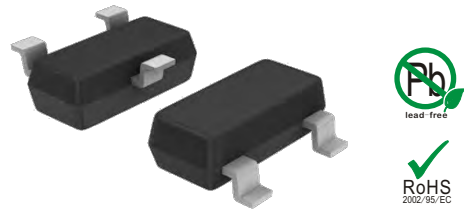


## Features

- 300 watts peak pulse power ( $t_p = 8/20\mu s$ )
- Protects one bi-directional or two uni-directional line(s)
- Ultra low leakage: nA level
- Stand-off voltage: 12V
- Ultra low clamping voltage
- RoHS compliant



## IEC Compatibility (EN61000-4)

- IEC 61000-4-2  $\pm 30kV$  contact  $\pm 30kV$  air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 10A (8/20 $\mu s$ )

SOT-23

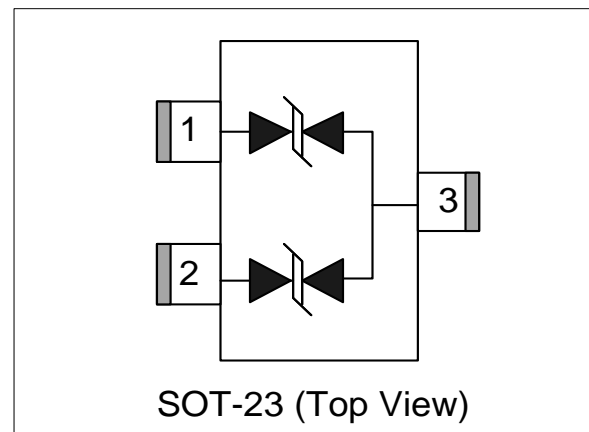
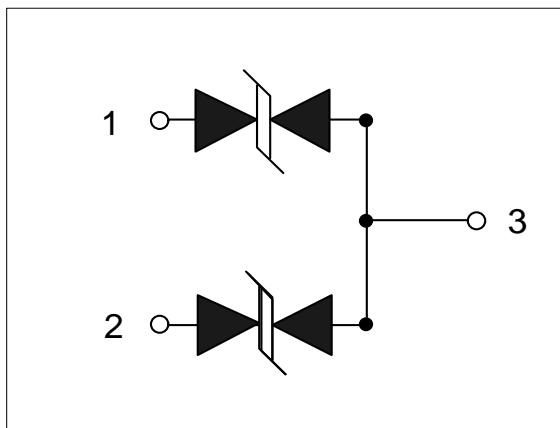
## Applications

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

## Mechanical Characteristics

- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

## Schematic & PIN Configuration



## Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power ( $t_p = 8/20\mu s$ waveform)	$P_{PP}$	300	W
Peak Pulse Current (8/20 $\mu s$ )	$I_{PP}$	10	A
ESD per IEC 61000-4-2 (Air)	$V_{ESD}$	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	$T_J$	-55 to +125	$^{\circ}C$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^{\circ}C$

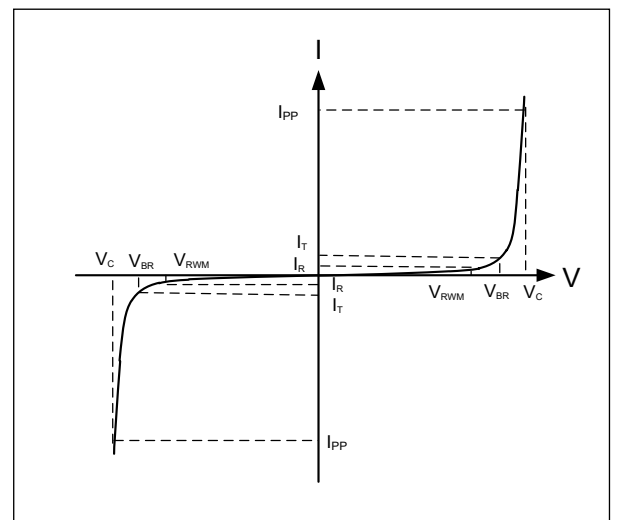
## Electrical Characteristics

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$				12	V
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	13.3			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 12V$			1	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 1A$ (8 x 20 $\mu s$ pulse)		19		V
Clamping Voltage	$V_C$	$I_{PP} = 10A$ (8 x 20 $\mu s$ pulse)			30	V
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		60		pF

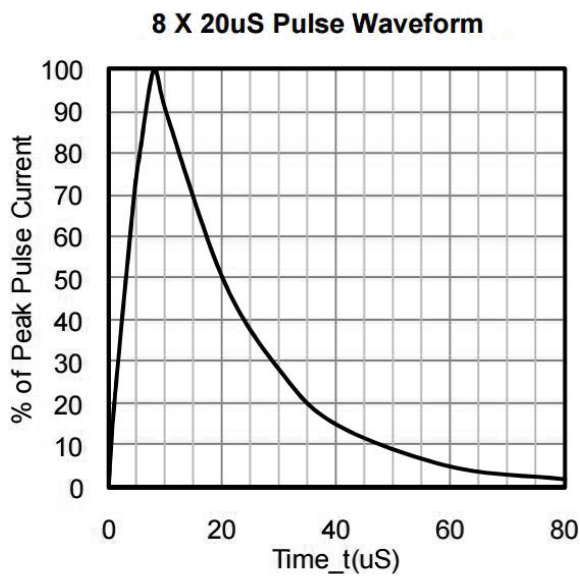
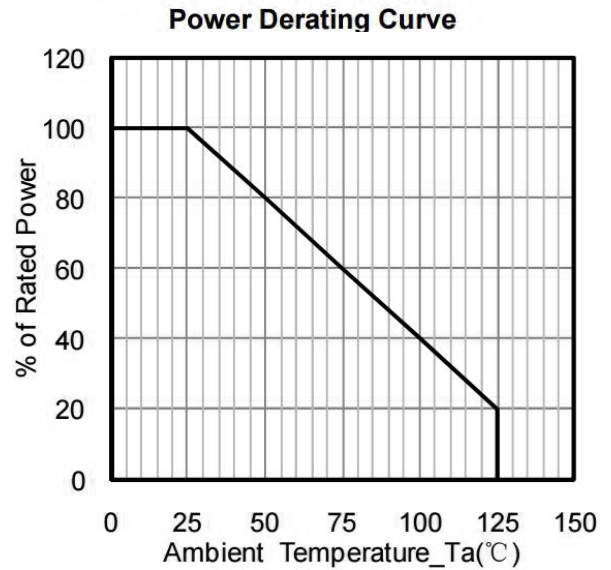
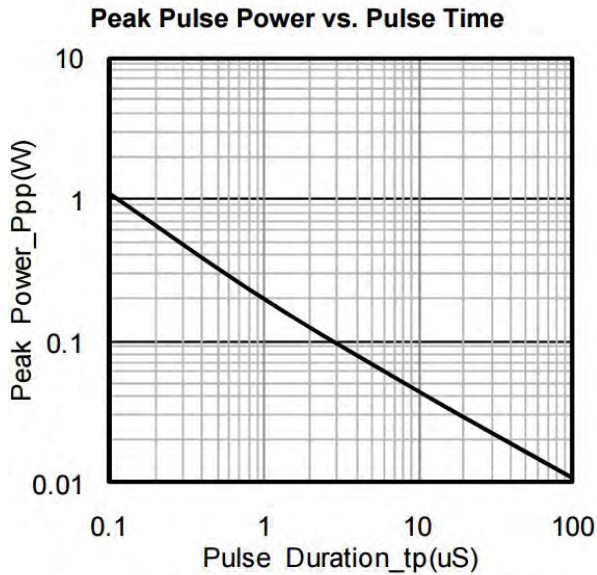
## Electrical Parameters (TA = 25 $^{\circ}C$ unless otherwise noted)

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

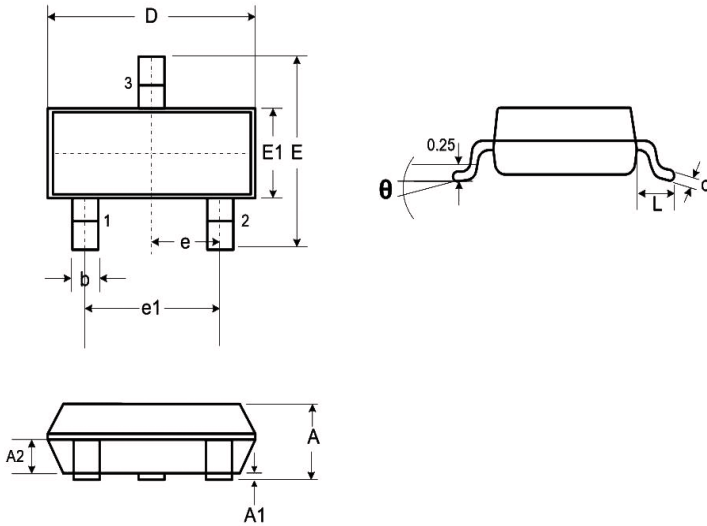
Note.: 8/20 $\mu s$  pulse waveform.



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

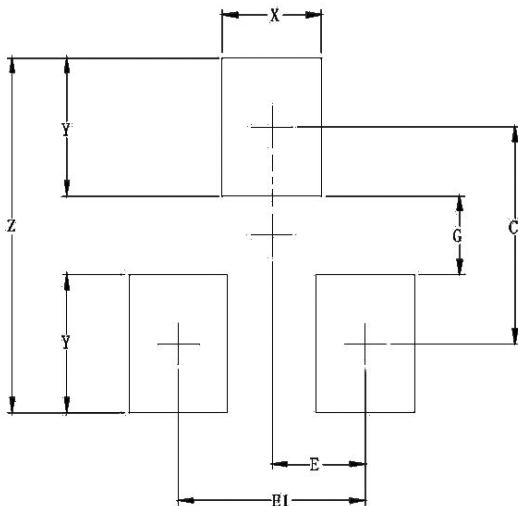


## Package Mechanical Data



GMA	8-A9BG-CBG					
	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.035	-	0.044	0.890	-	1.120
A1	0.000	-	0.004	0.010	-	0.100
A2	0.035	0.037	0.040	0.880	0.950	1.020
b	0.012	-	0.020	0.300	-	0.510
c	0.030	-	0.007	0.080	-	0.180
D	0.110	0.114	0.120	2.800	2.900	3.040
E	0.082	0.093	0.104	2.100	2.370	2.640
E1	0.047	0.051	0.055	1.200	1.300	1.400
e	0.075			1.900		
e1	0.037			0.950		
L	0.015	0.020	0.024	0.400	0.500	0.60
L1	0.022			0.550		
N	3.000			3.000		
θ	0°	-	8°	0°	-	8°

## Suggested Land Pattern



GMA	8-A9BG-CBG	
	A=09A9H9FG	B7<9G
C	0.087	2.200
E	0.037	0.950
E1	0.075	1.900
G	0.031	0.800
X1	0.039	1.000
Y	0.055	1.400
Z	0.141	3.600

## Ordering Information

Order code	Package	Base qty	Delivery mode
PTT233H60S12BA30	SOT-23	3K	Tape and reel