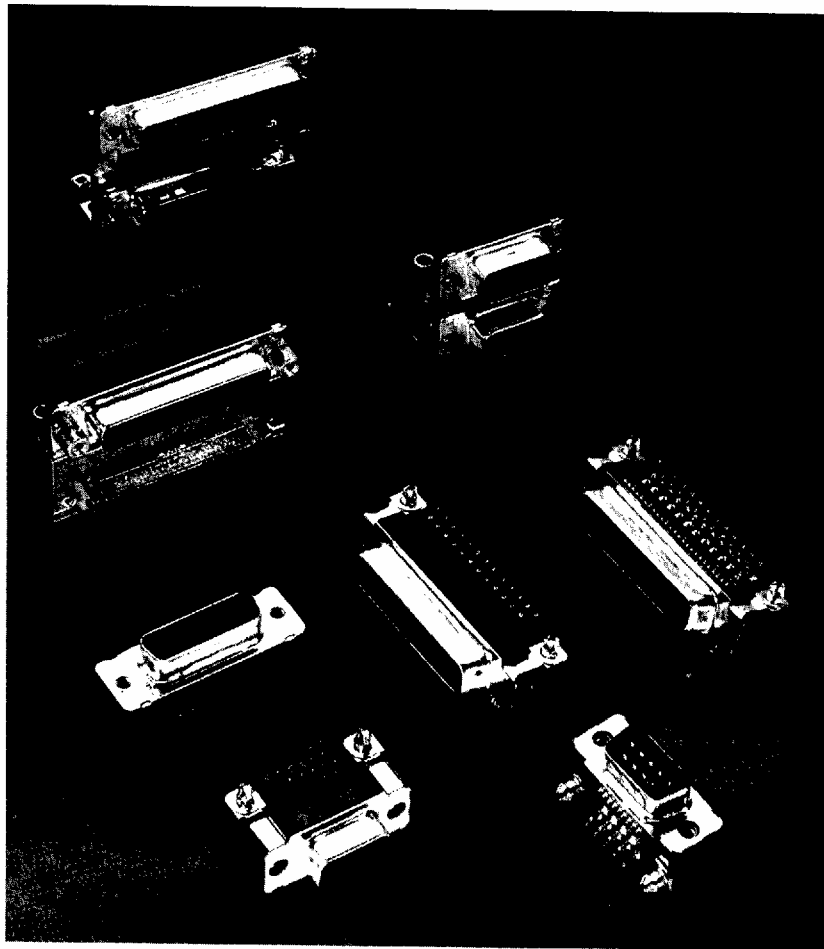


## Ferrite Block Filtered PCB Connectors

### Product Facts

- Offer economic EMI/RFI protection
- Matched pcb footprints mean "Drop-in" replacement for non-filtered connectors
- Choice of ferrite only or capacitive array on ferrite
- Connectors have industry standard interface
- Right-angle .318 and .590; vertical and stacked versions
- AMPLIMITE connector housing made of UL 94V-0 rated high temperature, thermoplastic for .318 and stacked versions
- Recognized under the Component Program of Underwriters Laboratories, Inc., File No. E28476
- Certified by the Canadian Standards Association, File No. LR 7189



These versatile and widely used pcb connectors are an inexpensive filtering method that eliminates the problem of conducted electromagnetic interference (EMI). Filtering options include ferrite only and capacitive array on ferrite.

- AMPLIMITE HD-22 Subminiature D Receptacle Connectors
- AMPLIMITE HD-20 Subminiature D Plug and Receptacle Connectors

AMPLIMITE HD-22 Receptacles are available in shell size 1, 15-positions with ferrite only and with capacitive array on ferrite.

AMPLIMITE HD-20 Plug and Receptacles are available in shell sizes 1, 2, and 3; 9, 15, and 25-positions, respectively with ferrite only and with capacitive array on ferrite.

AMPLIMITE HD-22 and HD-20 Ferrite Filtered Connectors are "Drop-in" replacements for non-filtered Subminiature D connectors with matched pcb footprints. Housings (except for .590 product) are made of high temperature, UL 94V-0 rated thermoplastic material. Low cost front metal-shells are compatible with full metal-shell cable connectors. Connectors

are available with 4-40 threaded insert mating hardware, and integral boardlocks to secure posted connectors to the pc board, prior to soldering.

To complete the interface, AMPLIMITE HD-22 and HD-20 cable connectors are available with a choice of termination styles including; crimp snap-in, solder cup, posted contacts, and insulation displacement contacts. For additional information request AMP Catalog 82068.

## Ferrite Block Filtered Connectors Performance Specifications

### Electrical Characteristics

#### Ferrite Only

**Operating Voltage**—100 VDC  
max.—AMPLIMITE connectors.

**Dielectric Withstanding Voltage**—  
250 VDC—AMPLIMITE

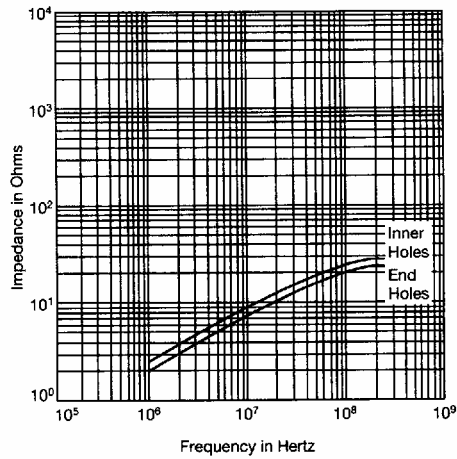
**Insulation Resistance**—  
500 megohms, min.

### Equivalent Circuit (L-type):



### Typical Impedance vs. Frequency (.070 [1.78] thickness)

Refer to AMP Spec 108-1521



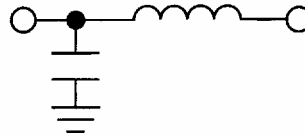
### Capacitive Array on Ferrite

**Operating Voltage**—100 VDC  
max.—AMPLIMITE connectors.

**Dielectric Withstanding Voltage**—  
250 VDC—AMPLIMITE

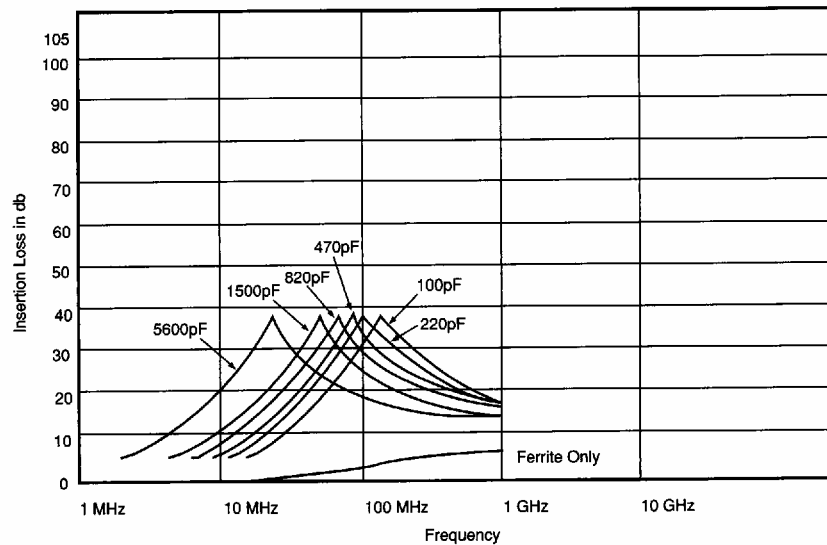
**Insulation Resistance**—  
500 megohms, min.

### Equivalent Circuit (LC type):

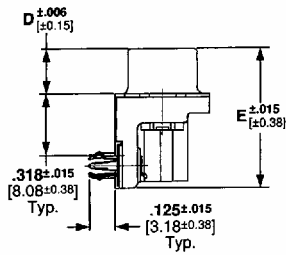


### Typical Insertion Loss vs. Frequency

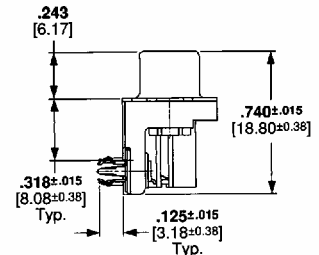
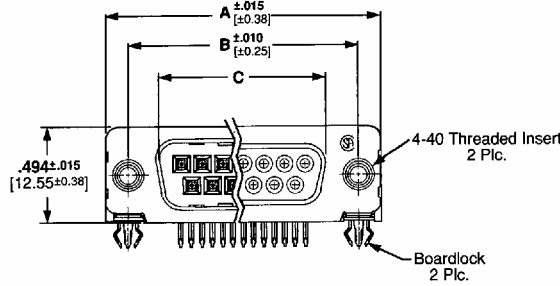
• Measured in a 50 ohm system per MIL-STD-220 at 25°C



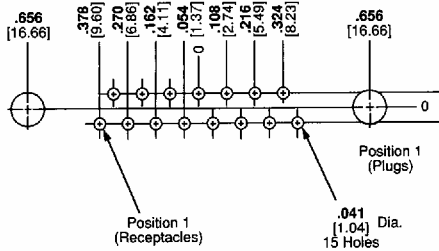
## AMPLIMITE HD-20 Filtered Connectors—.318 Footprint



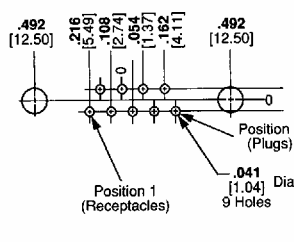
Plug



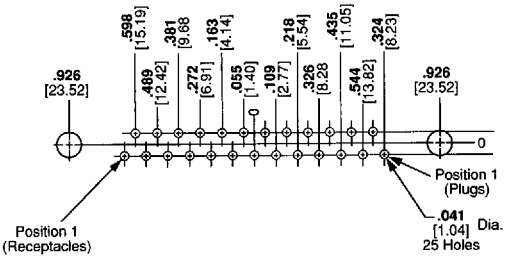
Receptacle



Recommended PC Board Hole Pattern—15 Position



Recommended PC Board Hole Pattern—9 Position



Recommended PC Board Hole Pattern—25 Position

### Plugs

Shell Size	No. of Pos.	Dimensions					Capacitance pF	Part Number	
		A	B	C	D	E		Ferrite & Capacitors	Ferrite Only
1	9	1.213	.984	.666	.235	.733	1500	869470-5	
		30.81	24.99	16.92	5.97	18.62	820	869470-6	
							470	869470-7	869436-2
							220	869470-8	
							100	1-869470-0	
2	15	1.541	1.312	.994	.235	.733	1500	869527-5	
		39.14	33.32	25.25	5.97	18.62	820	869527-6	
							470	869527-7	869526-2
							220	869527-8	
							100	1-869527-0	
3	25	2.088	1.852	1.534	.230	.738	1500	869476-5	
		53.04	47.04	38.96	5.84	18.75	820	869476-6	
							470	869476-7	869442-2
							220	869476-8	
							100	1-869476-0	

### Receptacles

Shell Size	No. of Pos.	Dimensions			Capacitance pF	Part Number	
		A	B	C		Ferrite & Capacitors	Ferrite Only
1	9	1.213	.984	.643	1500	869522-5	
		30.81	24.99	16.33	820	869522-6	
					470	869522-7	869520-2
					220	869522-8	
					100	1-869522-0	
2	15	1.541	1.312	.971	1500	869523-5	
		39.14	33.32	24.66	820	869523-6	
					470	869523-7	869521-2
					220	869523-8	
					100	1-869523-0	
3	25	2.088	1.852	1.511	1500	869464-5	
		53.04	47.04	38.38	820	869464-6	
					470	869464-7	869448-2
					220	869464-8	
					100	1-869464-0	

## AMPLIMITE HD-20 Filtered Connectors—.318 Footprint (Continued)

### Material and Finish:

**Housing**—Thermoplastic, 94V-0 rated, black, SMT compatible

**Metal Shell**—Steel, plated .000200 [0.00508] min. tin over .000100 [0.00254] min. copper

**Eyelets**—Brass, plated .000200 [0.00508] min. over copper flash

**Boardlocks**—Copper alloy, plated .000200 [0.00508] min. tin-lead over .000050 [0.00127] min. nickel

**Inserts**—Zinc, plated clear chromate

### Contacts:

**Pins**—Brass, duplex plated, .000030 [0.00076] min. gold on mating end, .000120 [0.00304] min. tin-lead on solder end, all over .000050 [0.00127] nickel underplating

### Plugs—Ferrite Block and Capacitors

Shell Size	No. of Pos.	Dimensions					Capacitance pF	Part Number
		A	B	C	D	E		
1	9	1.213 30.81	.984 24.99	.666 16.92	.235 5.97	.733 18.62	1500	869470-5
							820	869470-6
							470	869470-7
							220	869470-8
							100	1-869470-0
2	15	1.541 39.14	1.312 33.32	.994 25.25	.235 5.97	.733 18.62	1500	869527-5
							820	869527-6
							470	869527-7
							220	869527-8
							100	1-869527-0
3	25	2.088 53.04	1.852 47.04	1.534 38.96	.230 5.84	.738 18.75	1500	869476-5
							820	869476-6
							470	869476-7
							220	869476-8
							100	1-869476-0

### Receptacles—Ferrite Block and Capacitors

Shell Size	No. of Pos.	Dimensions			Capacitance pF	Part Number
		A	B	C		
1	9	1.213 30.81	.984 24.99	.643 16.33	1500	869522-5
					820	869522-6
					470	869522-7
					220	869522-8
					100	1-869522-0
2	15	1.541 39.14	1.312 33.32	.971 24.66	1500	869523-5
					820	869523-6
					470	869523-7
					220	869523-8
					100	1-869523-0
3	25	2.088 53.04	1.852 47.04	1.511 38.38	1500	869464-5
					820	869464-6
					470	869464-7
					220	869464-8
					100	1-869464-0