MSL |
|----------------|-----------|------------------|-------------------|----------|----------------|------------------|-------------------------|------|-------|-------------|-----|
| | | | | | | | 25°C | 85°C | 125°C | | |
| F750J477#UC | U | 470 | 6.3 | 29.6 | 15 | 0.10 | 1049 | 944 | 420 | * | 3 |
| F750J687#DC | D | 680 | 6.3 | 42.8 | 18 | 0.12 | 1118 | 1006 | 447 | * | 3 |
| F750J687#RC | R | 680 | 6.3 | 42.8 | 18 | 0.12 | 1443 | 1299 | 577 | * | 3 |
| F750J108#RC | R | 1000 | 6.3 | 63.0 | 24 | 0.12 | 1443 | 1299 | 577 | * | 3 |
| F750J108#UCAQ2 | U | 1000 | 6.3 | 126 | 40 | 0.15 | 856 | 771 | 343 | ±20 | 3 |
| F750J228#MCAQ2 | M | 2200 | 6.3 | 139 | 60 | 0.08 | 1581 | 1423 | 632 | ±20 | 3 |
| 10 Volt | | | | | | | | | | | |
| F751A157#CC | C | 150 | 10 | 15.0 | 10 | 0.22 | 707 | 636 | 283 | * | 3 |
| F751A227#CC | C | 220 | 10 | 22.0 | 10 | 0.20 | 742 | 667 | 297 | * | 3 |
| F751A227#DC | D | 220 | 10 | 22.0 | 10 | 0.20 | 866 | 779 | 346 | * | 3 |
| F751A337#DC | D | 330 | 10 | 33.0 | 10 | 0.15 | 1000 | 900 | 400 | * | 3 |
| F751A477#RC | R | 470 | 10 | 47.0 | 14 | 0.12 | 1443 | 1299 | 577 | * | 3 |
| F751A477#UCAQ2 | U | 470 | 10 | 94.0 | 30 | 0.15 | 856 | 771 | 343 | ±20 | 3 |
| 16 Volt | | | | | | | | | | | |
| F751C686#CC | C | 68 | 16 | 10.9 | 10 | 0.22 | 707 | 636 | 283 | * | 3 |
| F751C107#CC | C | 100 | 16 | 16.0 | 10 | 0.22 | 707 | 636 | 283 | * | 3 |
| F751C157#DC | D | 150 | 16 | 24.0 | 10 | 0.22 | 826 | 743 | 330 | * | 3 |
| F751C227#RC | R | 220 | 16 | 35.2 | 10 | 0.20 | 1118 | 1006 | 447 | * | 3 |

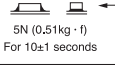
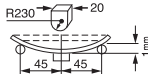
1: ΔC/C Marked ""

#: "M" for ±20% tolerance, "K" for ±10% tolerance.

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

| Item | F72/F75 All Case (%) |
|---------------------------|----------------------|
| Damp Heat | ±10 |
| Temperature cycles | ±5 |
| Resistance soldering heat | ±5 |
| Surge | ±5 |
| Endurance | ±10 |

QUALIFICATION TABLE

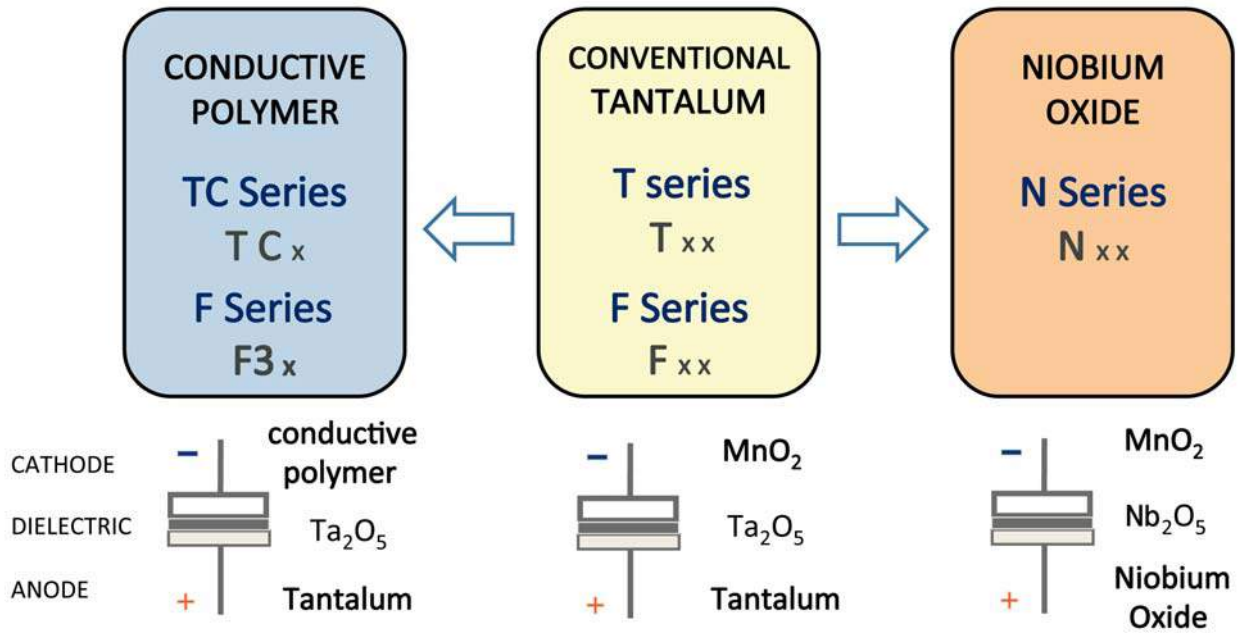
| TEST | F72/F75 series (Temperature range -55°C to +125°C) | |
|-------------------------------------|--|--|
| | Condition | |
| Damp Heat (Steady State) | At 40°C, 90 to 95% R.H., 500 hours (No voltage applied) Capacitance Change Refer to page 174 (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less | |
| Temperature Cycles | At -55°C / +125°C, 30 minutes each, 5 cycles Capacitance Change Refer to page 174 (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less | |
| Resistance to Soldering Heat | 10 seconds reflow at 260°C, 10 seconds immersion at 260°C. Capacitance Change Refer to page 174 (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less | |
| Surge | After application of surge voltage in series with a 33Ω resistor at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 85°C, capacitors shall meet the characteristic requirements in the table above. Capacitance Change Refer to page 174 (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less | |
| Endurance | After 2000 hours' application of rated voltage at 85°C, capacitors shall meet the characteristic requirements in the table above. Capacitance Change Refer to page 174 (*1) Dissipation Factor Initial specified value or less Leakage Current Initial specified value or less | |
| Shear Test | After applying the pressure load of 5N for 10±1 seconds horizontally to the center of capacitor side body which has no electrode and has been soldered beforehand on a substrate, there shall be found neither exfoliation nor its sign at the terminal electrode.  | |
| Terminal Strength | Keeping a capacitor surface-mounted on a substrate upside down and supporting the substrate at both of the opposite bottom points 45mm apart from the center of capacitor, the pressure strength is applied with a specified jig at the center of substrate so that the substrate may bend by 1mm as illustrated. Then, there shall be found no remarkable abnormality on the capacitor terminals.  | |

F72/F75 Series

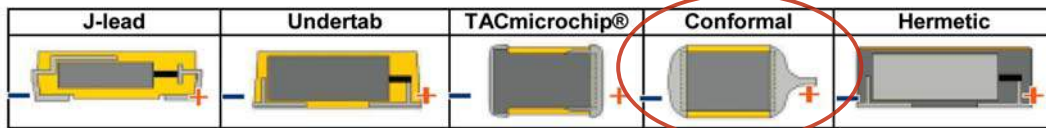


Low Profile and High CV Conformal Coated Chip

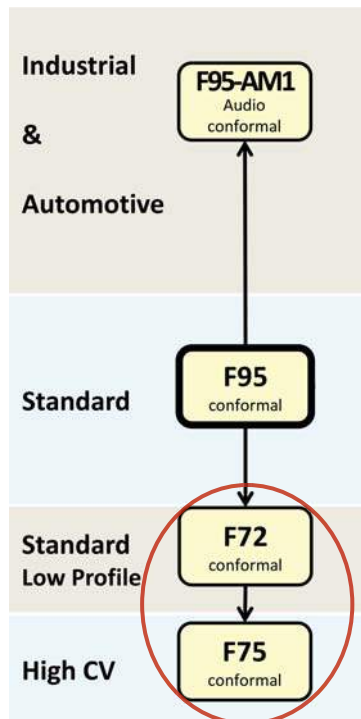
AVX SOLID ELECTROLYTIC CAPACITOR ROADMAP



Five Capacitor Construction Styles



SERIES LINE UP: CONFORMAL Ta MnO₂



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