

Product Summary

The TVS arrays are designed to protect sensitive electronics from damage or latch-up due to ESD and other voltage-induced transient events. They are designed for use in applications where board space is at a premium. Each device will protect up to five lines. They are unidirectional devices and may be used on lines where the signal polarities are above ground.

Feature

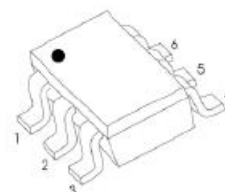
- Low Reverse Stand-Off Voltage: 5.0V
- Line Capacitance: 0.5pF (typical) @ 1MHz
- Very Low Reverse Current: $I_R < 0.2\mu A$ (Typical) @
- Halogen Free, Lead Free And RoHs
- IEC61000-4-4 (EFT): 40A (5/50ns)

Application

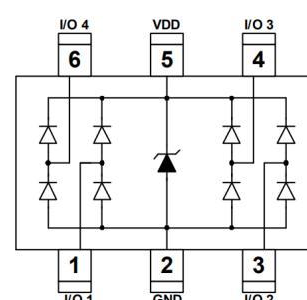
- Cellular Phones
- Portable Devices
- Digital Cameras
- Player
- Smart Home
- Robot

Marking: 5T

SOT-363



Schematic diagram



Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage Air Model	$V_{\text{ESD}}^{(1)}$	± 20	kV
IEC 61000-4-2 ESD Voltage Contact Model		± 15	
Peak Pulse Power	$P_{\text{PP}}^{(2)}$	52	W
Peak Pulse Current	$I_{\text{PP}}^{(2)}$	4	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^{\circ}\text{C}$
Junction Temperature	T_J	-40 ~ +125	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +155	$^{\circ}\text{C}$

- 1) Device stressed with ten non-repetitive ESD pulses.
- 2) Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

ESD standards compliance

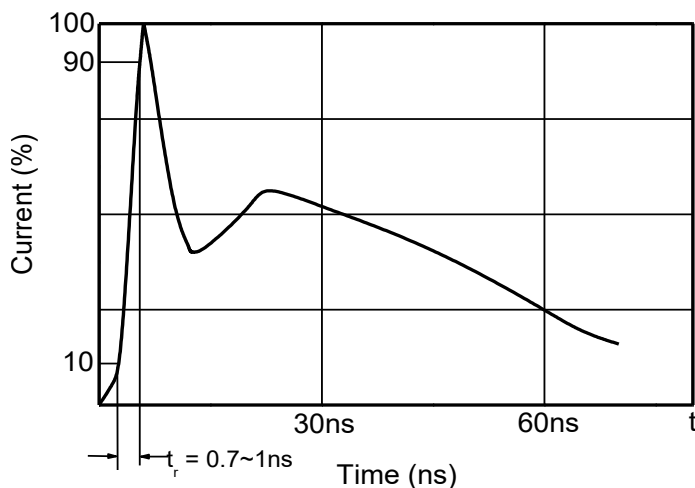
IEC61000-4-2 Standard

Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

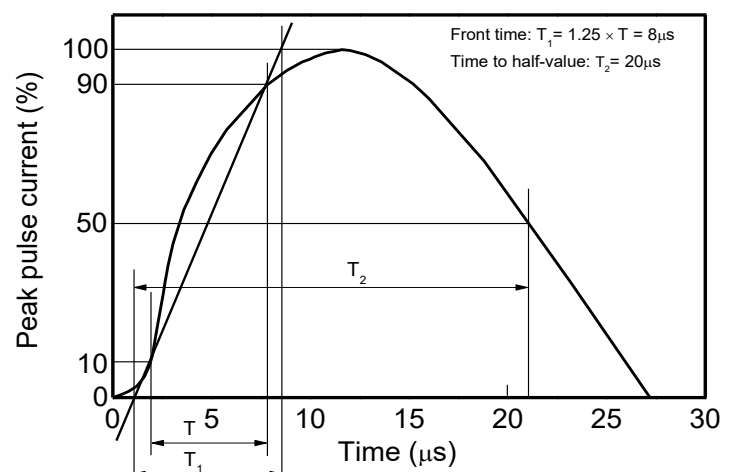
JESD22-A114-B Standard

ESD Class	Human Body Discharge V
0	0~249
1A	250~499
1B	500~999
1C	1000~1999
2	2000~3999
3A	4000~7999
3B	8000~15999

Contact discharge current waveform per IEC61000-4-2

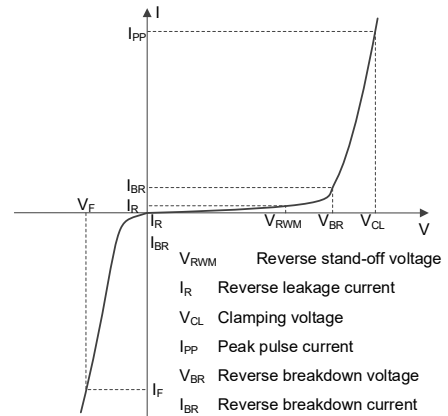


8/20 μs waveform per IEC61000-4-5



Electrical Parameter

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage



V-I characteristics for a Uni-directional TVS

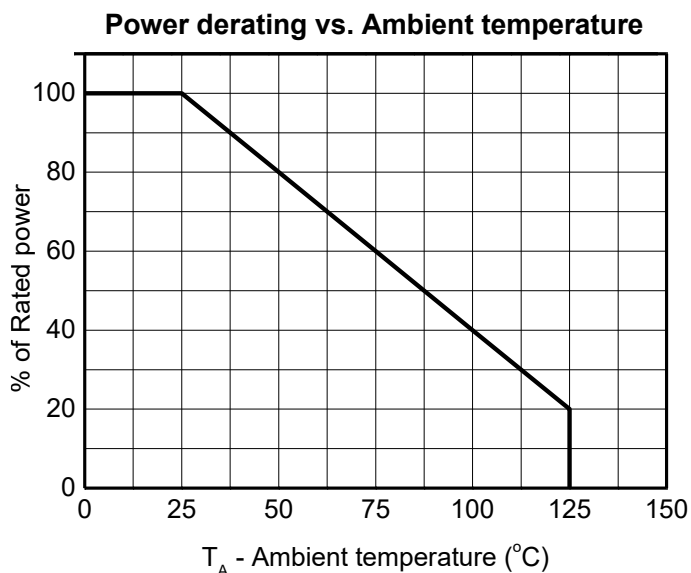
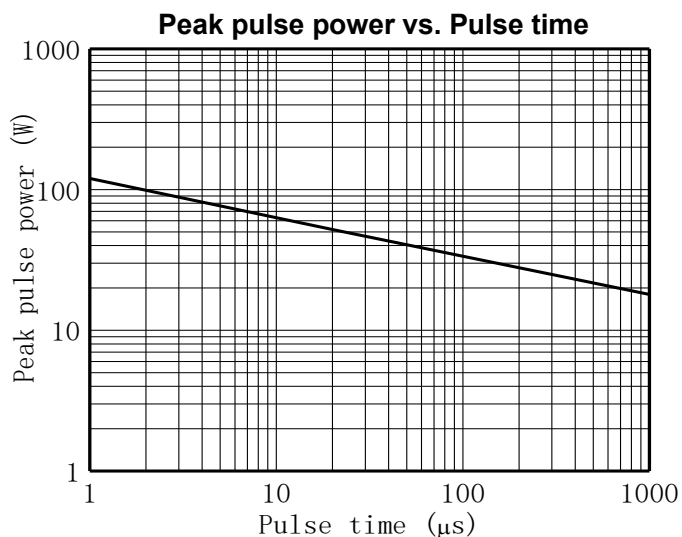
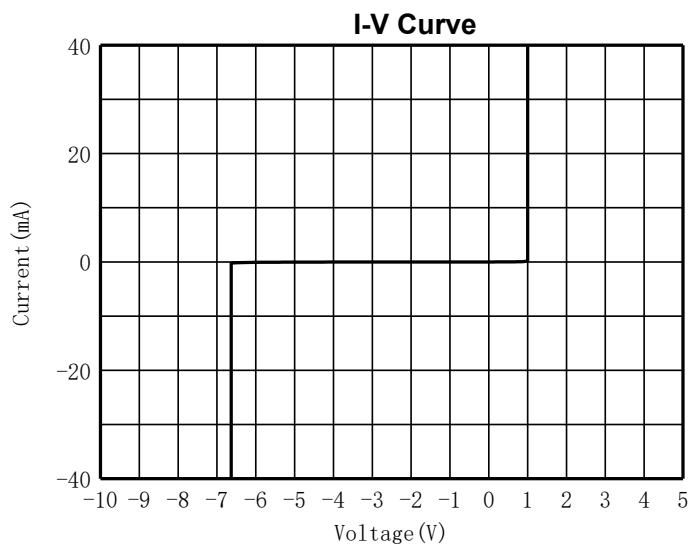
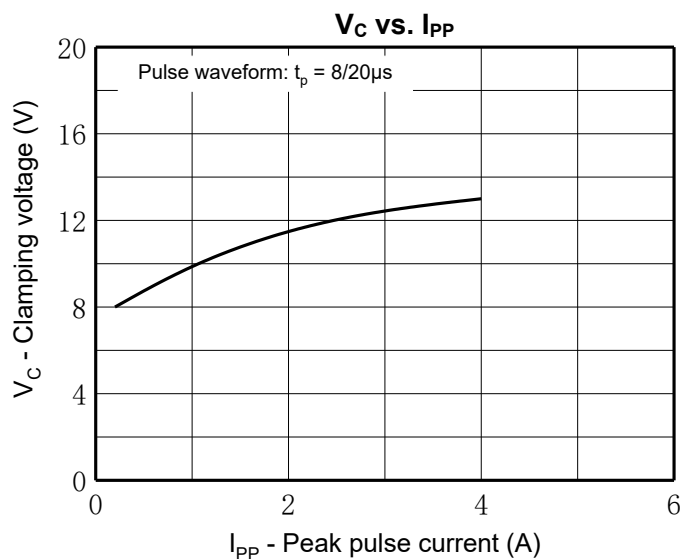
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

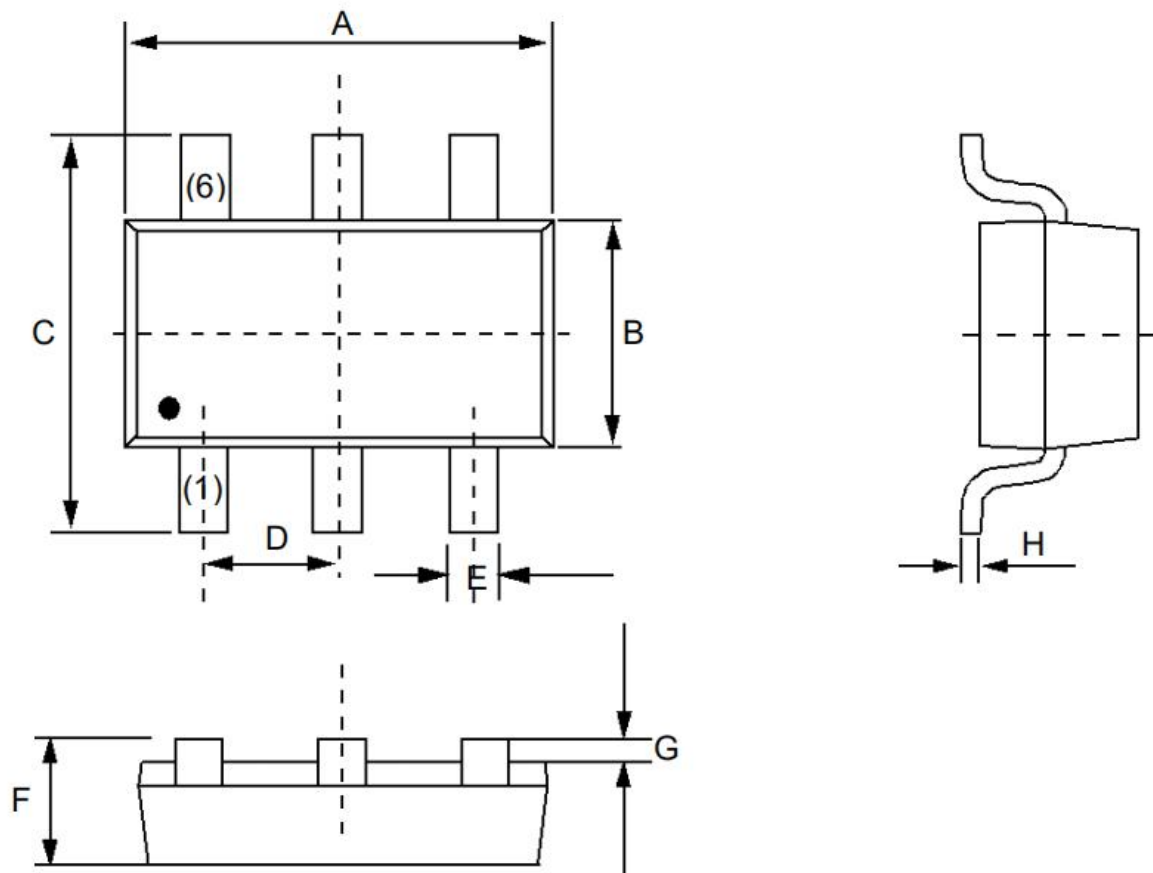
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse Standoff Voltage	$V_{RWM}^{1)}$				5	V
Reverse Leakage Current	I_R	$V_{RWM}=5\text{V}$			0.2	μA
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	5.5	7	9	V
Clamping Voltage	$V_C^{2)}$	$I_{PP}=4\text{A}$, I/O to GND			13	V
		$I_{PP}=16\text{A}$, V_{CC} to GND			17	V
Channel Input Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$, I/O to GND		0.6	0.7	pF
		$V_R=0\text{V}$, $f=1\text{MHz}$, I/O to I/O		0.3	0.4	pF

1) Other voltages available upon request.

2) Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5

Typical Characteristics



SOT-363 Package Outline Dimensions


Symbol	Dimensions In Millimet	
	Min	Max
A	2.0	2.2
B	1.10	1.40
C	2.10	2.50
D	0.65BSC	
E	0.15	0.35
F	0.90	1.1
G	0.00	0.12
H	0.05	0.20

Attention:

- GreenPower Electronics reserves the right to improve product design function and reliability without notice.
- Any and all semiconductor products have certain probability to fail or malfunction, which may result in personal injury, death or property damage. Customer are solely responsible for providing adequate safe measures when design their systems.
- GreenPower Electronics products belong to consumer electronics or other civilian electronic products.