

Transient Voltage Suppressor

Features

- ◆100 Watts Peak Pulse Power
- ◆Low Clamping Voltage
- ◆Ultra Low Capacitance (< 0.4pF)
- ◆Working Voltage: 5V
- ◆Low Leakage Current
- ◆Response Time is Typically < 1 ns

IEC COMPATIBILITY (EN61000-4)

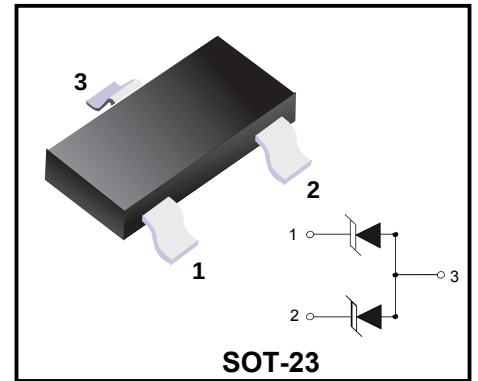
- ◆IEC 61000-4-2 (ESD) $\pm 18\text{kV}$ (air), $\pm 12\text{kV}$ (contact)
- ◆IEC 61000-4-4 (EFT) 40A (5/50ns)
- ◆IEC 61000-4-5 (Lightning) 5A (8/20 μs)

Mechanical Characteristics

- ◆SOT-23 package
- ◆Molding compound flammability rating:
UL 94V-0
- ◆Marking: Marking Code
- ◆Packaging: Tape and Reel per EIA 481
- ◆RoHS Compliant

Applications

- ◆Laptop Computers
- ◆USB 2.0 and USB 3.0
- ◆Cellular Phones
- ◆Digital Cameras
- ◆HDMI 1.3 and HDMI 1.4



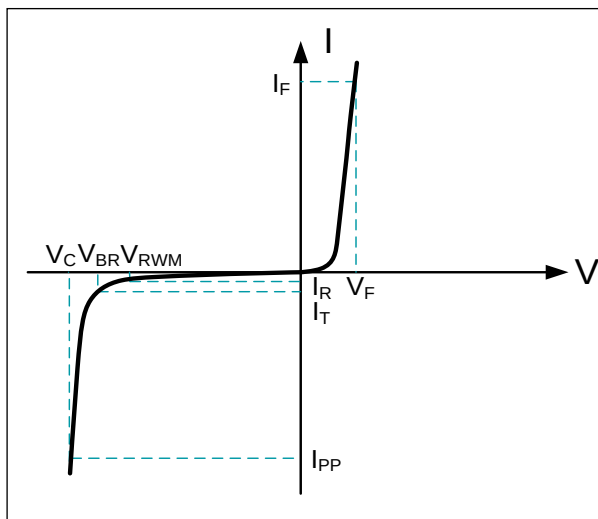
Marking Code	
ESD5VUT233	5MU

Absolute Maximum Rating

Parameter	Symbol	Rating	Unit
ESD per IEC61000-4-2(Air) ESD per IEC61000-4-2(Contact)	V_{ESD}	± 18 ± 12	Kv
Peak Pulse Power ($t_p=8/20\mu\text{s}$ waveform)	P_{PP}	100	W
Peak Pulse Current (8/20 μs)	I_{PP}	5	A
Operating Temperature Range	T_j	-55 ~ +125	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ +150	$^{\circ}\text{C}$

Electrical Parameters (T=25°C)

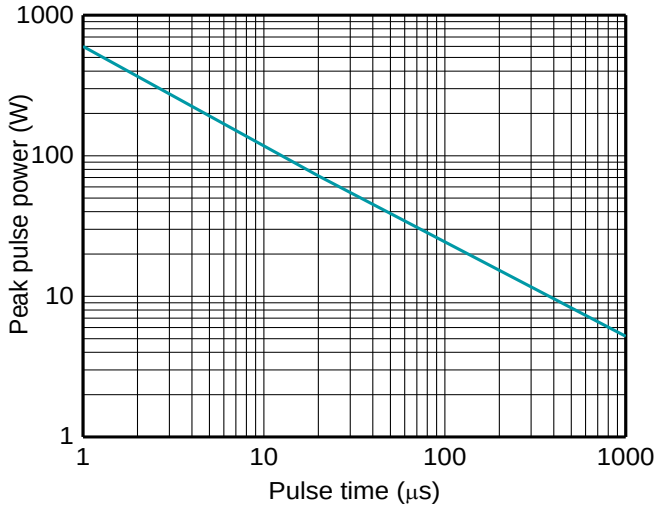
Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse Stand-Off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F



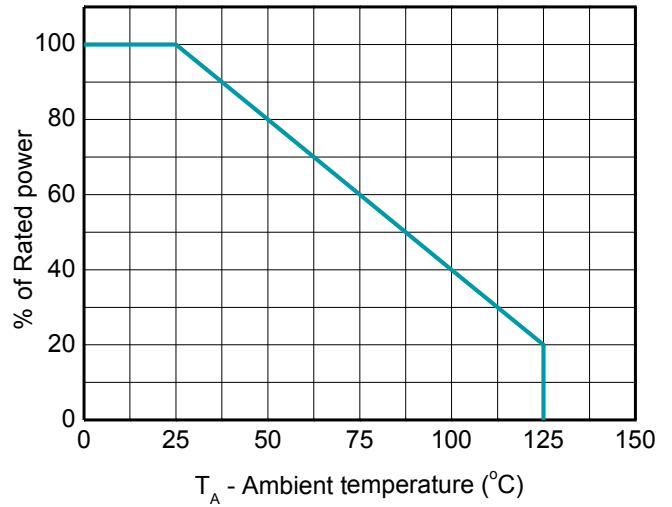
Electrical Characteristics

Parameter	Test Conditions	Symbol	Criterion			Unit
			Min	Typ	Max	
Reverse stand off voltage		V_{RWM}			5.0	V
Breakdown Voltage	$I_T = 1mA$	V_{BR}	6.0			V
Reverse leakage current	$V_{RWM} = 5V, T=25^{\circ}C$	I_R			0.5	μA
Clamping voltage	$I_{pp}=1A, tp=8/20\mu s$	V_C			10	V
Clamping voltage	$I_{pp}=5A, tp=8/20\mu s$	V_C			15	V
Junction capacitance	$V_R = 0V, f = 1MHz$ I/O pin to GND	C_J		0.4	0.6	pF
	$V_R = 0V, f = 1MHz$ Between I/O pins			0.3	0.4	pF

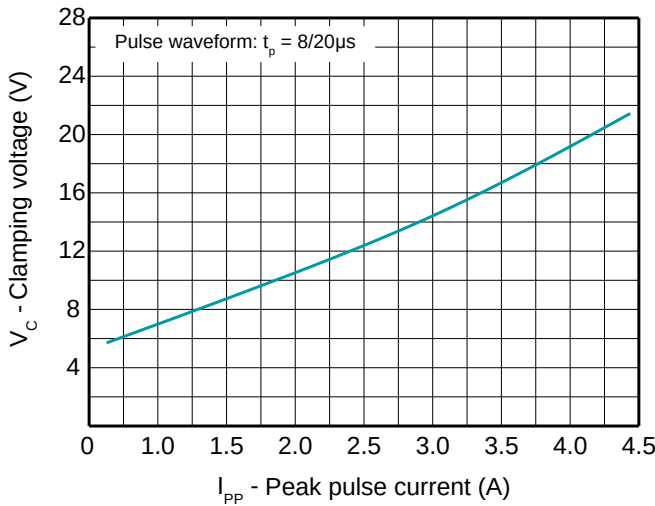
Typical Characteristics



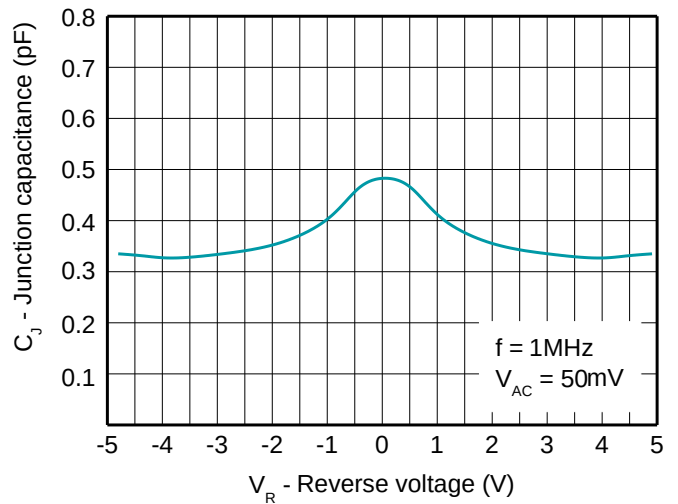
Non-repetitive peak pulse power vs. Pulse time



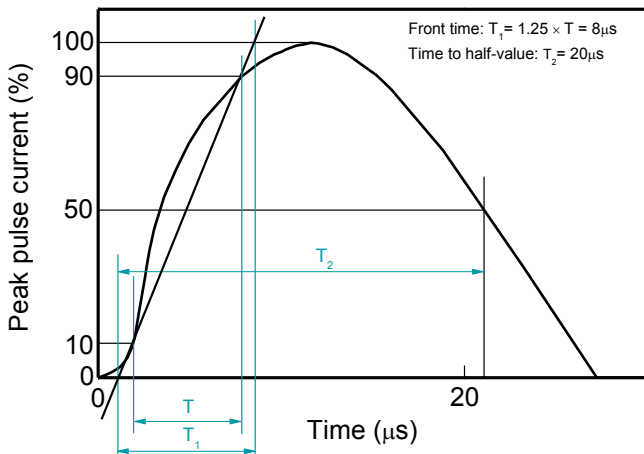
Power derating vs. Ambient temperature



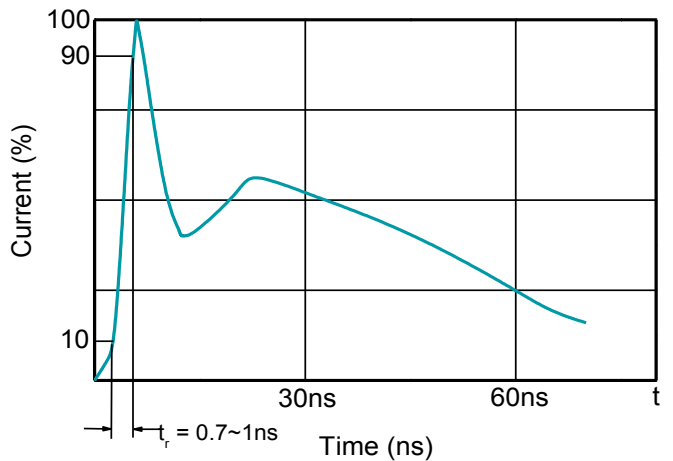
Clamping voltage vs. Peak pulse current



Capacitance vs. Reverse voltage



8/20μs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2

Ordering information

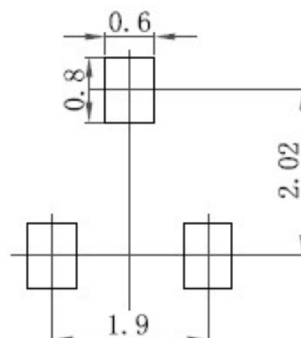
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-23

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
E	1.9		75	
E1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

The recommended mounting pad size



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