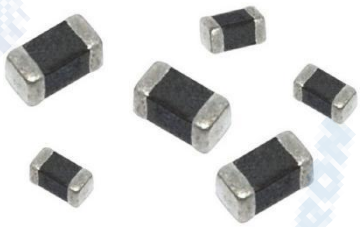
BTR04D3/BTR06D3

Low Capacitance Single-Line ESD Suppressor



FEATURES

- 0402 or 0603 Package
- Protects I/O lines etc.
- Low Clamping Voltage
- Low leakage current
- High Polymer Material for faster response time
- Response Time is Typically <0.5 ns
- RoHS compliant in Lead-Free versions

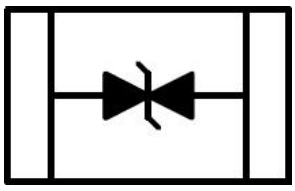
APPLICATIONS

- Notebooks and PC peripheral accessories
- Digital consumer electronics, MID, Bluetooth and Wi-Fi equipment
- Household Audio, Car Stereo
- Monitors and Flat Panel Displays
- Set Top Box and OTT Box, DVBT
- Networking and Telecom equipment, such as cellphone, Net Switch, Router
- Medical Electronic such as Sphygmomanometer, Blood Glucose Meter
- Security equipment such as CCTV Camera, DVR,NCR, Optical Transceiver
- Industrial Equipment

IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD)
- ±15kV (air), ±8kV (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 4A (8/20μs)

SCHEMATIC & PIN CONFIGURATION



ELECTRICAL CHARACTERISTICS

(T_A=25℃ Unless otherwise noted)

Part Number	Working Voltage (V_{DC})	Trigger Voltage(V_V) Min.	Clamping Voltage (Vc) Typ.	Capacitance (Cp)	Capacitance Tolerance (△Cp)	Leakage Current (I_L)
BTR04D3	12V	60V	30V	3pF	±1pF	<1uA
BTR06D3	12V	60V	30V	3pF	±1pF	<1uA

ELECTRICAL PARAMETERS (T=25℃)

Symbol	Parameter
V_{DC}	Maximum DC Operating Voltage
V_V	In the case of electrostatic discharge, Vv is the turn-on voltage of ESD suppressor instant grounding
V_C	Per IEC61000-4–2,level 4 waveform(8KV contact discharge mode,30A), measurement made 30ns after initiation of pulse
C_P	capacitance measurement at 1MHz test frequency
V_{BR}	Breakdown Voltage
I_L	Leakage Current

ABSOULTE MAXIMUM RATINGS

(T_A=25℃ Unless otherwise noted)

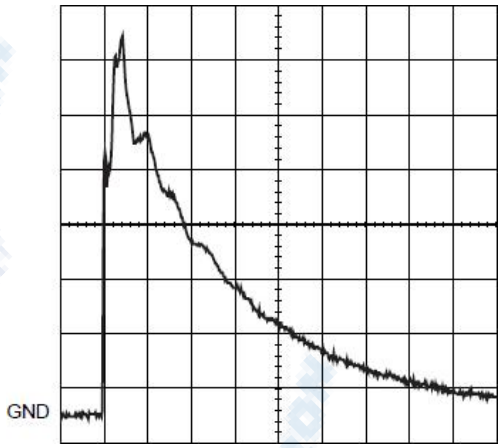
Parameter	Symbol	Typical	Unit
Peak Pulse Power (tp = 8/20 μs)	Ppk	120	W
Operating Junction Temperature	T_J	-55 ~ 125	℃
Storage Temperature Range	T_{STG}	-55 ~ 150	℃
Lead Soldering Temperature	T_L	260 (10sec)	℃

ENVIRONMENTAL SPECIFICATIONS

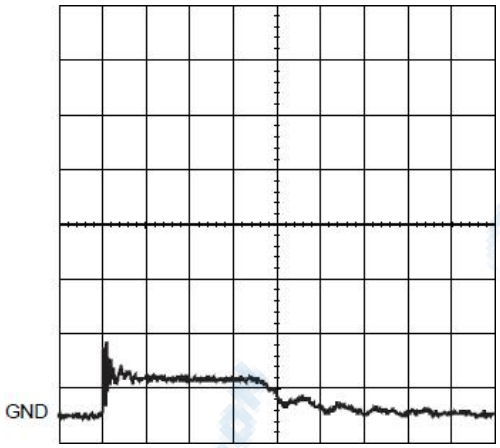
Characteristics	Specifications	Test Condition
Bias humidity	△VvNv <=±10%	90%RH,40 ℃,Working voltage,1000 hours
Thermal shock		-40 ℃ to 85 ℃,30 min. cycle,5 cycles
Full load voltage		Working voltage,85 ℃,1000hours
Solder leach resistance	1. b.VvNv <=±10% 2. Ir<=50mA at working voltage 3.Solder Wetting area>=95%	260 ℃,10s

TYPICAL CHARACTERISTICS

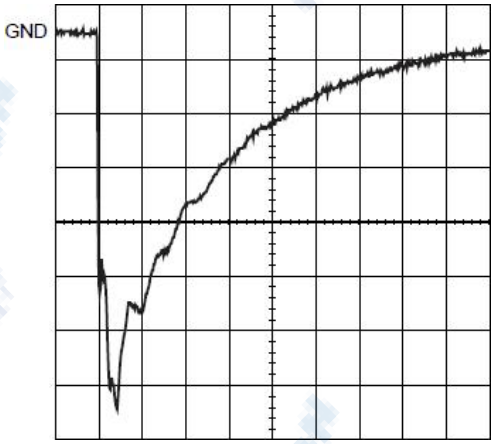
WithoutESDSuppressor/+8KVESD VoltageWaveform



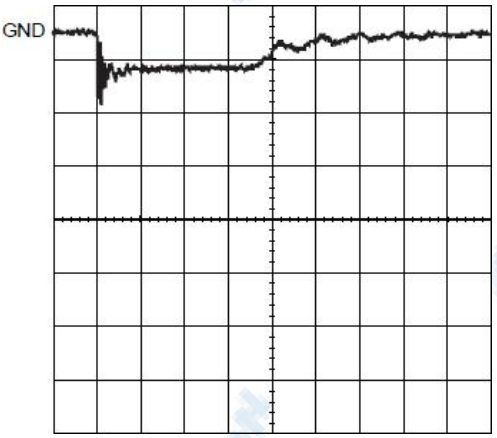
ESDSuppressorClamped/+8KVESD VoltageWaveform



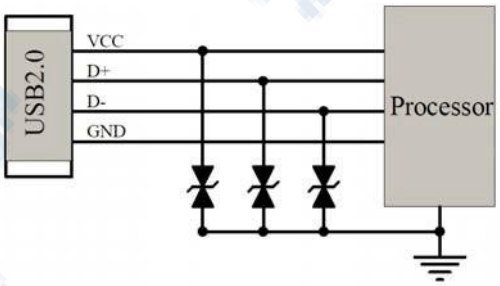
WithoutESDSuppressor/-8KVESD VoltageWaveform



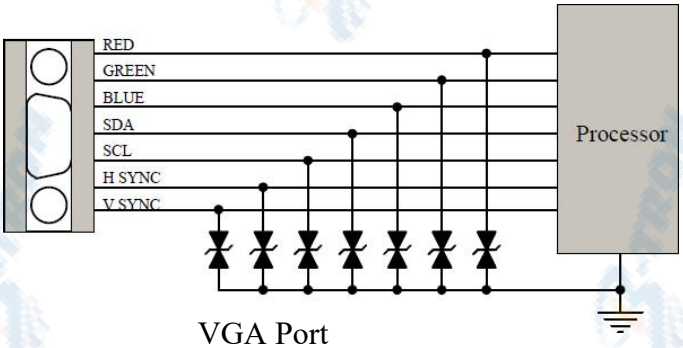
ESDSuppressorClamped/-8KV ESD VoltageWaveform



TYPICAL APPLICATIONS

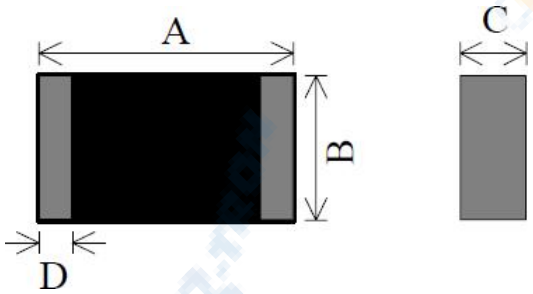


USB2.0 Port



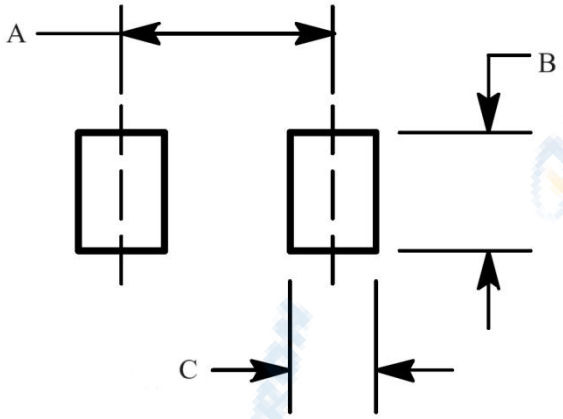
VGA Port

PACKAGE OUTLINE



Dim	Millimeters	Inches	Millimeters	Inches
	0402 Package		0603Package	
A	1.00±0.15	0.04±0.006	1.60±0.20	0.06±0.008
B	0.50±0.10	0.02±0.004	0.80±0.15	0.03±0.006
C	0.50±0.10	0.02±0.004	0.80±0.15	0.03±0.006
D	0.25±0.15	0.009±0.006	0.30±0.20	0.012±0.008

MOUNTING PAD（Unit:mm)



Chip Size	A	B	C
0402	1.0	0.7	0.3
0603	1.6	1.0	0.4

ORDERING INFORMATION

Chip Size	Parts on 7 inch (178 mm) Reel
0402	10,000PCS
0603	4,000PCS