

# EMI Filtered USB Connectors Series USB-F

## Electrical Specifications

Operating Temperature . . . . . -55°C to +125°C  
Working Voltage . . . . . 5 VDC  
Current Rating . . . . . 1 Amp max.  
Contact Resistance . . . . . 30 mΩ max.  
Temperature Range . . . . . -40°C to +71°C

### Capacitive Filtered

Capacitance . . . . . 100pF  
Dielectric withstand voltage . . . . . 125vDC

### Inductive Filtered

Common mode impedance . . . . . 90Ω ±25%  
@ 100MHz  
IR . . . . . 10 MΩ min.  
DC Resistance . . . . . 0.30 Ω max.

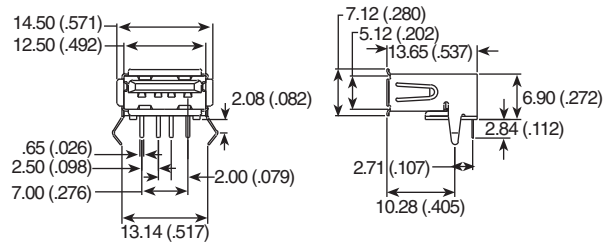
## Material

Shell: Brass, nickel plated  
Insulator: Thermoplastic, UL94V-0, reflow compatible  
Contacts: Phosphor bronze, gold flash over nickel

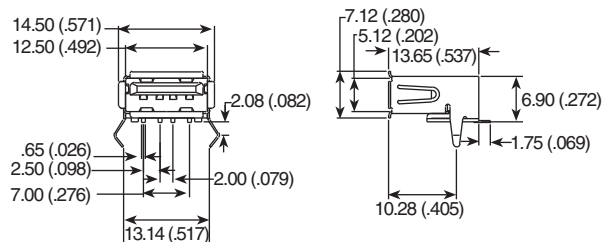


## Capacitive Filters for USB 1.1

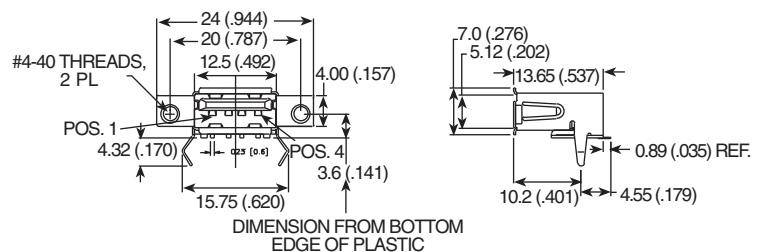
**56FU04-004 - socket right angle through hole connector**



**56FU04-004SM - socket right angle surface mount connector**



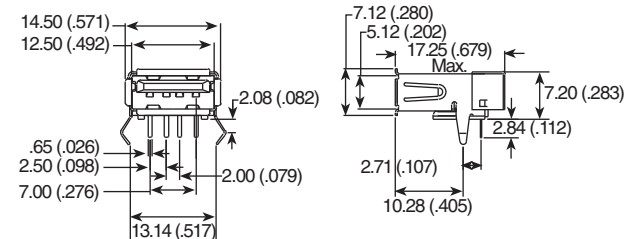
**56FU04-004TPM - socket right angle through hole connector with panel mount tabs**



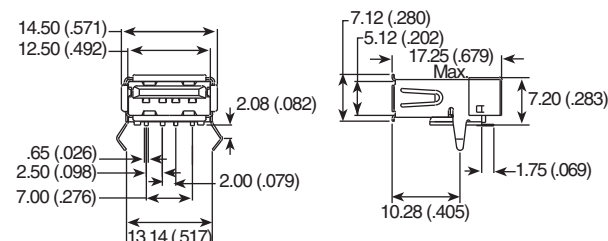
Note: Additional capacitor values available. Consult factory.

## Inductive Filters for USB 2.0

**56FU04-020 - socket right angle through hole connector**



**56FU04-020SM - socket right angle surface mount connector**



Note: ESD protection can be added to the 2.0 versions as an option

Custom styles and configurations available. Consult factory.

# ESD Protected USB Connectors Series USB-E

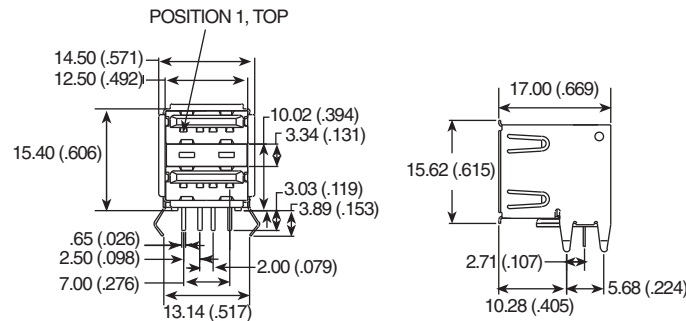
## Electrical Specifications

- Operating Temperature . . . . . -55°C to +125°C
- Working Voltage . . . . . 5 VDC
- Current Rating . . . . . 1 Amp max.
- Contact Resistance . . . . . 30 mΩ max.
- Temperature Range . . . . . -40°C to +71°C
- Reverse Standoff Voltage . . . . . 5 Volts
- Reverse Breakdown Voltage . . . . . 6 Volts
- Clamping Voltage . . . . . I<sub>pp</sub>=1A, t<sub>p</sub>=8/20us, 9.8 Volts  
(15 Volts for 56FU24-E01)
- Junction capacitance,  
I/O to GND . . . . . 10pF max.  
(3pF max. for 56FU24-E01)

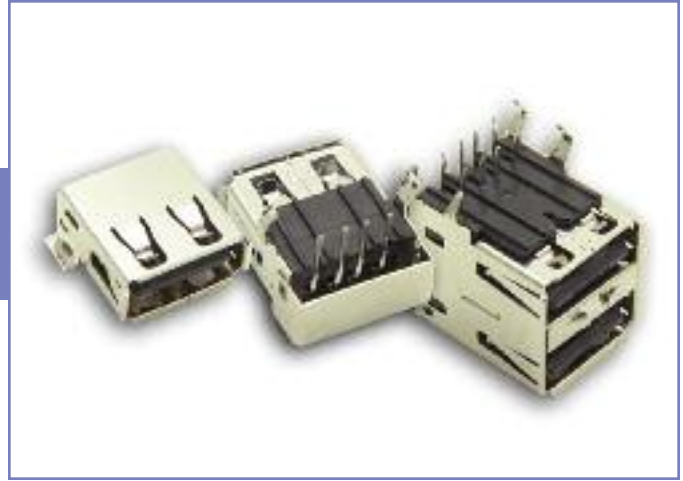
## Material

- Shell: Brass, nickel plated
- Insulator: Thermoplastic, UL94V-0, reflow compatible
- Contacts: Phosphor bronze, gold flash over nickel

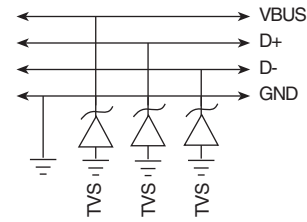
### 56FU24-E01 - stacked socket right angle through hole connector with TVS diodes



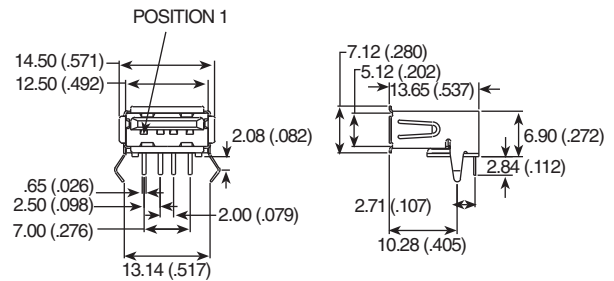
Custom styles and configurations available. Consult factory.



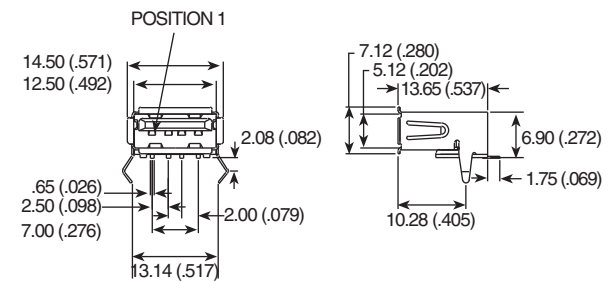
## Protection Schematic



### 56FU04-E01 - socket right angle through hole connector with TVS diodes



### 56FU04-E01SM - socket right angle surface mount connector with TVS diodes



# Rugged USB Connectors

New rugged USB Connectors from API's Spectrum Control brand feature a heavy-duty design able to connect to USB 2.0 or 1.1 ports, making them ideal for demanding, high stress applications.

## Product Highlights

- Connectors meet seal requirements of IEC-60529, Code IP67 on PCB side
- Meet immersion requirements per MIL-STD-810F, Method 512.4 to 20 meters (unmated)
- RoHS compliant
- Supplied with gasket
- Ideal for demanding applications in the military, communications, medical, industrial and computing industries
- Type A, right-angle mounted connector
- USB 2.0 or 1.1 applications
- Part Number: 56FU04-017



## Electrical Specifications

Operating Temperature . . -40°C to +105°C

Current Rating . . . . . 1.5 Amps

Contact Resistance . . . . . 30 mΩ

## Dimensions



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