

### Features

- 500 Watts Peak Pulse Power per Line ( $t_p = 8/20\mu s$ )
- Protects one I/O or power line
- Low Clamping Voltage
- Working Voltage: 24 V
- Low Leakage Current
- Response Time is Typically  $< 1$  ns



### IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD)  $\pm 30$ kV (air),  $\pm 30$ kV (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 9A (8/20 $\mu s$ )

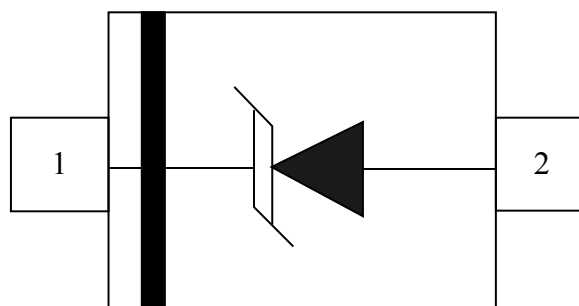
### Mechanical Characteristics

- JEDEC SOD-523 package
- Molding compound flammability rating:  
UL 94V-0
- Marking : Marking Code
- Packaging : Tape and Reel
- RoHS Compliant

### Applications

- Cellular Handsets & Accessories
- Personal Digital Assistants (PDAs)
- Notebooks & Handhelds
- Portable Instrumentation
- Digital Cameras
- MP3 players

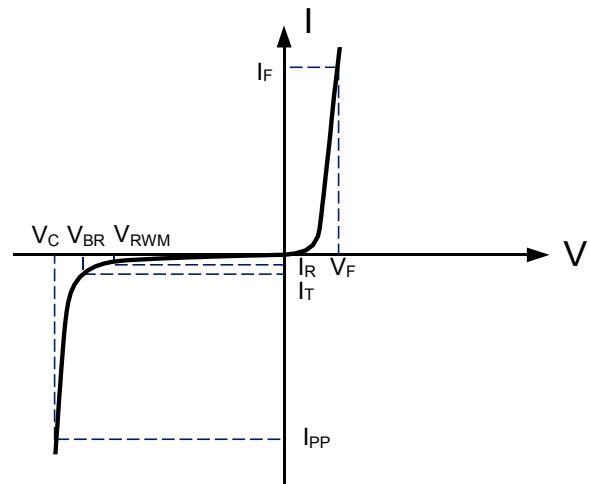
### Schematic & PIN Configuration



Absolute Maximum Rating			
Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p = 8/20\mu s$ )	$P_{PP}$	500	Watts
Operating Temperature	$T_J$	-55 to + 125	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55 to +150	$^{\circ}C$

### Electrical Parameters (T=25 $^{\circ}C$ )

Symbol	Parameter
$I_{PP}$	Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse 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 @ $I_F$

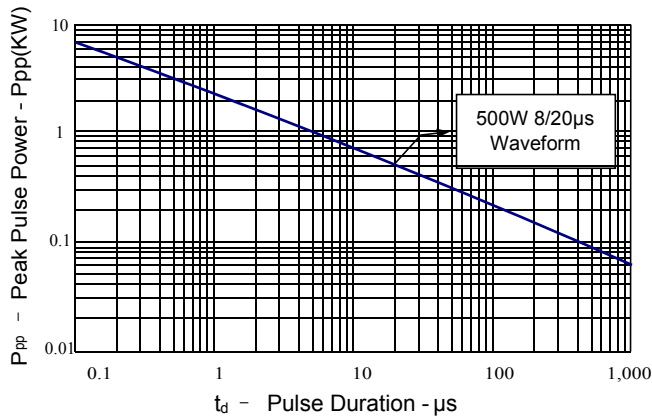


### Electrical Characteristics

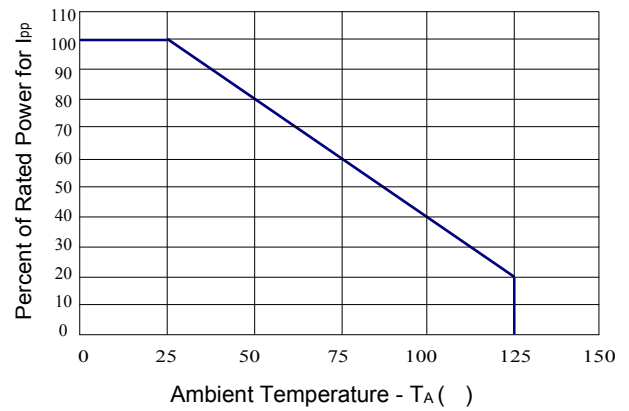
MSD5A241V						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	$V_{RWM}$				24	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	26.7			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 24\text{V}, T = 25^{\circ}C$			0.5	$\mu A$
Peak Pulse Current	$I_{PP}$	$t_p = 8/20\mu s$			9	A
Clamping Voltage	$V_C$	$I_{PP} = 9\text{A}, t_p = 8/20\mu s$		48	52	V
Junction Capacitance	$C_j$	$V_R = 0\text{V}, f = 1\text{MHz}$		45	50	pF

## Typical Characteristics

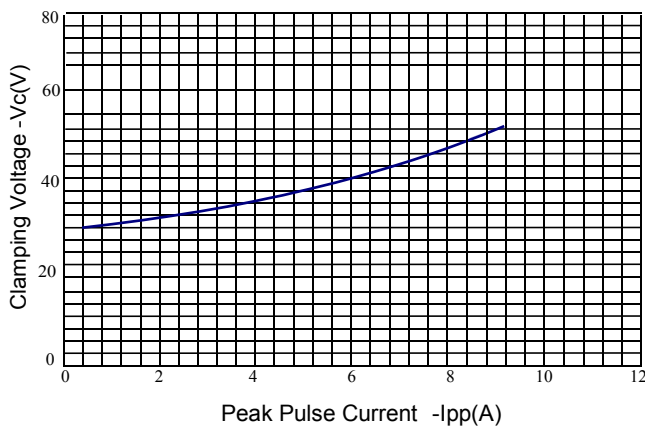
**Figure 1: Peak Pulse Power vs. Pulse Time**



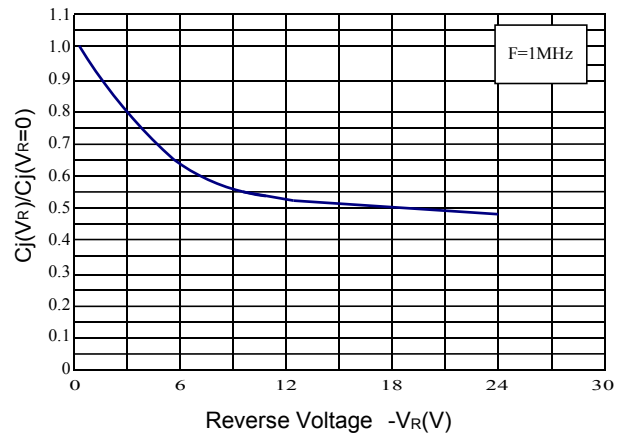
**Figure 2: Power Derating Curve**



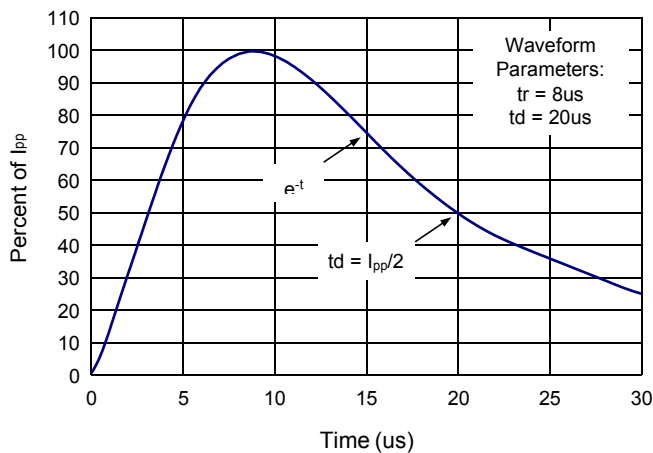
**Figure 3: Clamping Voltage vs. Peak Pulse Current**



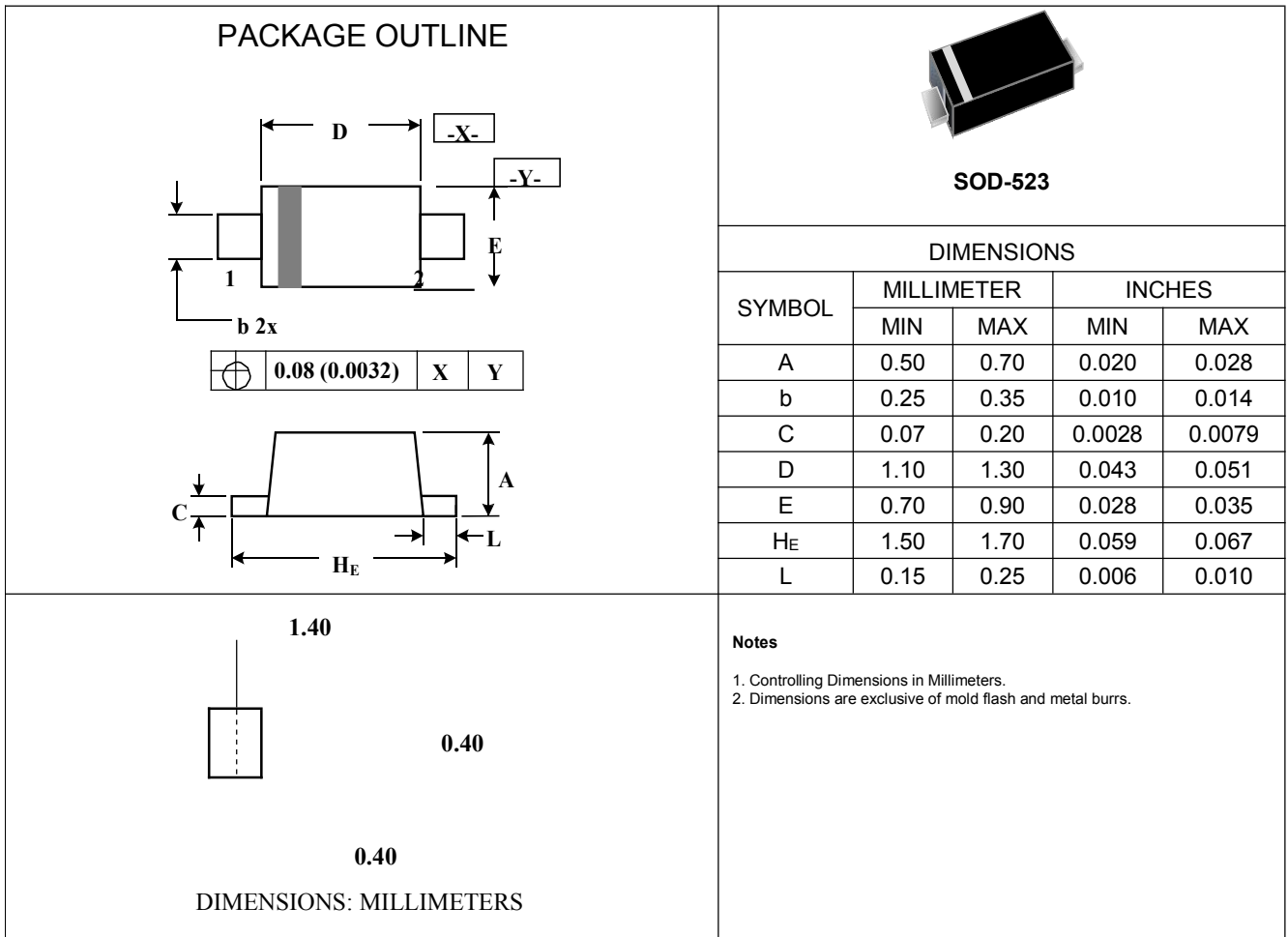
**Figure 4: Normalized Junction Capacitance vs. Reverse Voltage**



**Figure 5: Pulse Waveform**



## Outline Drawing – SOD-523



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