SPECTRUM
Advanced Specialty
PRODUCTS

Series 100 Chip-Cap Filtered Connectors

These versatile and widely used PCB connectors are an inexpensive filtering method that eliminates the problem of conducted electromagnetic interference (EMI).

Chip-cap plug and receptacles are available in 9, 15, 25 and 37 positions. These connectors are “drop-in” replacements for nonfiltered D-subminiature connectors with matched PCB footprints. Housings are made of UL 94V-0 rated thermoplastic material. Low cost front metal shells are compatible with full metal-shell threaded insert mating hardware. Integral boardlocks secure posted connectors to the PC board, prior to soldering.

Features

- Offer economical, high performance EMI/RFI protection
- Matched .318", .405" and .590" PCB footprints mean “Drop-in” replacement for nonfiltered connectors
- Low cost chip capacitors
- Connectors have industry standard interface
- Connector insulators made of UL 94V-0 rated high temperature, thermoplastic
- Connector body is recognized under the Component Program of Underwriters Laboratories, Inc. (E149046)
- Connector body is certified by the Canadian Standards Association

Mechanical Specifications

Shells . . . . . Steel, tin plated

Insulators . . . . . 94V-0 rated thermoplastic, black

Eyelets . . . . . Brass, tin plated

Threaded Inserts . . . . . Zinc

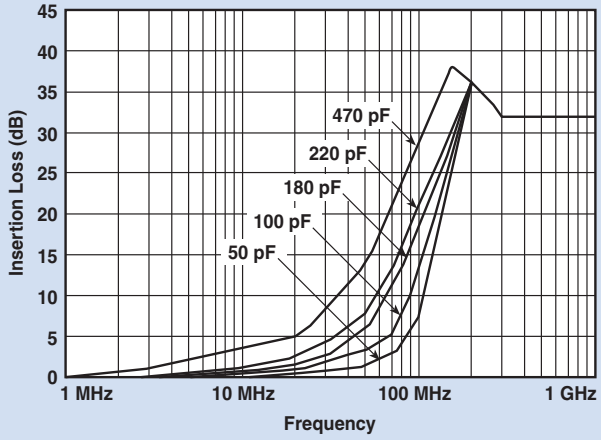
Boardlocks . . . . . Copper alloy, tin plated

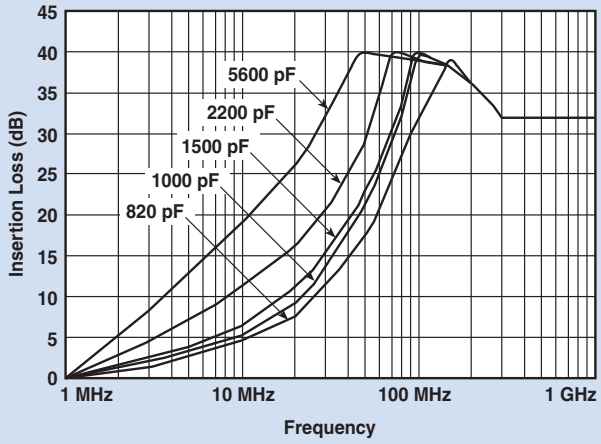
Pin Contacts . . . . . Brass

Socket Contacts . . . . . Phosphor bronze

Contact Plating . . . . . Duplex plated as follows: 15uin (.38um) gold on mating end, with entire contact 50uin (1.27um) min. nickel underplated and flash gold finish

Typical Insertion Loss





Performance Specifications

Current Rating . . . . . 5 Amps

Contact Resistance . . . . . 8 Milliohms max.

Capacitance . . . . . 50, 100, 180, 220, 470, 820 1,000, 1,500, 2,200, 5,600 pF and 47 nF ± 20% (custom valves and selective loading available)

Dielectric Withstanding Voltage . . . . . 700 VDC min. for 5 sec.

Insulator Resistance . . . . . 500 Megohms min. @ 100 VDC

Working Voltage . . . . . 200 VDC (100 VDC for 47 nF)

Operating Temperature . . . . -55°C/+85°C

SPECTRUM
Advanced Specialty
PRODUCTS

Series 100 Chip-Cap Filtered Connectors

Ordering Information

Example: **56-104-004-5-T**

This part number represents a Series 100 connector with a shell size of 9 and a socket to right angle configuration. The capacitance value is 470 pF and the connector has a .590" footprint with 4-40 threads.

56 - **1** **0** **4** - **004** - **5** - **T**

Filtered D-sub Connectors

Series 100 Connectors

– - Standard connector
F - RoHS compliant version

Shell Size/ Number of Contacts

0 - 9 size
1 - 15 size
2 - 25 size
3 - 37 size

Contact Type/Termination

1 - Pin to solder cup
2 - Pin to right angle
3 - Socket to straight PCB
4 - Socket to right angle
5 - Adapter (pin to socket)
6 - Socket to solder cup
7 - Pin to straight PCB

Capacitance Value

002 - 100 pF
003 - 220 pF
004 - 470 pF
005 - 820 pF
006 - 1500 pF
007 - 5600 pF
008 - 50 pF
009 - 180 pF
010 - 1000 pF
011 - 2200 pF
012 - 47 nF

Footprint (right angle connectors only)

3 - .318"
4 - .405"
5 - .590"

Mounting or Hardware Options

_ - .120 thru-hole and 15µ" gold

SC and Straight PCBs

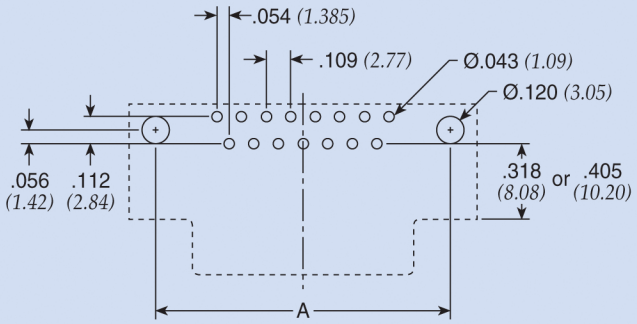
TIB - 4-40 thread on rear of flange
TIF - 4-40 thread on front of flange
MIB - M3 thread on rear of flange
GBL6 - For .062" boards
JS - Jack screws

Right Angles and Adapters

_ - No GBL attached
GL - Includes grounding board lock and 4-40 threads
T - 4-40 threads
GB - No board locks (includes 4-40 threads)
J - Jack screws
M - M3 thread
GJ - GL and jack screws

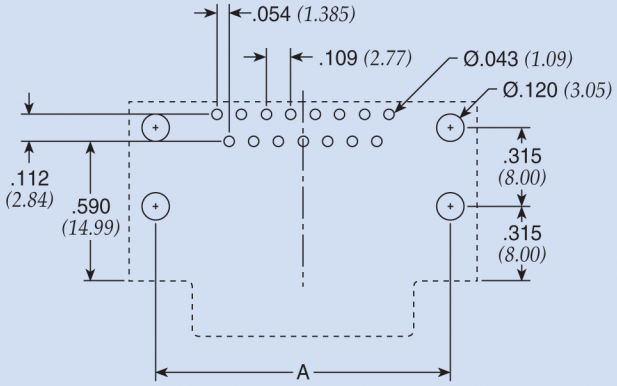
Board Layouts

.318" and .405" Footprint Typical Layout - Top View



Shell Size	A ±.005 (±0.13)
9	.984 (24.99)
15	1.312 (33.32)
25	1.852 (47.04)
37	2.500 (63.50)

.590" Footprint Typical Layout - Top View



Shell Size	A ±.005 (±0.13)
9	.984 (24.99)
15	1.312 (33.32)
25	1.852 (47.04)
37	2.500 (63.50)

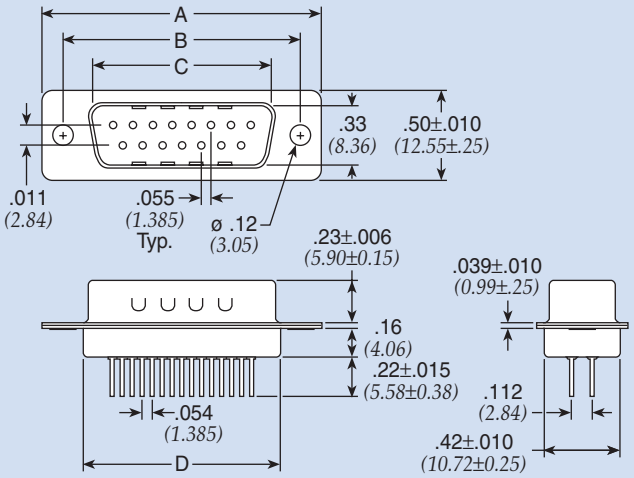
Dimensions in inches *(mm)*

SPECTRUM
Advanced Specialty
PRODUCTS

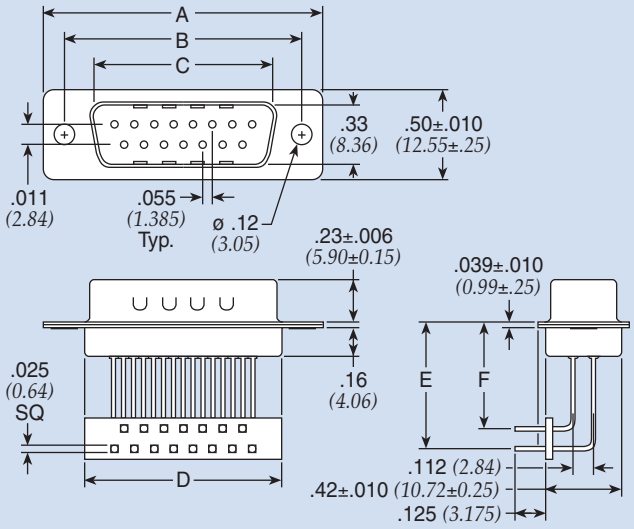
Series 100 Chip-Cap Filtered Connectors

Pin Contact *(plug)*

Straight PC Mount



90° PC Mount



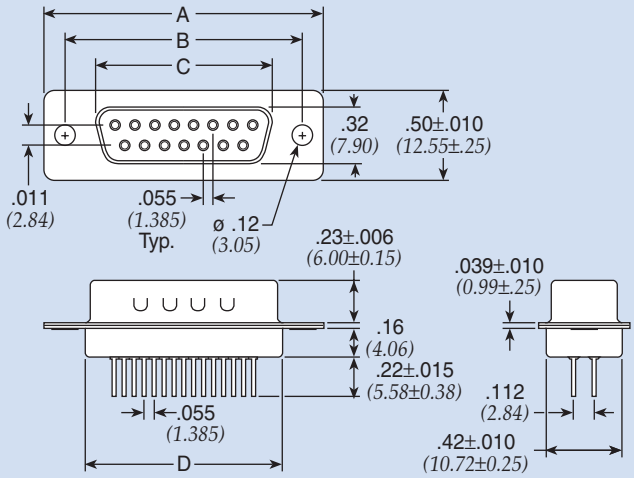
Size	A	B	C	D
9	1.213±.015 (30.81±0.38)	.984±.005 (24.99±0.13)	.667±.010 (16.92±0.25)	.755 (19.18)
15	1.541±.015 (39.14±0.38)	1.312±.005 (33.32±0.13)	.994±.010 (25.25±0.25)	1.083 (27.51)
25	2.088±.015 (53.04±0.38)	1.852±.005 (47.04±0.13)	1.534±.010 (38.96±0.25)	1.614 (41.00)
37	2.73±.015 (69.32±0.38)	2.50±.005 (63.50±0.13)	2.18±.010 (55.42±0.25)	2.27 (57.71)

Footprint	E	F
.318	.430 (10.92)	.318 (8.08)
.405	.517 (13.13)	.405 (10.29)
.590	.700 (17.83)	.590 (14.99)

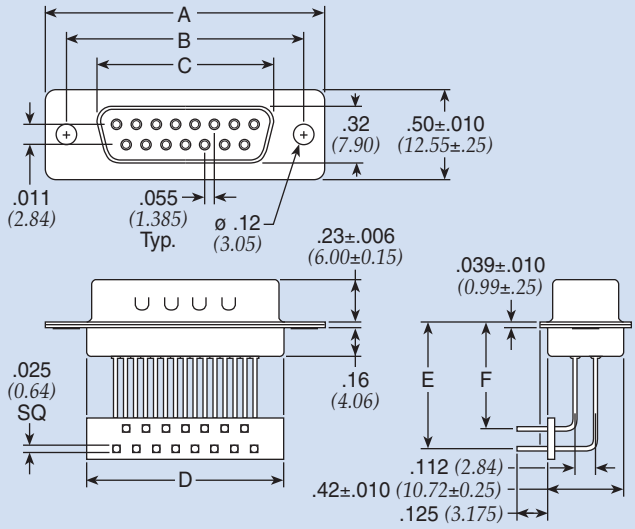
Dimensions in inches *(mm)*

Socket Contact *(receptacle)*

Straight PC Mount



90° PC Mount



Size	A	B	C	D
9	1.213±.015 (30.81±0.38)	.984±.005 (24.99±0.13)	.643±.010 (16.33±0.25)	.755 (19.18)
15	1.541±.015 (39.14±0.38)	1.312±.005 (33.32±0.13)	.971±.010 (24.66±0.25)	1.083 (27.51)
25	2.088±.015 (53.04±0.38)	1.852±.005 (47.04±0.13)	1.511±.010 (38.38±0.25)	1.614 (41.00)
37	2.73±.015 (69.32±0.38)	2.50±.005 (63.50±0.13)	2.16±.010 (54.84±0.25)	2.27 (57.71)

Footprint	E	F
.318	.430 (10.92)	.318 (8.08)
.405	.517 (13.13)	.405 (10.29)
.590	.700 (17.83)	.590 (14.99)

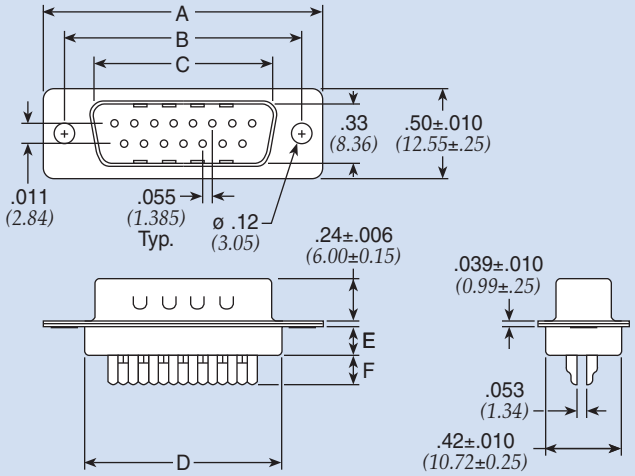
Dimensions in inches *(mm)*

SPECTRUM
Advanced Specialty
PRODUCTS

Series 100 Chip-Cap Filtered Connectors

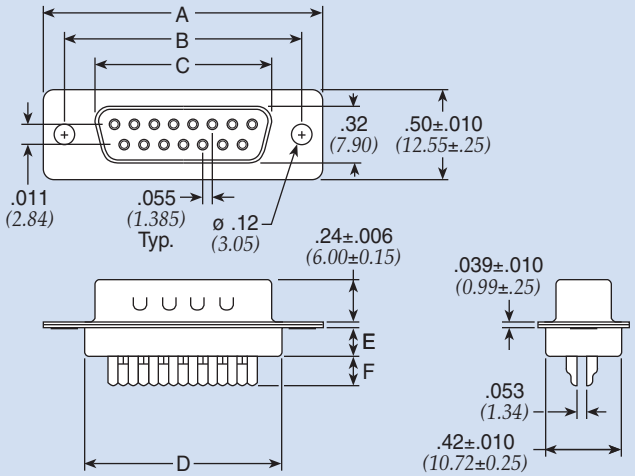
Pin Contact *(plug)*

Solder Cup Termination



Socket Contact *(receptacle)*

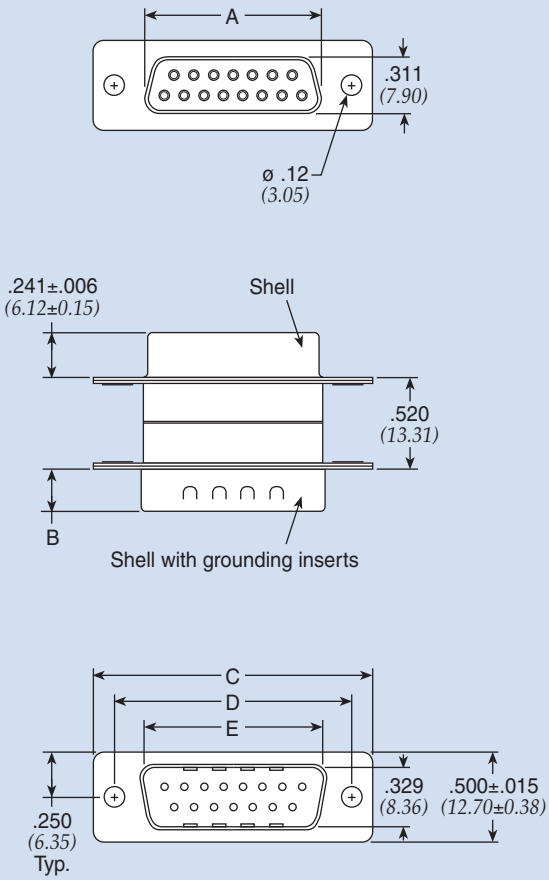
Solder Cup Termination



Size	A	B	C	D	E	F
9	1.213±.015 *(30.81±0.38)*	.984±.005 *(24.99±0.13)*	.643±.010 *(16.33±0.25)*	.755 *(19.18)*	.16 *(4.06)*	.16 *(4.06)*
15	1.541±.015 *(39.14±0.38)*	1.312±.005 *(33.32±0.13)*	.971±.010 *(24.66±0.25)*	1.083 *(27.51)*	.16 *(4.06)*	.16 *(4.06)*
25	2.089±.015 *(53.04±0.38)*	1.852±.005 *(47.04±0.13)*	1.511±.010 *(38.38±0.25)*	1.615 *(41.00)*	.16 *(4.06)*	.16 *(4.06)*
37	2.73±.015 *(69.32±0.38)*	2.50±.005 *(63.50±0.13)*	2.16±.010 *(54.84±0.25)*	2.27 *(57.71)*	.16 *(4.06)*	.16 *(4.06)*

Dimensions in inches *(mm)*

Pin - Socket Adapter



Size	A	B	C	D	E
9	.642 *(16.31)*	.233±.006 *(5.92±.15)*	1.213±.015 *(30.81±.38)*	.984 *(24.99)*	.667 *(16.94)*
15	.970 *(24.64)*	.233±.006 *(5.92±.15)*	1.541±.015 *(39.14±.38)*	1.312 *(33.33)*	.995 *(25.27)*
25	1.511 *(38.38)*	.228±.006 *(5.80±.15)*	2.088±.015 *(53.04±.38)*	1.852 *(47.05)*	1.532 *(38.92)*
37	2.158 *(54.82)*	.228±.006 *(5.80±.15)*	2.729±.015 *(69.32±.38)*	2.500 *(63.50)*	2.183 *(55.45)*

Dimensions in inches *(mm)*