

## Surface Mount TVS Diodes Array for ESD Protection

 Lead(Pb)-Free

### FEATURES

- \* ESD Protection to IEC 61000-4-2,30KV(Air), 30KV(Contact)
- \* 300 Watts Peak Power Protection(tp=8/20 uS)
- \* Excellent Clamping Capability
- \* Low Leakage Current
- \* Protects one I/O or Power line
- \* Solid-state Silicon-avalanche Technology
- \* Small Package for use in Portable Electronics
- \* Transient Voltage Suppressors Encapsulated in a SOD-323 Package

### MECHANICAL DATA

- \* CASE: Molded Epoxy
- \* TERMINAS: UL 94V-0
- \* WEIGHT: 0.0045 gram
- \* MOUNTING POSITION: Any

### APPLICATIONS

- \* Microprocessor based equipment
- \* Notebooks, Desktops, and Servers
- \* Cell Phone Handsets and Accessories
- \* Personal Digital Assistants(PDA's)
- \* Portable Instrumentation
- \* Pagers Peripherals

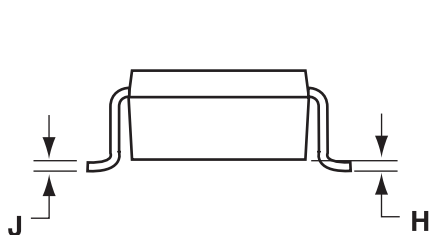
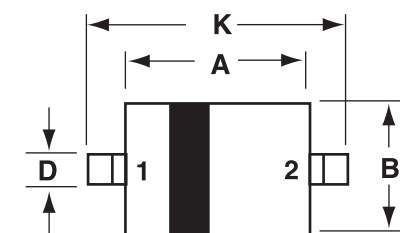
**TRANSIENT  
VOLTAGE  
SUPPRESSORS  
300 WATTS  
3-12 VOLTS**



**SOD-323**

## SOD-323 Outline Dimensions

Unit:mm



Dim	MILLMETERS	
	Min	Max
A	1.60	1.80
B	1.15	1.35
C	0.80	1.00
D	0.25	0.40
E	0.15REF	
H	0.00	0.10
J	0.089	0.177
K	2.30	2.70

PIN 1.CATHODE  
2.ANODE

**Maximum Ratings( $T_A=25^{\circ}\text{C}$  Unless Otherwise Noted)**

Characteristic	Symbol	Vote	Unit
Peak Pulse Power( $t_p = 8/20\mu\text{s}$ )	$P_{PK}$	300	W
ESD Voltage(HBM Waveform per IEC 61000-4-2)	$V_{ESD}$	30	kV
Lead Soldering Temperature	$T_L$	260(10s)	$^{\circ}\text{C}$
Operating Temperature Range	$T_J$	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^{\circ}\text{C}$

**ELECTRICAL CHARACTERISTICS (  $T = 25^{\circ}\text{C}$  )**

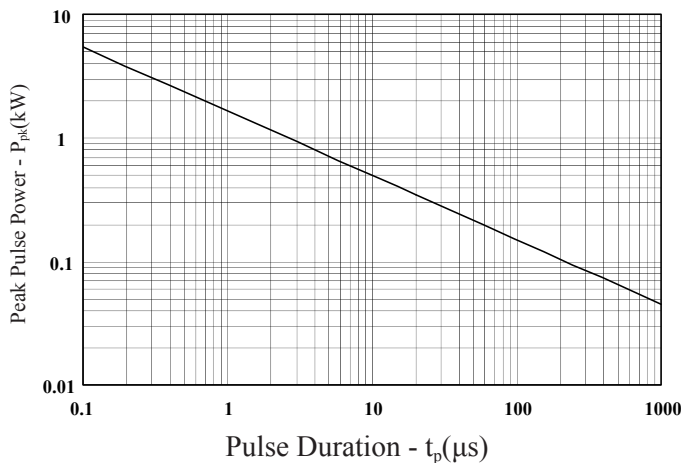
<b>WOSD03</b>					
TYPE NUMBER	Symbol	Min	Typ	Max	Unit
Reverse Stand-Off Voltage	$V_{RWM}$	-	-	4	V
Reverse Breakdown Voltage $I_t = 1\text{mA}$	$V_{BR}$	5	-	-	V
Reverse Leakage Current $V_{RWM} = 3.3\text{V}$	$I_R$	-	-	20	$\mu\text{A}$
Clamping Voltage $I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$ $I_{PP} = 5\text{A}, t_p = 8/20\mu\text{s}$	$V_C$	-	-	7 8.5	V
Peak Pulse Current $t_p = 8/20\mu\text{s}$	$I_{PP}$	-	-	12	A
Junction Capacitance $V_R = 0\text{V}, f = 1\text{MHz}$	$C_j$	-	-	350	pF
Device Marking		3D			

<b>WOSD05</b>					
TYPE NUMBER	Symbol	Min	Typ	Max	Unit
Reverse Stand-Off Voltage	$V_{RWM}$	-	-	5	V
Reverse Breakdown Voltage $I_t = 1\text{mA}$	$V_{BR}$	6	-	-	V
Reverse Leakage Current $V_{RWM} = 5\text{V}$	$I_R$	-	-	10	$\mu\text{A}$
Clamping Voltage $I_{PP} = 5\text{A}, t_p = 8/20\mu\text{s}$ $I_{PP} = 24\text{A}, t_p = 8/20\mu\text{s}$	$V_C$	-	-	9.8 14.5	V
Peak Pulse Current $t_p = 8/20\mu\text{s}$	$I_{PP}$	-	-	24	A
Junction Capacitance $V_R = 0\text{V}, f = 1\text{MHz}$	$C_j$	-	-	350	pF
Device Marking		ZA			

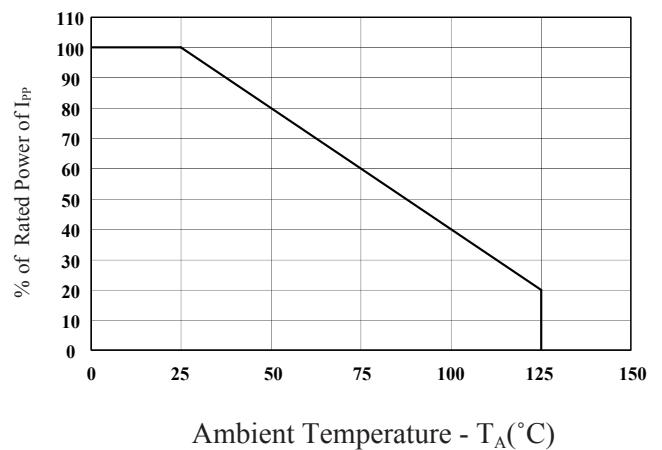
**ELECTRICAL CHARACTERISTICS (  $T_A=25^{\circ}\text{C}$  Unless Otherwise Noted)**

<b>WOSD12</b>					
<b>TYPE NUMBER</b>	<b>Symbol</b>	<b>Min</b>	<b>Typ</b>	<b>Max</b>	<b>Unit</b>
Reverse Stand-Off Voltage	$V_{RWM}$	-	-	12	V
Reverse Breakdown Voltage $I_t = 1\text{mA}$	$V_{BR}$	13.3	-	-	V
Reverse Leakage Current $V_{RWM} = 12\text{V}$	$I_R$	-	-	1	$\mu\text{A}$
Clamping Voltage $I_{PP} = 5\text{A}, t_p = 8/20\mu\text{s}$ $I_{PP} = 15\text{A}, t_p = 8/20\mu\text{s}$	$V_C$	-	-	19 25	V
Peak Pulse Current $t_p = 8/20\mu\text{s}$	$I_{PP}$	-	-	15	A
Junction Capacitance $V_R = 1\text{V}, f = 1\text{MHz}$	$C_j$	-	-	90	pF
Device Marking		6u , ZC			

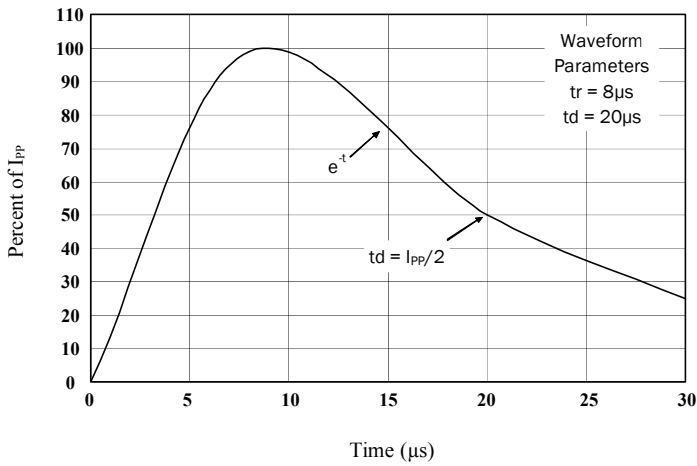
**ELECTRICAL CHARACTERISTICS CURVES**



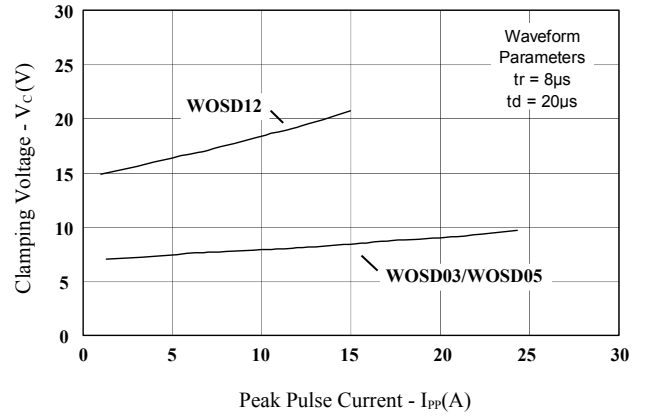
**Fig.1 Non-Repetitive Peak Pulse Power vs. Pulse Time**



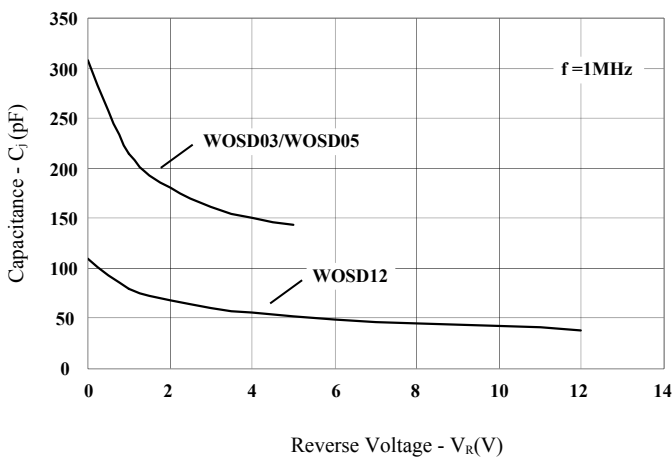
**Fig.2 Power Derating Curve**



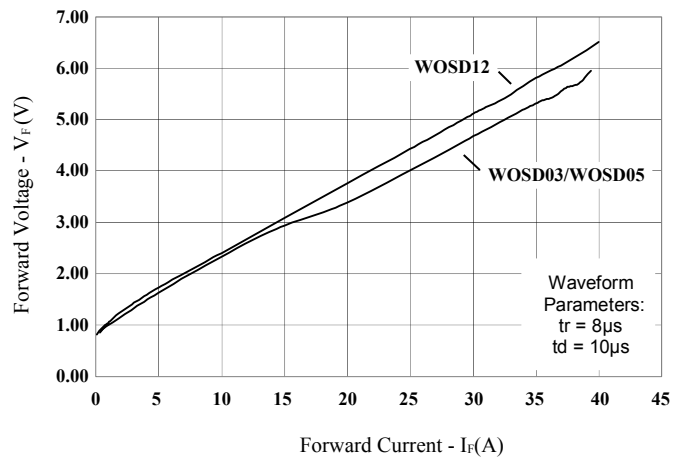
**Fig.3 Pulse Waveform**



**Fig.4 Clamping Voltage vs. Peak Pulse Current**



**Fig.5 Capacitance vs. Reverse Voltage**



**Fig.6 Forward Voltage vs. Forward Current**