

# Series USB-E ESD Protected USB Connectors

## SPECTRUM CONTROL

Spectrum Control Inc. introduces our new ESD protected USB connectors. This introduction into ESD USB connectors includes the Type A family with right angle PCB mounting and are designed specifically for USB 2.0 applications. The connectors have integrated transient voltage suppressors from Littelfuse® and are drop-in replacements for standard unfiltered connectors. Custom values and capacitive filtered combinations are also available. Consult factory for other configurations.

### Applications

- EMI/RFI sensitive electronics
- Test and measurement equipment
- Computer equipment
- Computer peripherals

### Electrical Specifications

Operating Temperature . . . -25°C to +80°C  
 Working Voltage . . . . . 10 VDC  
 Current Rating . . . . . 5 Amps  
 Effective Filtering from . . . 5 MHz to 5 GHz  
 Capacitance . . . . . 0.055 pF to 1000 pF  
 Dielectric Withstanding  
 Voltage . . . . . 50 VDC  
 Insulation Resistance . . . . 1 GΩ at rated voltage  
 Contact Resistance . . . . . 15 mΩ maximum

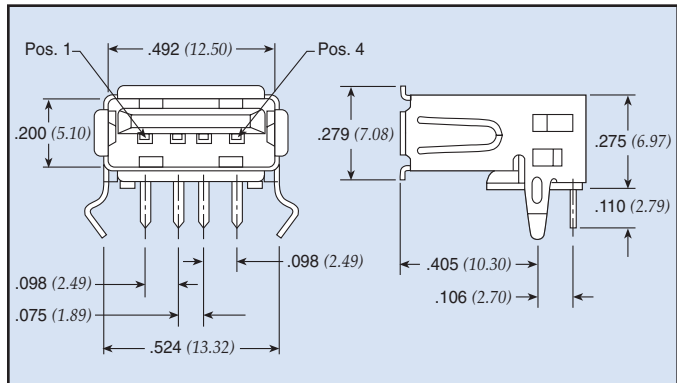


### Material Specifications

Shell . . . . . Brass, nickel plated  
 Insulator . . . . . PA6T thermoplastic, UL94V-0, reflow compatible  
 Contacts . . . . . Phosphor bronze, gold flash over nickel, tin/lead over nickel on solder tails

### Other Configurations Available Soon

Type A receptacles, vertical and stacked  
 Type B receptacles, right angle



Part Number	Max. Working Voltage (V) DC	Typical Clamp Voltage	Overshoot Voltage	Leakage (A) Current	Typical Cap at 1 MHz
56-U04-E01	24.0	≤150 V	≤1000 V	<1.0nA	0.05 pF



ESD Protection Provided By



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# Series USB-F EMI Filtered USB Connectors

## SPECTRUM CONTROL

Spectrum Control Inc. introduces our new EMI filtered USB connectors. This introduction into filtered USB connectors includes the Type A family with right angle PCB mounting. The connectors have integrated chip capacitor filters or ESD suppressors and are drop-in replacements for standard unfiltered connectors. The connectors have capacitive filtering ranging from 22 pF to 1000 pF. Custom filter values and ESD protection from Littelfuse® are also available.

### Applications

- EMI/RFI sensitive electronics
- Test and measurement equipment
- Computer equipment
- Computer peripherals

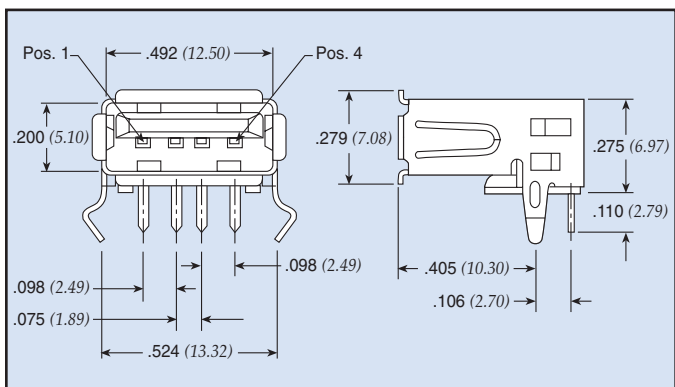
### Electrical Specifications

Operating Temperature . . . . . -25°C to +80°C  
 Working Voltage . . . . . 10 VDC  
 Current Rating . . . . . 5 Amps  
 Effective Filtering from . . . . . 5 MHz to 5 GHz  
 Capacitance . . . . . 22 pF to 1000 pF  
 Dielectric Withstanding Voltage . . . . . 50 VDC  
 Insulation Resistance . . . . . 1 GΩ at rated voltage  
 Contact Resistance . . . . . 15 mΩ maximum



### Material Specifications

Shell . . . . . Brass, nickel plated  
 Insulator . . . . . PA6T thermoplastic, UL94V-0, reflow compatible  
 Contacts . . . . . Phosphor bronze, gold flash over nickel, tin/lead over nickel on solder tails



Part Number	Capacitance		Typical Insertion Loss - db								
	Value	Tol.	5 MHz	10 MHz	20 MHz	50 MHz	100 MHz	200 MHz	500 MHz	1 GHz	5 GHz
56-U04-001	22 pF	±20%	—	—	—	—	—	TBD	TBD	TBD	TBD
56-U04-002	33 pF	±20%	—	—	—	—	—	TBD	TBD	TBD	TBD
56-U04-003	47 pF	±20%	—	—	—	—	—	4.0	10.0	15.0	17.0
56-U04-004	100 pF	±20%	—	—	—	1.0	3.0	8.0	24.0	30.0	34.0
56-U04-005	220 pF	±20%	—	—	2.0	6.0	11.0	17.0	25.0	31.0	35.0
56-U04-006	330 pF	±20%	—	1.0	3.0	9.0	14.0	20.0	28.0	34.0	39.0
56-U04-007	470 pF	±20%	—	2.0	5.0	12.0	17.0	23.0	31.0	37.0	42.0
56-U04-008	1000 pF	±20%	2.0	4.0	7.0	18.0	22.0	29.0	33.0	40.0	45.0

### Other Configurations Available Soon

Type A receptacles, vertical and stacked  
 Type B receptacles, right angle



ISO 9001

ESD Protection Provided By  
  
 Circuit Protection Specialists

  
**SPECTRUM CONTROL INC.**  
 A Control Products and Systems Company  
**Signal & Power Integrity Group**

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