



RJ45 ETHERNET, USB, HDMI, AND DISPLAY PORT Introduction and Technical Reference



RJ45 Cat 5e and 6A TVS diode filter connector performance specifications

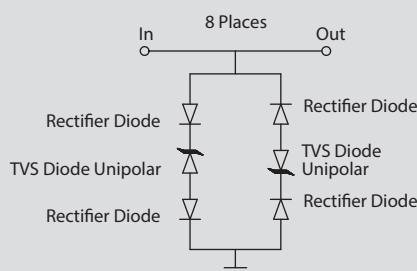
A

MIL-DTL-38999 Series III, TVS Diode, RJ45 Cat 5e and 6A Performance Specifications	
Material and Finish	
Shell/coupling Plating	Complete list of options available in the Material and Finish Options portion of this section
Contacts	PC tails or solder cup: copper alloy, gold plated
RJ45 coupler housing	UL94V-0 compliant ABS or PPS
Seals	Fluorosilicone
Shell Sizes	17 and 19
Environmental / Mechanical Performance	
Sealing	IP68 mated condition, IP67 unmated condition
Outgassing	Mod Code 186S* Mod Code 928**
Operating Temperature	-20°C to +85° C LT -40 to +125° C HT
Vibration	20g's, 3 Axis, 10 - 2000Hz
Mechanical Shock	300 g's
Backshell Interface	MIL-DTL-38999 Designator H
Mating Cycles	500

* Meets outgassing requirements per ASTM E 595 and meets NASA screening requirements for level 1 highest reliability
** Meets outgassing requirements per UL 94 V-0

MIL-DTL-38999 Series III, TVS Diode, RJ45 Cat 5e and 6A Performance Specifications	
RJ45 Cat 6A & 5e Electrical Specifications	
Voltage Rating	1000 Volts, Cat 5e
Data Rate	10BASE-T, 100BASE-TX, 1000BASE-T/1000BASE-TX
Current Rating	1.5 Amps
D.W.V.	1000 VDC (700 VAC)
Frequency	100 MHz, Cat 5e 500 MHz, Cat 6A
Wiring	Straight through
Cabling Length	100 Meters Max
Shield Continuity	Continuous Through Coupler and Grounded to the Shell

FIGURE 1



RTCA DO-160 Indirect Lightning Waveset A Waveforms		
RTCA DO-160 Waveform	Level	Open Circuit Voltage/ Short Circuit Voltage V/A
Waveform 3	1	100/4
	2	250/10
Waveform 4	1	50/10
	2	125/25

MIL-DTL-38999 Series III, TVS Diode, RJ45 Cat 5e and 6A Performance Specifications	
TVS Electrical Specifications	
Each signal line has TVS diode protection per the electrical schematic in figure 1.	
Peak pulse power (tp = 8/20us)	1,200w
Rated standoff voltage	2.8V
Minimum breakdown voltage	3.0V @ 1mA
Max clamping voltage (@ Ipp = 2A)	5.5V
Max clamping voltage (@ Ipp = 5A)	8.5V
Max clamping voltage (@ Ipp = 30A)	21.0V
Max leakage current	2.0uA max @ 2.8V
Typical junction capacitance	10pF @ 0v, 1Mhz
Polarity	bipolar
Compatible with IEC 61000-4-2 (ESD)	air - 15kv, contact - 8kv
Compatible with IEC 61000-4-4 (EFT)	40A - 5/50ns
Compatible with IEC 61000-4-5 (surge)	24A, 8/20us - level 2 (line-gnd) & level 3 (line-line)

Meets indirect lightning strike requirements per D0-160, section 22 pin injection waveform set A2.

