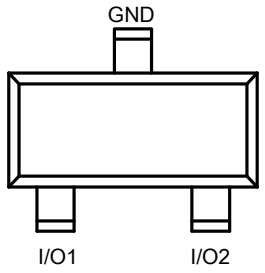
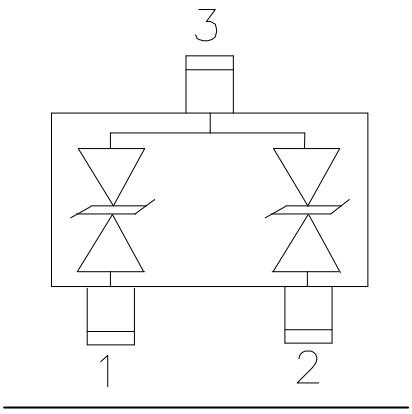
2-Lines , Bi-directional, Transient Voltage Suppressors

Descriptions

The ESD5R600TA is an ultra-low capacitance TVS (Transient Voltage Suppressor) array designed to protect high speed data interfaces. It has been specifically designed to protect sensitive electronic components which are connected to data and transmission lines from over-stress caused by ESD (Electrostatic Discharge). The is available in SOT-23 package. Standard products are Pb-free and Halogen-free.

SOT-23 (Top View)





Features

- Stand-off voltage: 5V Max
- Transient protection for each line according to
  IEC61000-4-2 (ESD): ±30kV (contact and air discharge)
  IEC61000-4-4 (EFT): 40A (5/50ns)
  IEC61000-4-5 (surge): 30.0A(8/20μs)
- Ultra-low capacitance: C_J =60.0pF typ.
- Ultra-low leakage current: I_R <0.5uA typ

Order information

Device	Package	Shipping	Marking
ESD5R600TA	SOT-23	3000/Tape&Reel	C5 M05C

Applications

- RS-232, RS-422 & RS-423 Data Lines
- Audio/Video Inputs
- Wireless Network Systems
- Microprocessor Based Equipment
- Medical Sensors
- Notebook Computers

Absolute maximum ratings

Parameter	Symbol	Rating	Unit
Peak pulse current (t_p = 8/20μs)	I_{PP}	30.0	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	kV
ESD according to IEC61000-4-2 contact discharge		±30	
Operation junction temperature	T_J	-55~150	°C
Lead temperature	T_L	260	°C
Storage temperature	T_{STG}	-55~150	°C

Electrical characteristics (TA=25 oC, unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				±5.0	V
Reverse leakage current	I_R	V_{RWM} = 5.0V			0.5	uA
Reveres breakdown voltage	V_{BR}	I_T=1mA	5.5		8.0	V
Clamping voltage	V_C	Ipp=1.0A tp=8/20us			8.5	V
		Ipp=30.0A tp=8/20us			12.0	V
Junction capacitance	C_J	V_R = 0V, f = 1MHz		60.0		pF

Electrical performance curve

V_{RWM} Reverse stand-off voltage

I_R Reverse leakage current

V_{CL} Clamping voltage

I_{PP} Peak pulse current

V_{TRIG} Reverse trigger voltage

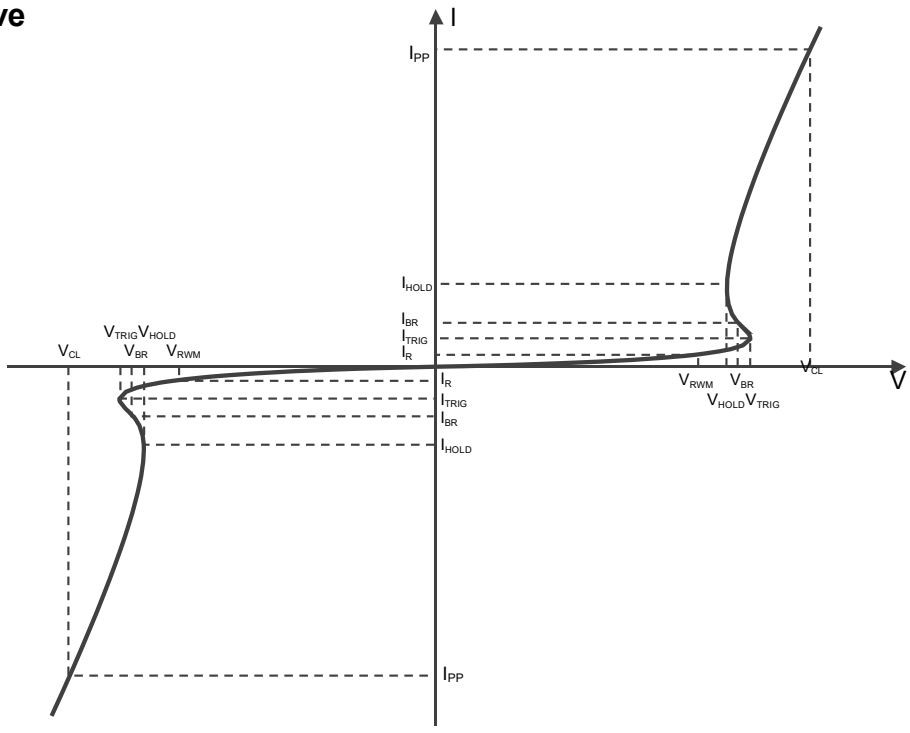
I_{TRIG} Reverse trigger current

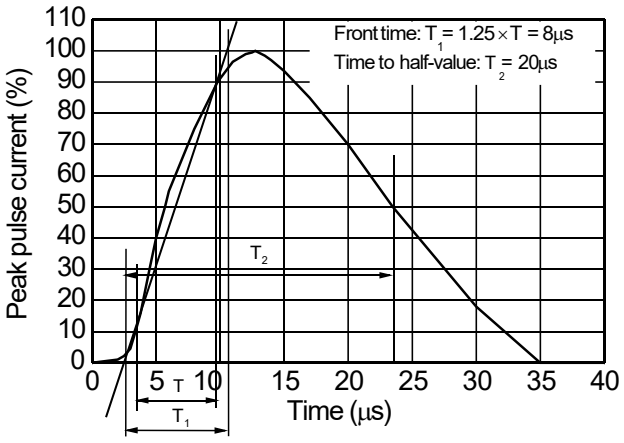
V_{BR} Reverse breakdown voltage

I_{BR} Reverse breakdown current

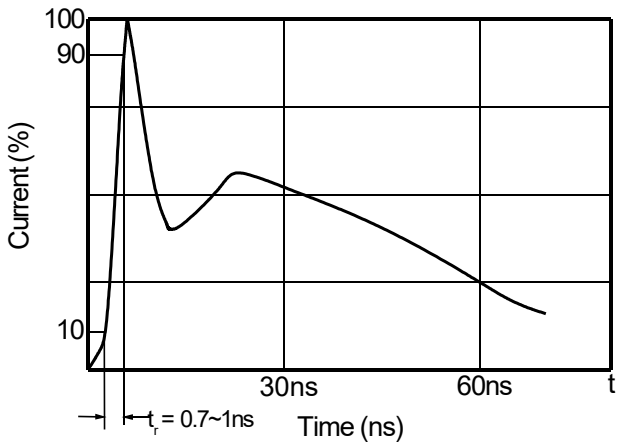
V_{HOLD} Reverse holding voltage

I_{HOLD} Reverse holding current

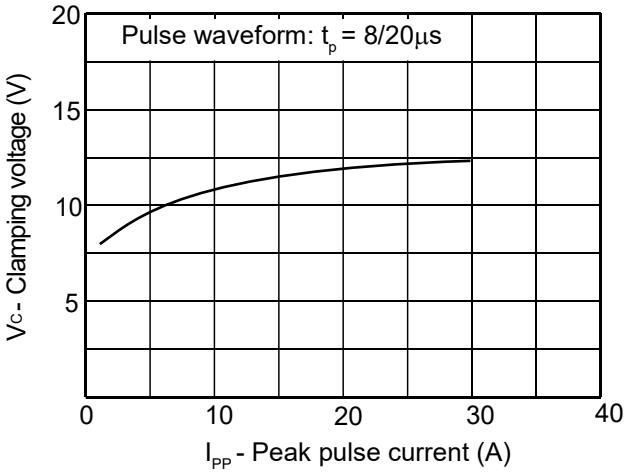




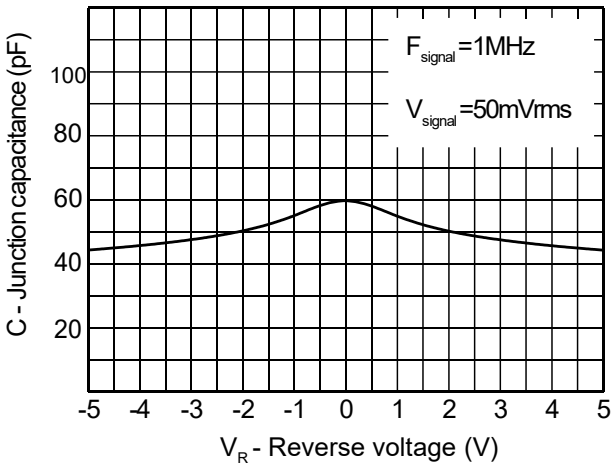
8/20μs waveform per IEC61000-4-5



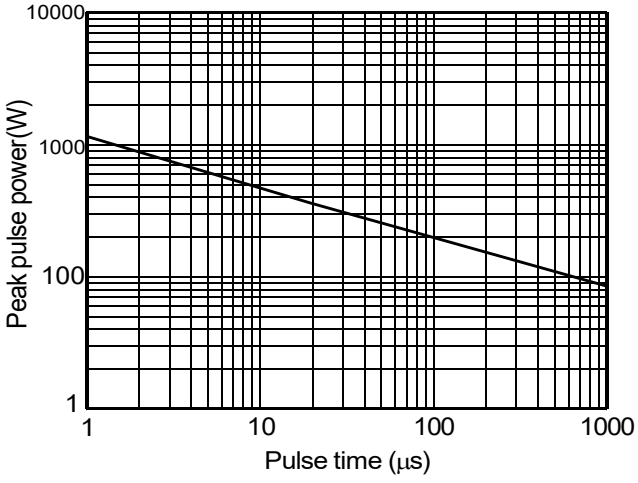
Contact discharge current waveform per IEC61000-4-2



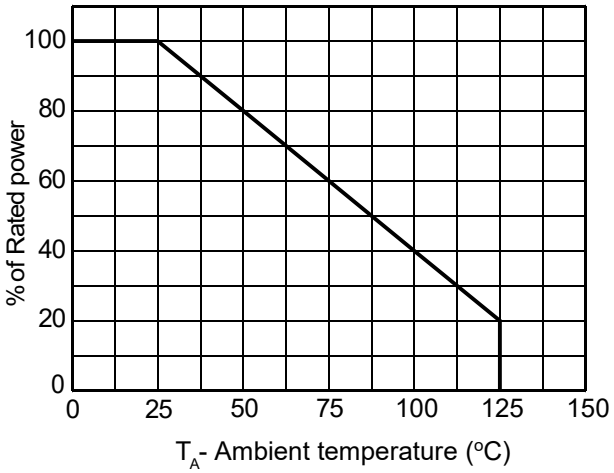
Clamping voltage vs. Peak pulse current



Capacitance vs. Reveres voltage

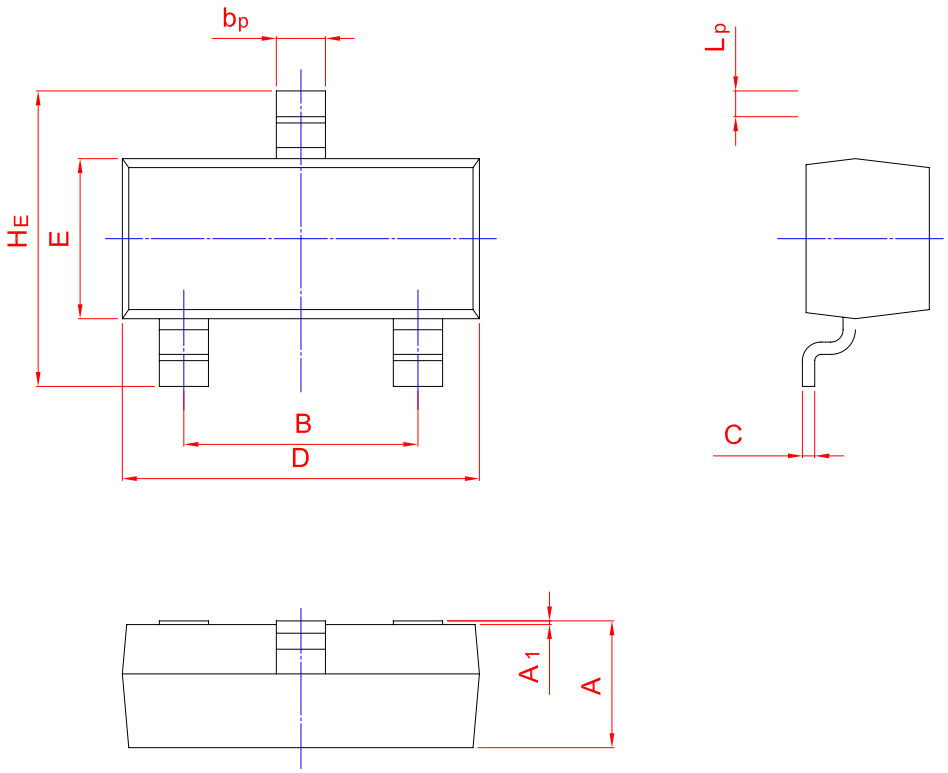


Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

SOT-23 Package Outline Drawing



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20

SOT-23 Suggested Pad Layout

