



## PRODUCT DATA SHEET



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**Datasheet**



**Resources**



**Samples**

Please note: Please check the JINGAO Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at [www.jg-semi.cn](http://www.jg-semi.cn). Please email any questions regarding the system integration to [JINGAO\\_questions@jgsemi.com](mailto:JINGAO_questions@jgsemi.com).

## Features

- 40Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Tiny SOT143 package
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance ( $C_j=0.35pF$  typ I/O to I/O.)
- Protection one data/power line
- IEC 61000-4-2  $\pm 15kV$  contact  $\pm 20kV$  air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 3.5A (8/20 $\mu s$ )



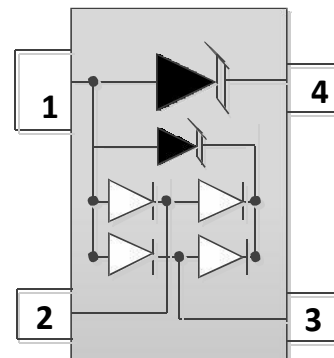
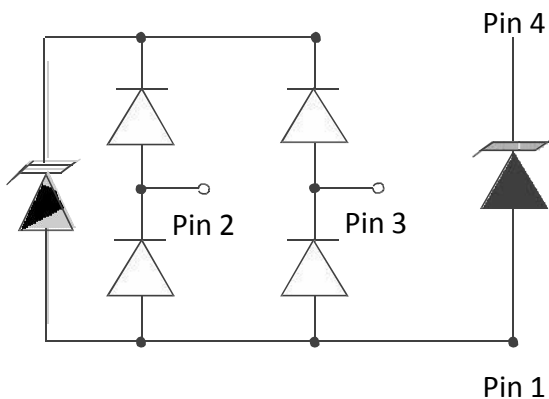
## Applications

- USB2.0,
- Ethernet
- Notebooks, Desktops, and Servers
- Video Line Protection

## Mechanical Data

- SOT143 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

## Schematic & PIN Configuration



### Absolute Maximum Rating

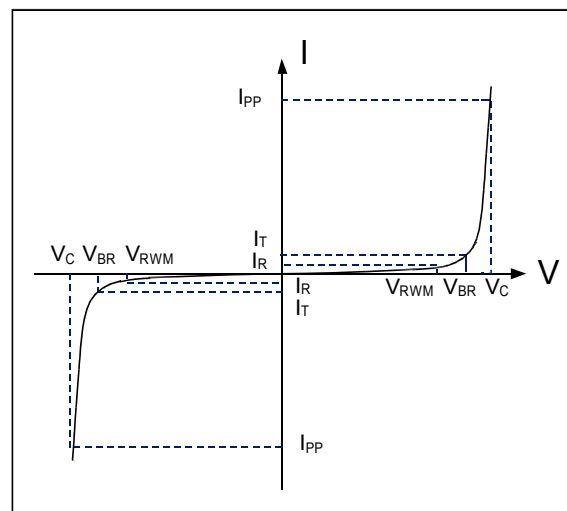
Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p=8/20\mu s$ )	$P_{PP}$	40	Watts
Peak Pulse Current ( $t_p=8/20\mu s$ ) (note1)	$I_{pp}$	3.5	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	20 15	kV
Lead Soldering Temperature	$T_L$	260(10seconds)	°C
Junction Temperature	$T_J$	-55 to + 125	°C
Storage Temperature	$T_{stg}$	-55 to + 125	°C

### Electrical Characteristics

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	7.2		V
Reverse Leakage Current	$I_R$	$V_{RWM}=5V, T=25^\circ C$		50	500	nA
Clamping Voltage	$V_C$	$I_{PP}=3.5A, t_p=8/20\mu s$		10		V
Junction Capacitance	$C_j$	$V_R = 0V, f = 1MHz$ IO to IO		0.35		pF
		$V_R = 0V, f = 1MHz$ IO to GND		0.65		

### Electrical Parameters (TA = 25°C unless otherwise noted)

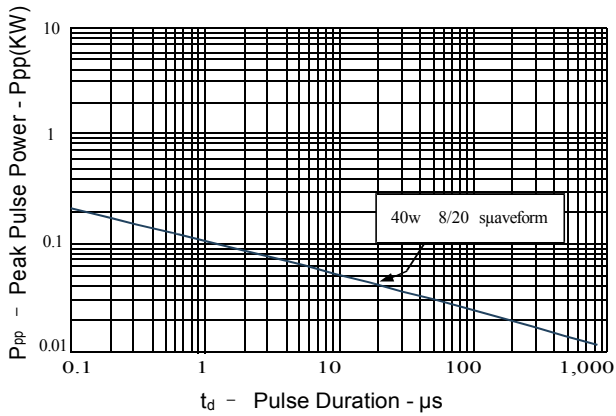
Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current



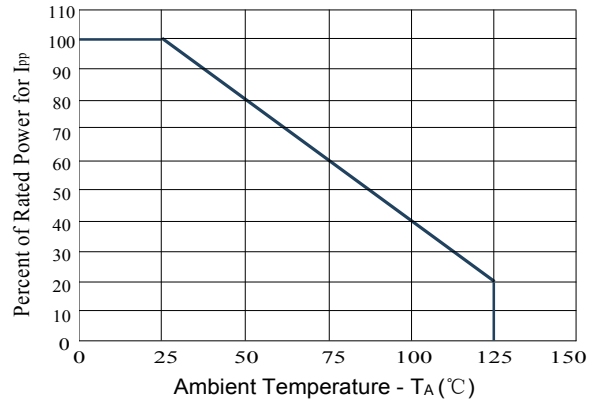
Note: 8/20 $\mu s$  pulse waveform.

**Typical Characteristics**

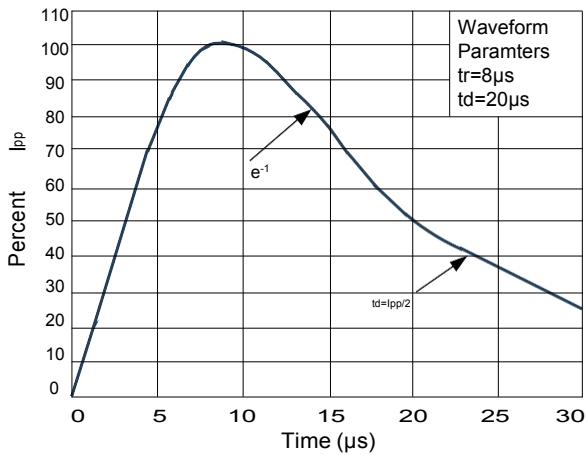
**Figure 1: Peak Pulse Power vs. Pulse Time**



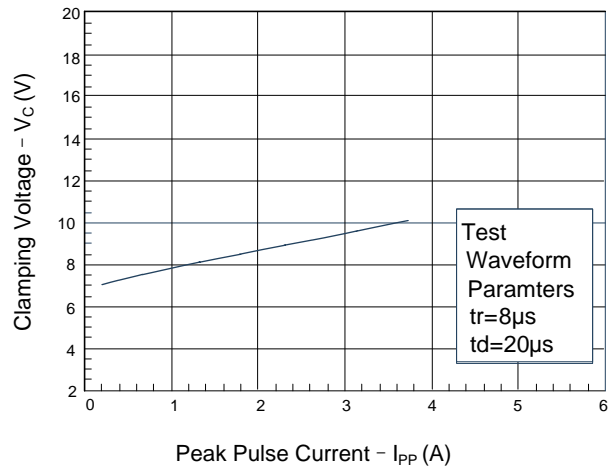
**Figure 2: Power Derating Curve**



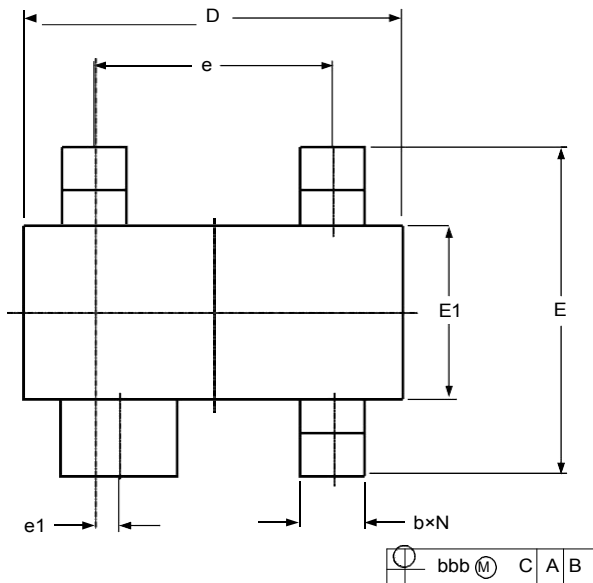
**Figure3: Pulse Waveform**



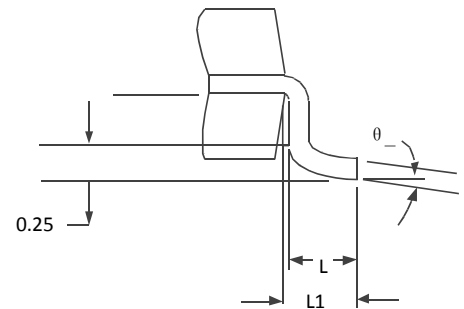
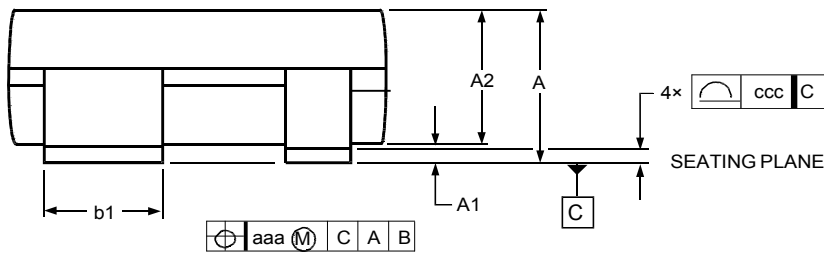
**Figure 4: Clamping Voltage vs.Ipp**



### Outline Drawing – SOT143



SYMBOL	DIMENSIONS			
	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
b1	0.750	0.900	0.030	0.035
D	2.800	3.000	0.110	0.118
e	1.800	2.000	0.071	0.079
e1	0.200TYP		0.008TYP	
E	2.250	2.550	0.089	0.100
E1	1.200	1.400	0.047	0.055
$\theta$	0°	8°	0°	8°
aaa	.006		0.15	
bbb	.008		0.20	
ccc	.004		0.10	



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