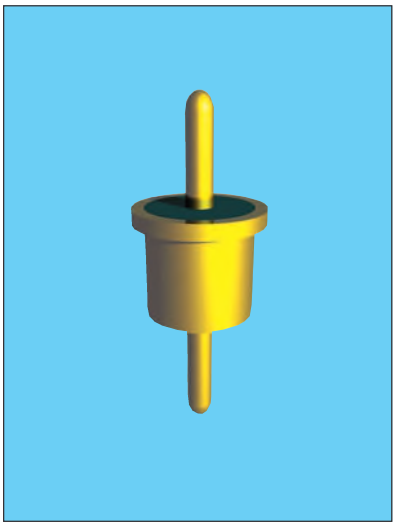
Solder-In Style High Temp EMI Filters

ZZ Series – .118 Dia. – Circuits Available - C



APPLICATIONS

The ZZ series is intended for use as a high reliability alternative to a commonly available commercial filter type. Due to its smaller body diameter, capacitance is limited. It does provide effective filtering in the MICROWAVE frequency spectrum from 100 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.

Alternate lead lengths or special capacitance values are available upon request.

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

CHARACTERISTICS

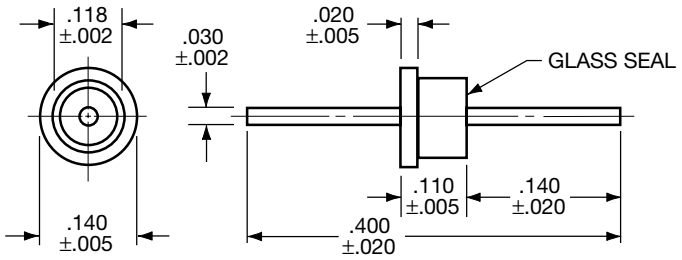
- High temperature construction withstands 300°C installation temperatures.
- Features rugged monolithic discoidal capacitor construction.
- Glass hermetic seal on one end with epoxy seal on the opposite end.
- High purity gold plating provides excellent solderability or compatibility with thermal and ultrasonic wire bonding.

SPECIFICATIONS

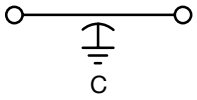
1. Finish: Gold standard –
   Silver and solder coat available
2. Material:
   Case: Cold rolled steel
   Leads: Alloy 52 steel
3. Operating Temperature Range:
   -55°C to +125°C
4. Insulation Resistance:
   At 25°C: 1,000 megohm-microfarad min., or 100,000 megohms min., whichever is less
   At 125°C: 100 megohm-microfarad min., or 10,000 megohms min., whichever is less
5. Dielectric Withstanding Voltage (DWV):
   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

STANDARD CONFIGURATION

(See Note 1)



CIRCUIT DIAGRAMS



ZZ1

millimeters (inches)

0.05 (.002)	3.05 (.120)
0.13 (.005)	3.43 (.135)
0.51 (.020)	3.56 (.140)
1.02 (.040)	3.68 (.145)
2.79 (.110)	10.16 (.400)
2.95 (.116)	— —

(See Note 2)

Notes:

1. Glass seal on end opposite flange.
2. Metric equivalent dimensions given for information only.

Solder-In Style High Temp EMI Filters

ZZ Series – .118 Dia. – Circuits Available – C

SPECIFICATIONS

					Insertion Loss[2] Per MIL-STD-220, +25°C				
AVX P/N	Current AMP	CKT	DC Voltage	CAP[1] Min.	1 MHz	10 MHz	100 MHz	1000 MHz	10 GHz
ZZ1C3-250H	5	C	50	25	–	–	–	10	15
ZZ1C3-500H	5	C	50	50	–	–	1	15	25
ZZ1C3-101H	5	C	50	100	–	–	3	20	30
ZZ1C3-102H	5	C	50	1000	–	4	20	31	55
ZZ1C3-152H	5	C	50	1500	–	5	21	42	55
ZZ1A3-250H	5	C	100	25	–	–	–	10	15
ZZ1A3-500H	5	C	100	50	–	–	1	15	25
ZZ1A3-101H	5	C	100	100	–	–	3	20	30
ZZ1A3-102H	5	C	100	1000	–	4	18	36	55
ZZ1A3-152H	5	C	100	1500	–	5	21	42	55
ZZ1B3-250H	5	C	200	25	–	–	–	10	15
ZZ1B3-500H	5	C	200	50	–	–	1	15	25
ZZ1B3-101H	5	C	200	100	–	–	3	20	30
ZZ1B3-102H	5	C	200	1000	–	4	18	36	55

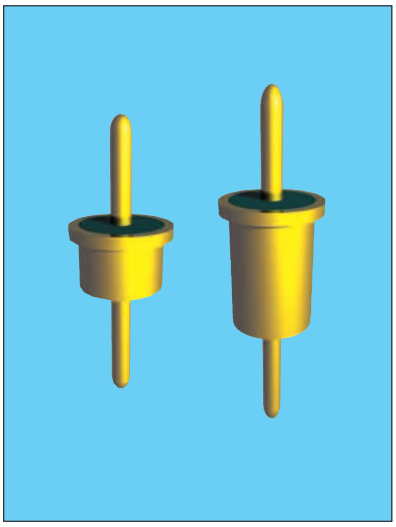
[1] Decimal point values indicate capacitance in microfarads.
Non-decimal point values indicate capacitance in picofarads.

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

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



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 inductance 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.

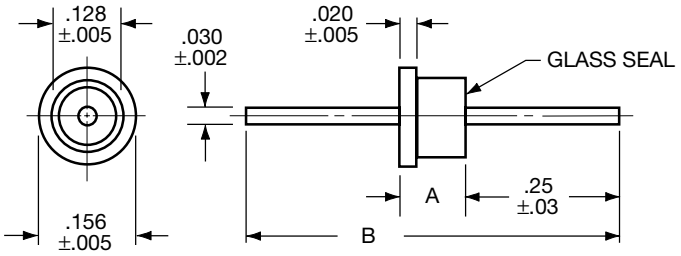
CHARACTERISTICS

- 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.

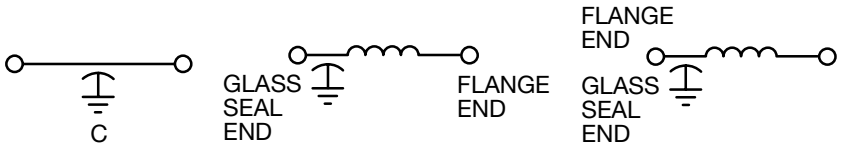
SPECIFICATIONS

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 (DWV):
   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.

STANDARD CONFIGURATION



CIRCUIT DIAGRAMS



ZS1, ZR1 ZS2 (See Note 3) ZR2

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	Dimensions 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

					Insertion Loss[2] Per MIL-STD-220, +25°C					
AVX P/N	Current AMP	CKT	DC Voltage	CAP[1] Min.	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

					Insertion Loss[2] Per MIL-STD-220, +25°C					
AVX P/N	Current AMP	CKT	DC Voltage	CAP[1] Min.	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

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

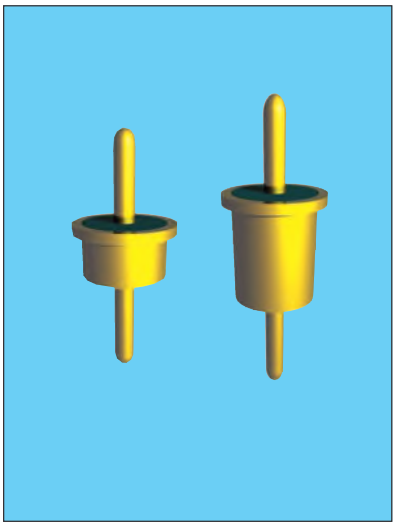
[2] Insertion loss limits are based on theoretical values.
Actual measurements may vary due to internal capacitor resonances and other design constraints.

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

YS/YR Series – .165 Dia. – Circuits Available – C & L



APPLICATIONS

The YS series provides increased filtering in the MICROWAVE frequency spectrum from 1 MHz through 10 GHz. Previously unavailable in the industry as a solder-in device, this unique design offers higher values of capacitance than were previously available. 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 inductance 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.

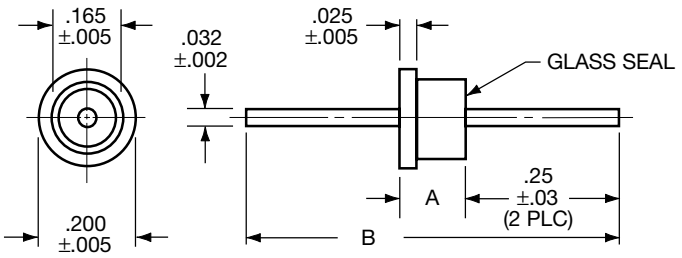
CHARACTERISTICS

- Meets or exceeds the applicable portions of MIL-F-28861/15. 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.

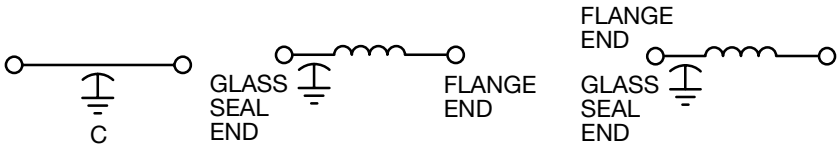
SPECIFICATIONS

1. Plating: Gold standard – Silver 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 (DWV):
   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.

STANDARD CONFIGURATION



CIRCUIT DIAGRAMS



YS1, YR1 YS2 (See Note 3) YR2

millimeters (inches)

0.05 (.002)	4.19 (.165)
0.13 (.005)	5.08 (.200)
0.64 (.025)	6.35 (.250)
0.8 (.03)	16.51 (.650)
0.81 (.032)	19.05 (.750)
3.81 (.150)	— —

(See Note 4)

Circuit Diagram	Dimensions A ±.005	Dimensions B Ref.
L	.250	.750
C	.150	.650

Notes:

1. Outline drawing shows standard YS configuration. Also available with glass seal at the opposite end, YR reverse configuration.
2. MIL-F-28861/15 style A equivalent to standard YS configuration. Style B is reverse YR configuration.
3. For YS2 or YR2 L-Section Filters inductor always positioned at epoxy-filled end.
4. Metric equivalent dimensions given for information only.

MIL-F-28861/15 (See Note 2)

Dash No.	Config.
001 through 004	A
005 through 008	B

Solder-In Style High Temp EMI Filters

YS/YR Series – .165 Dia. – Circuits Available – C & L

SPECIFICATIONS

					Insertion Loss[2] Per MIL-STD-220, +25°C					
AVX P/N	Current AMP	CKT	DC Voltage	CAP[1] Min.	500 KHz	1 MHz	10 MHz	100 MHz	1000 MHz	10 GHz
YS1C2-152H	5	C	50	1500	–	–	5	21	42	55
YS1C2-502H	5	C	50	5000	–	–	15	34	50	60
YS1C2-103H	5	C	50	.010	–	4	20	35	53	60
YS1C2-153H	5	C	50	.015	–	7	25	40	55	60
YS1C2-203H	5	C	50	.020	–	8	27	41	60	65
YS1C2-273H	5	C	50	.027	4	10	30	42	65	70
YS1C2-503H	5	C	50	.050	9	15	35	44	70	70
YS1C2-753H	5	C	50	.075	12	18	37	46	70	70
YS1C2-104H	5	C	50	.1	14	20	38	48	70	70
YS2C2-152H	5	L	50	1500	–	–	6	22	48	55
YS2C2-502H	5	L	50	5000	–	–	15	35	55	60
YS2C2-103H	5	L	50	.010	–	4	20	36	57	60
YS2C2-153H	5	L	50	.015	–	7	25	45	60	60
YS2C2-203H	5	L	50	.020	–	8	27	46	62	65
YS2C2-273H	5	L	50	.027	4	10	30	48	65	70
YS2C2-503H	5	L	50	.050	9	15	36	50	70	70
YS2C2-753H	5	L	50	.075	12	18	37	51	70	70
YS2C2-104H	5	L	50	.1	14	20	39	52	70	70
YS1A2-152H	5	C	100	1500	–	–	5	21	42	55
YS1A2-502H	5	C	100	5000	–	–	15	34	50	60
YS1A2-103H	5	C	100	.010	–	4	20	35	53	60
YS1A2-153H	5	C	100	.015	–	7	25	40	55	60
YS1A2-203H	5	C	100	.020	–	8	27	41	60	65
YS1A2-273H	5	C	100	.027	–	10	30	42	65	70
YS1A2-503H	5	C	100	.050	9	15	35	44	70	70
YS1A2-753H	5	C	100	.075	12	18	37	46	70	70
YS2A2-152H	5	L	100	1500	–	–	6	22	48	55
YS2A2-502H	5	L	100	5000	–	–	15	35	55	60
YS2A2-103H	5	L	100	.010	–	4	20	36	57	60
YS2A2-153H	5	L	100	.015	–	7	25	45	60	60
YS2A2-203H	5	L	100	.020	–	8	27	46	62	65
YS2A2-273H	5	L	100	.027	–	10	30	48	65	70
YS2A2-503H	5	L	100	.050	9	15	36	50	70	70
YS2A2-753H	5	L	100	.075	12	18	37	51	70	70

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

YS/YR Series – .165 Dia. – Circuits Available – C & L

SPECIFICATIONS

					Insertion Loss[2] Per MIL-STD-220, +25°C					
AVX P/N	Current AMP	CKT	DC Voltage	CAP[1] Min.	500 KHz	1 MHz	10 MHz	100 MHz	1000 MHz	10 GHz
YS1B2-152H	5	C	200	1500	–	–	5	21	42	55
YS1B2-502H	5	C	200	5000	–	–	15	34	50	60
YS1B2-103H	5	C	200	.010	–	4	20	35	53	60
YS1B2-153H	5	C	200	.015	–	7	25	40	55	60
YS1B2-203H	5	C	200	.020	–	8	27	41	60	65
YS1B2-273H	5	C	200	.027	4	10	30	42	65	70
YS2B2-152H	5	L	200	1500	–	–	6	22	48	55
YS2B2-502H	5	L	200	5000	–	–	15	35	55	60
YS2B2-103H	5	L	200	.010	–	4	20	36	57	60
YS2B2-153H	5	L	200	.015	–	7	25	45	60	60
YS2B2-203H	5	L	200	.020	–	8	27	46	62	65
YS2B2-273H	5	L	200	.027	4	10	30	48	65	70

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

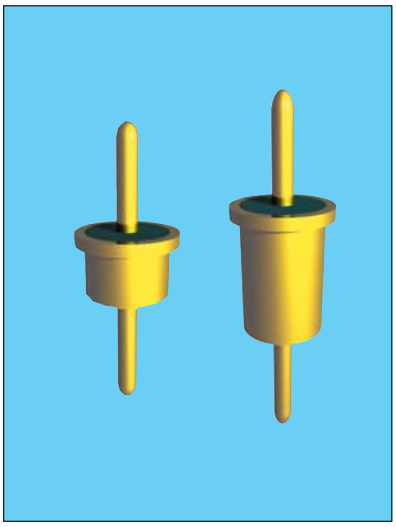
[2] Insertion loss limits are based on theoretical values.
Actual measurements may vary due to internal capacitor resonances and other design constraints.

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

XS/XR Series – .250 Dia. – Circuits Available – C & L



APPLICATIONS

The XS series expands upon the YS offering by providing additional filtering in the HF through MICROWAVE frequency spectrum from 500 KHz up to 10 GHz. The larger diameter of the XS series means that even higher values of capacitance and a rated DC current of 10 Amps are available. Designed to be soldered into a package, bracket or bulkhead (and maintain hermeticity), it is ideal for medium to high impedance circuits where significant amounts of capacitance to ground can be tolerated. In the "L" section version an internal ferrite bead element provides both inductance 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.

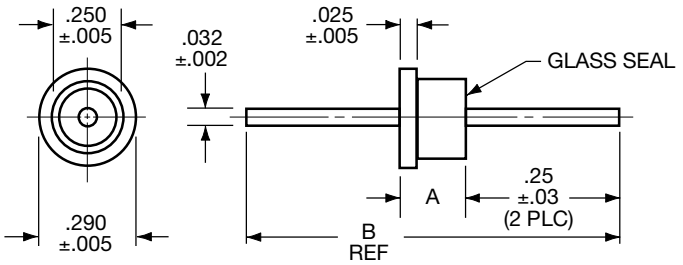
CHARACTERISTICS

- Meets or exceeds the applicable portions of MIL-F-28861/14. 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.

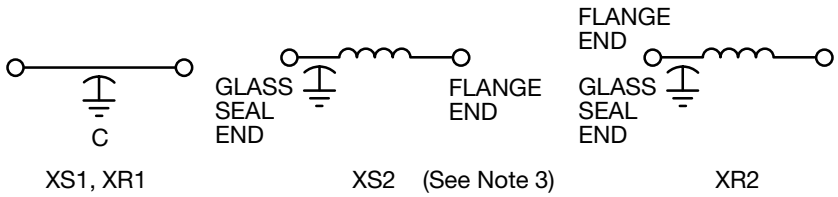
SPECIFICATIONS

1. Plating: Gold standard – Silver 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 (DWV):
   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.

STANDARD CONFIGURATION



CIRCUIT DIAGRAMS



millimeters (inches)

0.05 (.002)	3.81 (.150)
0.13 (.005)	6.35 (.250)
0.64 (.025)	7.37 (.290)
0.8 (.03)	16.51 (.650)
0.81 (.032)	19.05 (.750)

(See Note 4)

Circuit Diagram	Dimensions A ±.005	Dimensions B Ref.
L	.250	.750
C	.150	.650

Notes:

1. Outline drawing shows standard XS configuration. Also available with glass seal at the opposite end, XR reverse configuration.
2. MIL-F-28861/14 configuration A is equivalent to standard XS configuration. B is reverse XR configuration.
3. For XS2 or XR2 L-Section Filters inductor always positioned at epoxy-filled end.
4. Metric equivalent dimensions given for information only.

MIL-F-28861/14 (See Note 2)

Dash No.	Config.
001 through 006	A STD
007 through 012	B REV

Solder-In Style High Temp EMI Filters

XS/XR Series – .250 Dia. – Circuits Available – C & L

SPECIFICATIONS

					Insertion Loss[2] Per MIL-STD-220, +25°C					
AVX P/N	Current AMP	CKT	DC Voltage	CAP[1] Min.	500 KHz	1 MHz	10 MHz	100 MHz	1000 MHz	10 GHz
XS1C2-503H	5	C	50	.050	9	15	35	44	70	70
XS1C2-753H	5	C	50	.075	12	18	37	46	70	70
XS1C2-104H	5	C	50	.1	14	20	38	48	70	70
XS1C2-154H	5	C	50	.15	17	24	38	50	70	70
XS1C2-254H	5	C	50	.25	21	31	40	55	70	70
XS2C2-503H	5	L	50	.050	9	15	36	50	70	70
XS2C2-753H	5	L	50	.075	12	18	37	51	70	70
XS2C2-104H	5	L	50	.1	14	20	39	52	70	70
XS2C2-154H	5	L	50	.15	17	26	40	53	70	70
XS2C2-254H	5	L	50	.25	21	31	40	56	70	70
XS1A2-503H	5	C	100	.050	9	15	35	44	70	70
XS1A2-753H	5	C	100	.075	12	18	37	46	70	70
XS1A2-104H	5	C	100	.1	14	20	38	48	70	70
XS2A2-503H	5	L	100	.050	9	15	36	50	70	70
XS2A2-753H	5	L	100	.075	12	18	37	51	70	70
XS2A2-104H	5	L	100	.1	14	20	39	52	70	70
XS1B2-153H	5	C	200	.015	–	5	25	40	55	60
XS1B2-223H	5	C	200	.022	2	8	26	40	58	70
XS2B2-153H	5	L	200	.015	–	5	25	45	60	60
XS2B2-223H	5	L	200	.022	2	8	27	45	65	70
XS1L2-103H	5	C	300	.010	–	3	20	35	52	60
XS2L2-103H	5	L	300	.010	–	3	20	38	55	60

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

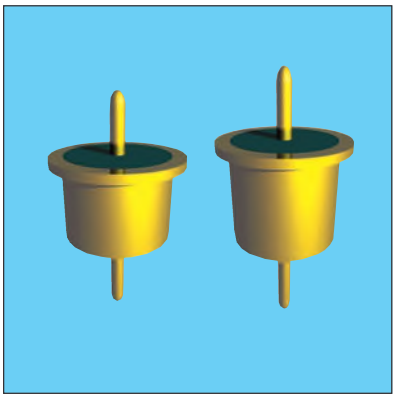
[2] Insertion loss limits are based on theoretical values.
Actual measurements may vary due to internal capacitor resonances and other design constraints.

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

WS/WR Series – .400 Dia. – Circuits Available – C & L



APPLICATIONS

The WS series expands greatly upon the XS and YS offerings by providing increased filtering in the HF through MICROWAVE frequency spectrum from 500 KHz up to 10 GHz. The larger diameter of the WS series means even higher values of capacitance, a rated DC current of 15 Amps, plus 125 VAC/400 Hz ratings are available. Designed to be soldered into a package, bracket or bulkhead (and maintain hermeticity), it is ideal for low to medium impedance circuits where large amounts of capacitance to ground can be tolerated. In the "L" section version an internal ferrite bead element provides both inductance 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.

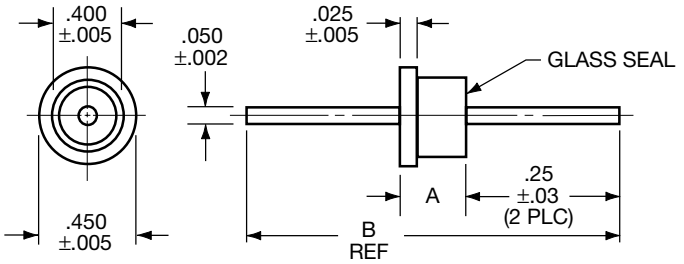
CHARACTERISTICS

- Meets or exceeds the applicable portions of MIL-F-28861/13. 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.

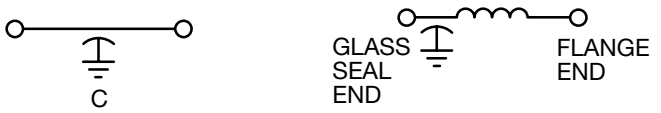
SPECIFICATIONS

1. Plating: Gold standard – Silver 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 (DWV):
   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: 15 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.

STANDARD CONFIGURATION



CIRCUIT DIAGRAMS



WS1, WR1 WS2, WR2 (See Note 3)

millimeters (inches)

0.05 (.002)	6.35 (.250)
0.13 (.005)	7.62 (.300)
0.64 (.025)	10.16 (.400)
0.8 (.03)	11.43 (.450)
1.27 (.050)	17.78 (.700)
5.08 (.200)	20.32 (.800)

(See Note 4)

Circuit Diagram	Dimensions A ±.005	Dimensions B Ref.
L	.300	.800
C	.200	.700

Notes:

1. Outline drawing shows standard WS configuration. Also available with glass seal at the opposite end, WR reverse configuration.
2. MIL-F-28861/13 configuration "A" is equivalent to standard WS configuration. "B" is reverse WR configuration.
3. For WS2 or WR2 L-Section Filters inductor always positioned at epoxy-filled end.
4. Metric equivalent dimensions given for information only.

MIL-F-28861/13 (See Note 2)

Dash No.	Config.
001 through 008	A
009 through 016	B

Solder-In Style High Temp EMI Filters

WS/WR Series – .400 Dia. – Circuits Available – C & L

SPECIFICATIONS

					Insertion Loss[2] Per MIL-STD-220, +25°C					
AVX P/N	Current AMP	Circuit	DC Voltage	CAP[1] Min.	500 KHz	1 MHz	10 MHz	100 MHz	1000 MHz	10 GHz
WS1C2-154H	15	C	50	.15	17	24	38	50	70	70
WS1C2-504H	15	C	50	.50	26	34	42	58	70	70
WS1C2-754H	15	C	50	.75	31	37	43	62	70	70
WS1C2-125H	15	C	50	1.2	33	37	52	70	70	70
WS2C2-154H	15	L	50	.15	17	26	40	53	70	70
WS2C2-504H	15	L	50	.50	26	36	44	60	70	70
WS2C2-754H	15	L	50	.75	31	40	44	64	70	70
WS2C2-125H	15	L	50	1.2	33	38	53	70	70	70
WS1N2-704H	15	C	70	.70	30	36	41	60	70	70
WS2N2-704H	15	L	70	.70	30	38	42	62	70	70
WS1A2-154H	15	C	100	.15	17	24	38	50	70	70
WS1A2-504H	15	C	100	.50	26	34	42	58	70	70
WS1A2-754H	15	C	100	.75	31	37	43	62	70	70
WS1A2-105H	15	C	100	1.0	31	40	48	64	70	70
WS2A2-154H	15	L	100	.15	17	26	40	53	70	70
WS2A2-504H	15	L	100	.50	26	34	44	60	70	70
WS2A2-754H	15	L	100	.75	31	40	44	64	70	70
WS2A2-105H	15	L	100	1.0	31	41	50	65	70	70
WS1L2-503H	15	C	200*	.050	7	15	34	42	70	70
WS1L2-154H	15	C	200*	.15	17	24	38	50	70	70
WS2L2-503H	15	L	200*	.050	7	15	34	44	70	70
WS2L2-154H	15	L	200*	.15	17	26	40	53	70	70
WS1E2-103H	15	C	400	.010	–	4	20	34	50	60
WS1E2-503H	15	C	400	.050	7	15	34	44	70	70
WS2E2-103H	15	L	400	.010	–	4	20	35	55	60
WS2E2-503H	15	L	400	.050	7	15	34	44	70	70

* Rated 200 VDC or 125 VAC/400 Hz.

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

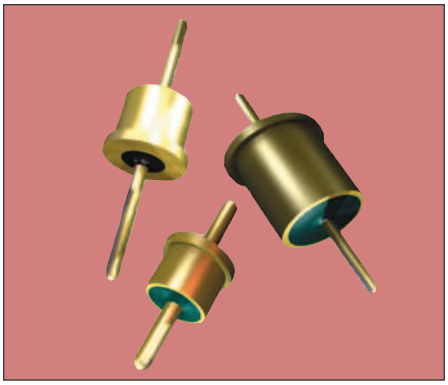
[2] Insertion loss limits are based on theoretical values. Actual measurements may vary due to internal capacitor resonances and other design constraints.

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).

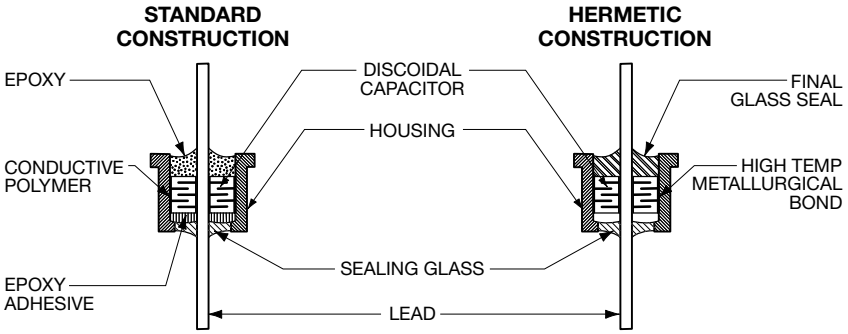
For special multi-unit assemblies see Multi-Component Filter Brackets section.

Advanced Technology Filters

Hermetic High Temperature Solder-Ins



AVX FILTERS
SOLDER-IN STYLE FILTER



GENERAL DESCRIPTION

These are high frequency filters in space saving solder-in designs which will operate under harsh environments and meet the high reliability requirements of MIL-F-28861 without outgassing. AVX Filters Corporation has designed a filter which sets a new standard for the industry. These feed-thru filters are constructed with hi-rel semiconductor materials and rugged MLC discoidal capacitors. They are also manufactured at high temperatures (>500°C) without fluxes, epoxies or other polymers, thus eliminating failure mechanisms associated with conventional solder-ins. These solder-ins withstand short temperature excursions as high as 400°C, and can actually be operated at temperatures to 200°C. Available either as discrete packages in standard case sizes or as multiple filter brackets, all have hermetic glass-to-metal seals on both ends.

FEATURES

- Standard sizes
- Epoxy free construction
- Hermetic on both ends
- MIL-C-123 Discoidal Capacitor
- 400°C installation

STYLE

- Discrete, hermetically sealed solder-in filters

  AVX Filters Series*

  WQ: .400" Case Diameter
  XQ: .250" Case Diameter
  YQ: .165" Case Diameter
  ZQ: .128" Case Diameter

  *Equivalent to MIL-F-28861 Series FS70, FS71, FS72, FS73 and FS74
- Custom design available
- Multiple filter arrays
  - Custom bracket housing employing discrete hermetic filters
  - Custom rugged bracket housings with inter-rated hermetic filtered feed-thrus

SPECIFICATIONS

- Operating temperature range: -55°C to 200°C
- 400°C rated installation temperature
- Voltage range: 50 to 300 VDC/up to 200 VAC
- Capacitance Range: 10 pF to 1.4 mF
- Hermeticity: 1 x 10^{-7} ATM cm^3/sec minimum
- Rated current: up to 25 amps
- Circuits: C
- Designed to meet or exceed requirements of MIL-F-28861

CHARACTERISTICS

- Rugged monolithic ceramic capacitor construction
- Capacitor attached with solderless, fluxless, high temperature metallurgical bond
- Hermetic glass-to-metal seals on both ends
- No epoxies, resins or polymers to outgas or degrade in harsh environments

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

Данный компонент на территории Российской Федерации

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http://moschip.ru/get-element

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Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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