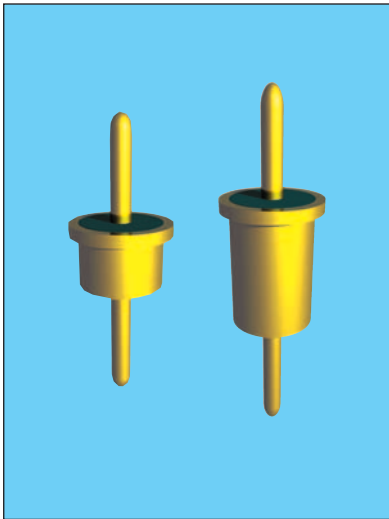


Solder-In Style High Temp EMI Filters

ZS/ZR Series – .128 Dia. – Circuits Available – C & L



APPLICATIONS

The ZS series provides effective filtering in the MICROWAVE frequency spectrum from 10 MHz through 26 GHz. Designed to be soldered into a package, bracket or bulkhead (and maintain hermeticity), it is ideal for high impedance circuits where large capacitance values are not practical. In the “L” section version an internal ferrite bead element provides both induc-

tance and series resistance (lossy characteristic) which improves insertion loss and provides superior transient performance.

Alternate lead lengths or special capacitance values may be ordered.

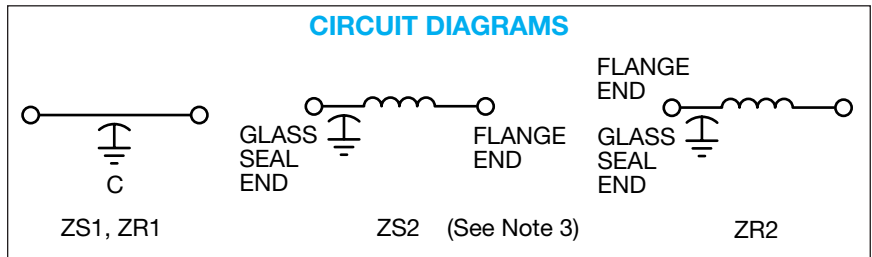
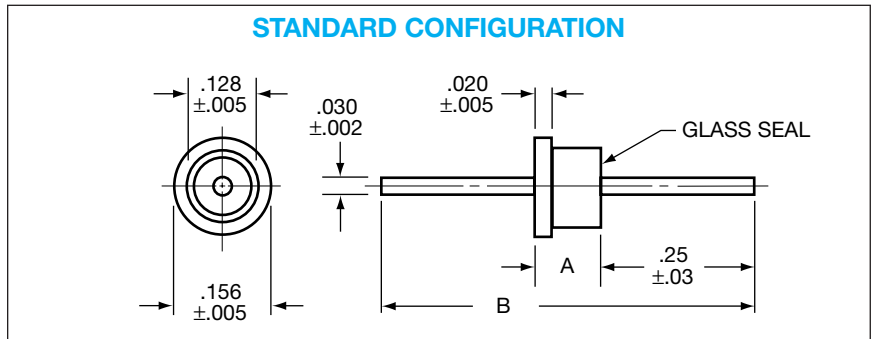
Custom packages or bracket assemblies utilizing this feedthru can be furnished to your specifications.

CHARACTERISTICS

- Meets or exceeds the applicable portions of MIL-F-28861/12. See QPL listings.
- High temperature construction withstands 300°C installation temperatures.
- Features rugged monolithic discoidal capacitor construction.
- Glass hermetic seal on one end with epoxy seal on the opposite end.
- High purity gold plating provides excellent solderability or compatibility with thermal and ultrasonic wire bonding.

SPECIFICATIONS

1. Plating: Gold standard –
Silver and solder coat available
2. Material:
Case: Cold rolled steel
Leads: Alloy 52 steel
3. Operating Temperature Range:
-55°C to +125°C
4. Insulation Resistance:
At 25°C: 1,000 megohm-microfarad min., or 100,000 megohms min., whichever is less
At 125°C: 100 megohm-microfarad min., or 10,000 megohms min., whichever is less
5. Dielectric Withstanding Voltage (DWW):
R-level designs:
2.0 times rated DC voltage
Class B, Class S designs:
2.5 times rated DC voltage
6. DC Resistance (DCR): .01 ohm, maximum
7. Dissipation Factor (DF): 3% maximum
8. Rated DC Current: 5 Amps, maximum
9. Maximum Installation Temperature: 300°C
10. Supplied with 60/40 solder preform for easy installation
11. Insertion Loss for the “C” and “L” circuits are equivalent due to the saturation characteristic of the ferrite bead element at full rated current. At lower currents the “L” becomes much more effective.



millimeters (inches)

| | |
|-------------|--------------|
| 0.05 (.002) | 3.25 (.128) |
| 0.13 (.005) | 3.96 (.156) |
| 0.51 (.020) | 5.08 (.200) |
| 0.76 (.030) | 6.4 (.25) |
| 0.8 (.03) | 15.88 (.625) |
| 2.79 (.110) | 18.16 (.715) |

(See Note 4)

| Circuit Diagram | Dimensions | |
|-----------------|------------|-----------|
| | A ±.005 | B Nom. |
| L | .200 | .715 |
| C | .110 | .625 |

Notes:

1. Outline drawing shows standard ZS configuration. Also available with glass seal at the opposite end, ZR reverse configuration.
2. MIL-F-28861/12 style FS70 equivalent to standard ZS configuration. Style FS71 is reverse ZR configuration.
3. For ZS2 or ZR2 L-Section Filters inductor always positioned at epoxy-filled end.
4. Metric equivalent dimensions given for information only.

MIL-F-28861/12 (See Note 2)

| Dash No. | Style |
|------------------------------|-------|
| 001 through 016, 033 and 034 | FS70 |
| 017 through 032, 035 and 036 | FS71 |

Solder-In Style High Temp EMI Filters

ZS/ZR Series – .128 Dia. – Circuits Available – C & L

SPECIFICATIONS

| AVX P/N | Current AMP | CKT | DC Voltage | CAP ¹ Min. | Insertion Loss ² Per MIL-STD-220, +25°C | | | | | |
|------------|-------------|-----|------------|-----------------------|--|-------|--------|---------|----------|--------|
| | | | | | 500 KHz | 1 MHz | 10 MHz | 100 MHz | 1000 MHz | 10 GHz |
| ZS1C2-501H | 5 | C | 50 | 500 | – | – | – | 15 | 30 | 50 |
| ZS1C2-102H | 5 | C | 50 | 1000 | – | – | 4 | 20 | 31 | 55 |
| ZS1C2-122H | 5 | C | 50 | 1200 | – | – | 5 | 20 | 35 | 55 |
| ZS1C2-272H | 5 | C | 50 | 2700 | – | – | 10 | 25 | 40 | 60 |
| ZS1C2-502H | 5 | C | 50 | 5000 | – | – | 15 | 30 | 45 | 60 |
| ZS1C2-103H | 5 | C | 50 | .010 | – | 4 | 20 | 35 | 48 | 60 |
| ZS1C2-153H | 5 | C | 50 | .015 | – | 7 | 25 | 40 | 50 | 60 |
| ZS2C2-501H | 5 | L | 50 | 500 | – | – | – | 15 | 30 | 50 |
| ZS2C2-102H | 5 | L | 50 | 1000 | – | – | 4 | 20 | 33 | 55 |
| ZS2C2-122H | 5 | L | 50 | 1200 | – | – | 5 | 20 | 37 | 55 |
| ZS2C2-272H | 5 | L | 50 | 2700 | – | – | 10 | 25 | 40 | 60 |
| ZS2C2-502H | 5 | L | 50 | 5000 | – | – | 15 | 30 | 45 | 60 |
| ZS2C2-103H | 5 | L | 50 | .010 | – | 4 | 20 | 38 | 50 | 60 |
| ZS2C2-153H | 5 | L | 50 | .015 | – | 7 | 25 | 42 | 50 | 60 |
| ZS1A2-101H | 5 | C | 100 | 100 | – | – | – | 3 | 20 | 30 |
| ZS1A2-501H | 5 | C | 100 | 500 | – | – | – | 15 | 30 | 50 |
| ZS1A2-102H | 5 | C | 100 | 1000 | – | – | 4 | 20 | 31 | 55 |
| ZS1A2-122H | 5 | C | 100 | 1200 | – | – | 5 | 20 | 35 | 55 |
| ZS1A2-272H | 5 | C | 100 | 2700 | – | – | 10 | 25 | 40 | 60 |
| ZS1A2-502H | 5 | C | 100 | 5000 | – | – | 15 | 30 | 45 | 60 |
| ZS1A2-103H | 5 | C | 100 | .010 | – | 4 | 20 | 35 | 48 | 60 |
| ZS1A2-153H | 5 | C | 100 | .015 | – | 7 | 25 | 40 | 50 | 60 |
| ZS2A2-100H | 5 | L | 100 | 10 | – | – | – | – | 5 | 10 |
| ZS2A2-250H | 5 | L | 100 | 25 | – | – | – | – | 10 | 15 |
| ZS2A2-101H | 5 | L | 100 | 100 | – | – | – | 3 | 20 | 30 |
| ZS2A2-501H | 5 | L | 100 | 500 | – | – | – | 15 | 30 | 50 |
| ZS2A2-102H | 5 | L | 100 | 1000 | – | – | 4 | 20 | 33 | 55 |
| ZS2A2-122H | 5 | L | 100 | 1200 | – | – | 5 | 20 | 37 | 55 |
| ZS2A2-272H | 5 | L | 100 | 2700 | – | – | 10 | 25 | 40 | 60 |
| ZS2A2-502H | 5 | L | 100 | 5000 | – | – | 15 | 30 | 45 | 60 |
| ZS2A2-103H | 5 | L | 100 | .010 | – | 4 | 20 | 38 | 50 | 60 |
| ZS2A2-153H | 5 | L | 100 | .015 | – | 7 | 25 | 42 | 50 | 60 |

continued

¹ Decimal point values indicate capacitance in microfarads.
Non-decimal point values indicate capacitance in picofarads.

² Insertion loss limits are based on theoretical values.
Actual measurements may vary due to internal capacitor resonances and other design constraints.

NOTE: AVX Filters' Standard configurations (e.g. ZS, YS, XS, WS) have the hermetic glass seal opposite the flange end. All parts are capable of the reverse configuration with the glass seal at the flange end. All parameters are otherwise identical. The part number changes from "S" to "R" (e.g., standard = ZS1C2-153H; reverse = ZR1C2-153H).

For special multi-unit assemblies see Multi-Component Filter Brackets section.

Solder-In Style High Temp EMI Filters

ZS/ZR Series – .128 Dia. – Circuits Available – C & L

SPECIFICATIONS

| AVX P/N | Current AMP | CKT | DC Voltage | CAP ¹ Min. | Insertion Loss ² Per MIL-STD-220, +25°C | | | | | |
|------------|----------------|-----|---------------|--------------------------|--|----------|-----------|------------|-------------|-----------|
| | | | | | 500 KHz | 1 MHz | 10 MHz | 100 MHz | 1000 MHz | 10 GHz |
| ZS1B2-100H | 5 | C | 200 | 10 | – | – | – | – | 4 | 10 |
| ZS1B2-250H | 5 | C | 200 | 25 | – | – | – | – | 10 | 15 |
| ZS1B2-101H | 5 | C | 200 | 100 | – | – | – | 3 | 20 | 30 |
| ZS1B2-501H | 5 | C | 200 | 500 | – | – | – | 15 | 30 | 50 |
| ZS1B2-102H | 5 | C | 200 | 1000 | – | – | 4 | 20 | 31 | 55 |
| ZS1B2-122H | 5 | C | 200 | 1200 | – | – | 5 | 20 | 35 | 55 |
| ZS1B2-272H | 5 | C | 200 | 2700 | – | – | 10 | 25 | 40 | 60 |
| ZS2B2-100H | 5 | L | 200 | 10 | – | – | – | – | 5 | 10 |
| ZS2B2-250H | 5 | L | 200 | 25 | – | – | – | – | 10 | 15 |
| ZS2B2-101H | 5 | L | 200 | 100 | – | – | – | 3 | 20 | 30 |
| ZS2B2-501H | 5 | L | 200 | 500 | – | – | – | 15 | 30 | 50 |
| ZS2B2-102H | 5 | L | 200 | 1000 | – | – | 4 | 20 | 33 | 55 |
| ZS2B2-122H | 5 | L | 200 | 1200 | – | – | 5 | 20 | 37 | 55 |
| ZS2B2-272H | 5 | L | 200 | 2700 | – | – | 10 | 25 | 40 | 60 |

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