

### Features

- Ultra low leakage: nA level
- Low clamping voltage
- 3-pin leadless package
- RoHS compliant



### IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD)  $\pm 30\text{kV}$  (air),  $\pm 30\text{kV}$  (contact)
- IEC 61000-4-5 (Lightning ) 4.5A (8/20  $\mu\text{s}$ )

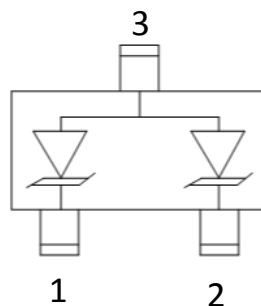
### Mechanical Characteristics

- Package: SOT-23
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel
- RoHS/WEEE Compliant
- MSD Level: 2

### Applications

- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Portable Instrumentation
- Set Top Box
- Industrial Controls
- Server and Desktop PC

### Schematic and PIN Configuration

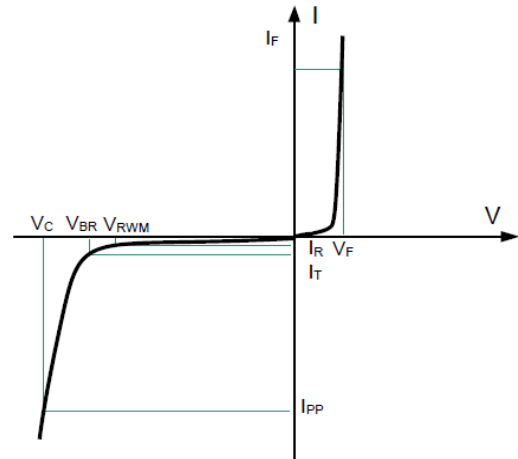


### Absolute Maximum Rating(TA=25°C unless otherwise specified)

Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p = 8/20\mu s$ )	$P_{PP}$	70	W
Peak Pulse Current ( $t_p = 8/20\mu s$ )	$I_{pp}$	4.5	A
ESD per IEC 61000-4-2(Air)	$V_{ESD}$	±30	kV
ESD per IEC 61000-4-2(contact)		±30	
Operating Temperature	$T_J$	-55 to + 125	°C
Storage Temperature	$T_{STG}$	-55 to +150	°C

### Electrical Parameters (T=25°C)

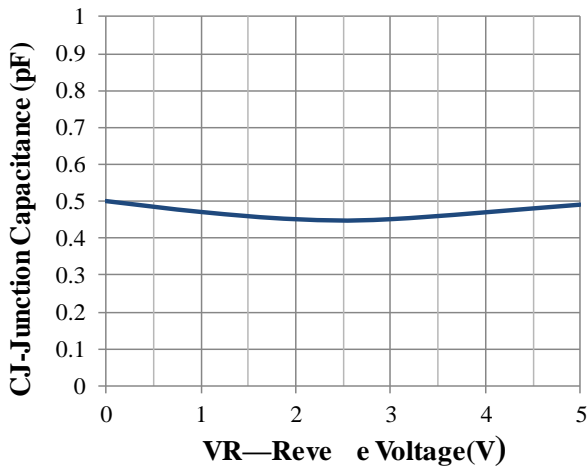
Symbol	Parameter
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_c$	Clamping Voltage @ $I_c$



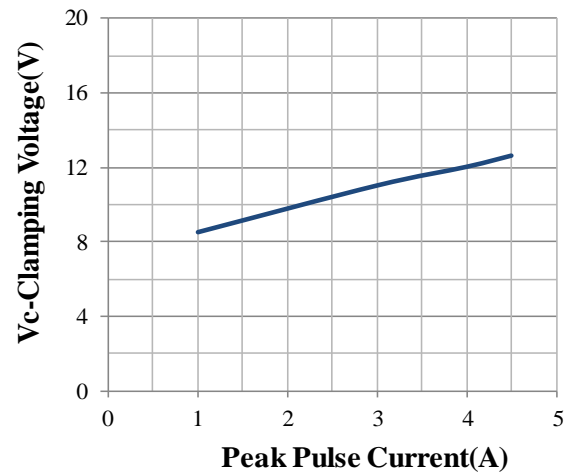
### Electrical Characteristics(TA=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{RWM}$				5.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	6.0	7.5	8.5	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5.0V, T = 25^\circ C$			0.5	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 1A, t_p = 8/20\mu s$		9	11	V
		$I_{PP} = 4.5A, t_p = 8/20\mu s$		13	15	V
Junction Capacitance	$C_j$	$V_R = 0V, f = 1MHz, \text{pin 1 or pin 2 to pin 3}$		0.5	0.6	pF
Junction Capacitance	$C_j$	$V_R = 0V, f = 1MHz, \text{between pin 1 and pin 2}$		0.3	0.35	pF

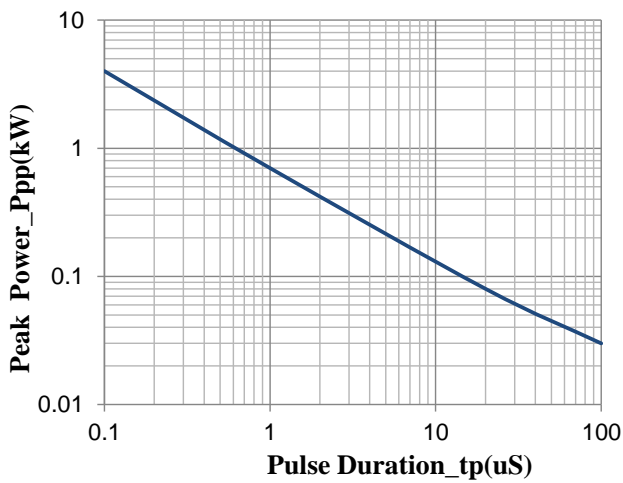
### Typical Characteristics(TA=25°C unless otherwise Specified)



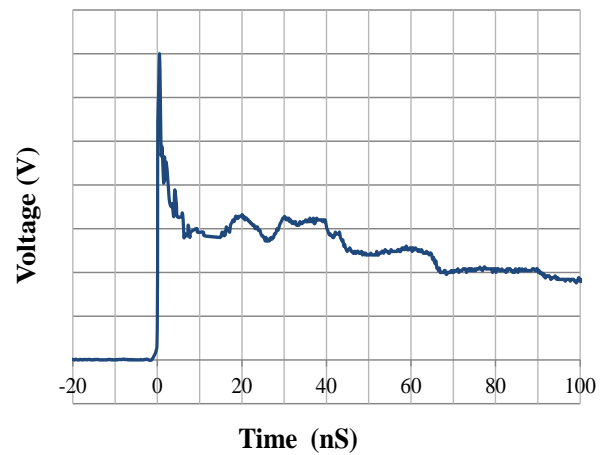
Junction Capacitance vs. Reverse Voltage



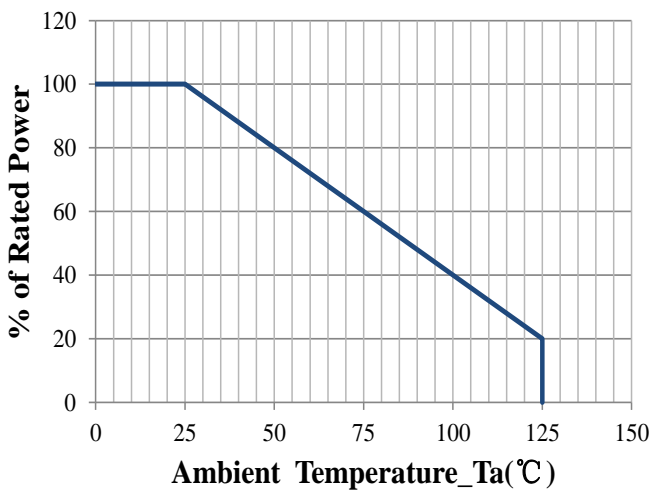
Clamping Voltage vs. Peak Pulse Current



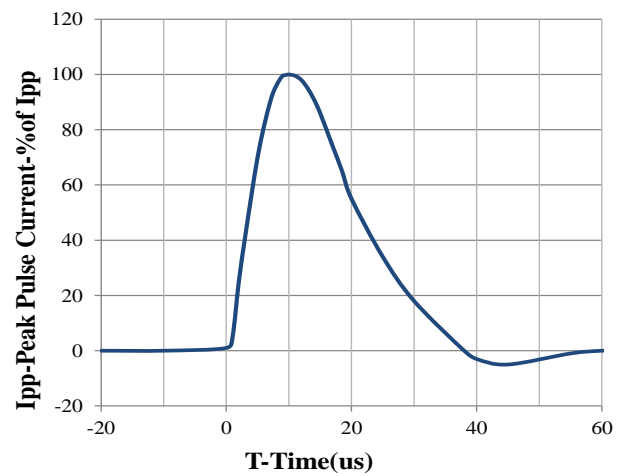
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



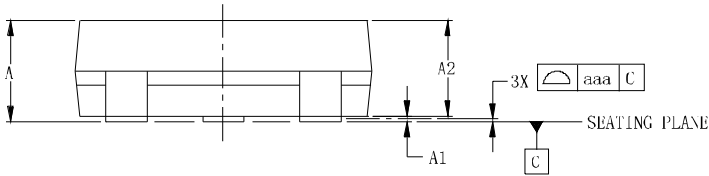
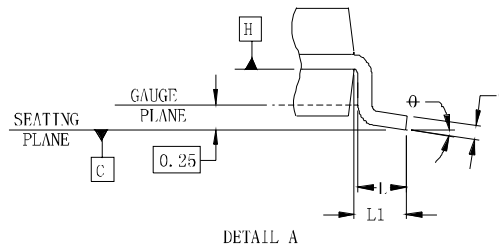
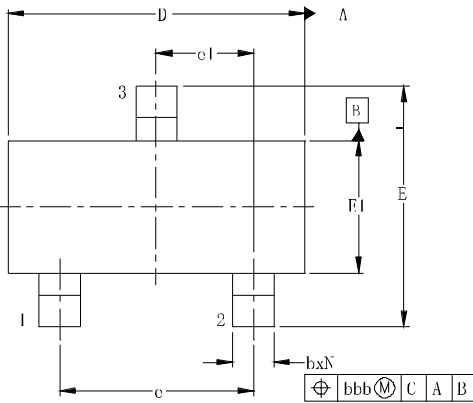
Power Derating Curve



8 X 20us Pulse Waveform

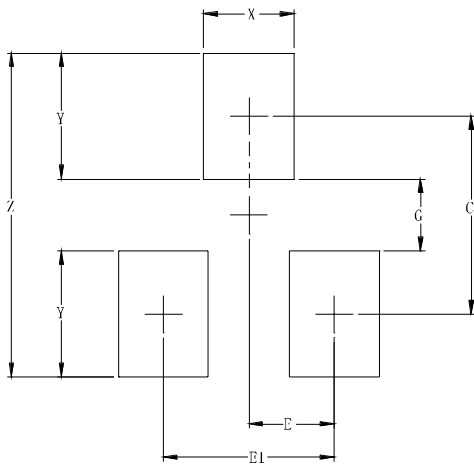


### SOT-23 Package Outline Drawing



DIM	DIMENSIONS					
	INCHES			MILLIMETERS		
	MTN	NOM	MAX	MTN	NOM	MAX
A	.035	—	.044	0.89	—	1.12
A1	.000	—	.004	0.01	—	0.10
A2	.035	.037	.040	0.88	0.95	1.02
b	.012	—	.020	0.30	—	0.51
c	.003	—	.007	0.08	—	0.18
D	.110	.114	.120	2.80	2.90	3.04
E	.082	.093	.104	2.10	2.37	2.64
E1	.047	.051	.055	1.20	1.30	1.40
e	.075			1.90 BSC		
e1	.037			0.95 BSC		
L	.015	.020	.024	0.40	0.50	0.60
L1	.022			(0.55)		
N	3			3		
θ	0°	—	8°	0°	—	8°
aaa	.001			0.10		
bbb	.008			0.20		

### Suggested Land Pattern



DIM	DIMENSIONS	
	INCHES	MILLIMETERS
C	.087	2.20
E	.037	0.95
E1	.075	1.90
G	.031	0.80
X	.039	1.00
Y	.055	1.40
Z	.141	3.60

### Order Information

Order code	Package	Packaging	Reel Size
MST23A052UA	SOT-23	3000/Tape & Reel	7 inch