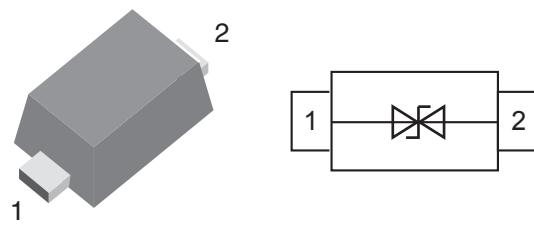


ESD Protection Diode in SOD-523

Features

- 100Watts peak pulse power ($T_p = 8/20\mu s$)
- SOD-523 package
- Bidirectional configurations
- Low clamping voltage
- Low leakage current
- Medium capacitance ($C_J=13pF$ typ.)
- Protection one data/power line to:
 - 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 μs)



Mechanical Data

- **Case:** SOD-523 (plastic package). Lead free; RoHS compliant; Halogen free
- **Molding Compound Flammability Rating:** UL 94 V-0
- **Terminals:** High temperature soldering guaranteed: 260 °C/10 sec. at terminals

Applications

- Computers and peripherals
- Communication systems
- Notebook
- Cellular handsets and accessories
- Portable electronics
- Audio and video equipment

Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

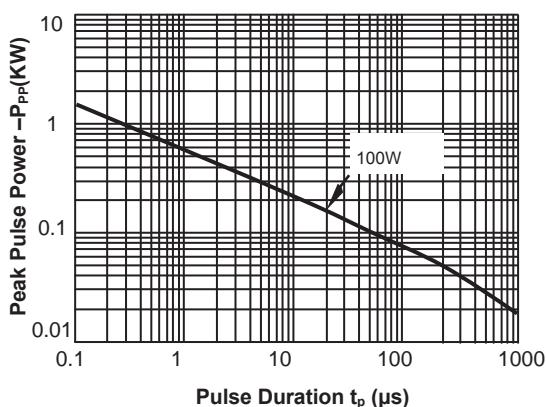
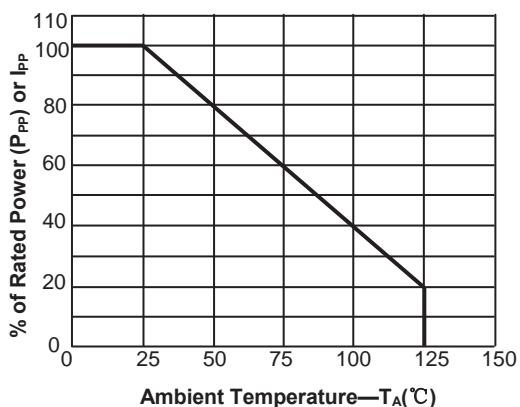
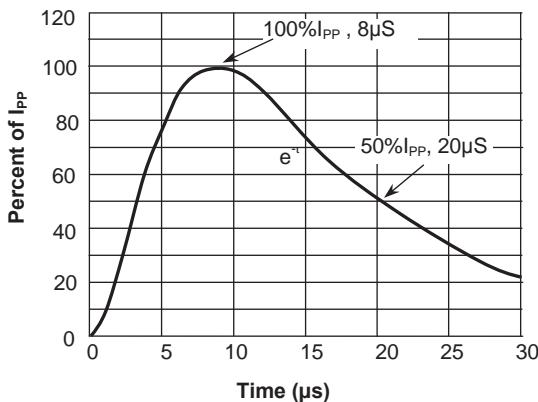
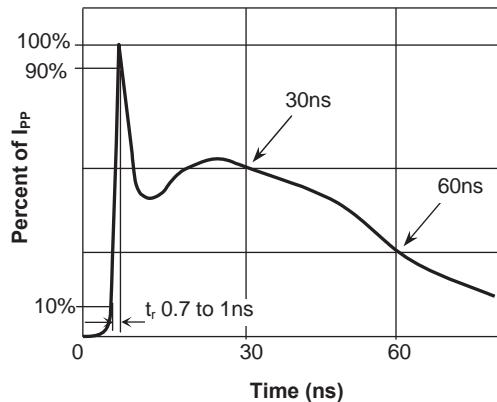
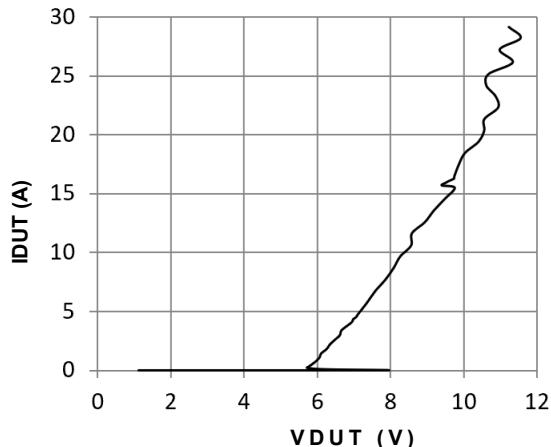
Parameter	Symbol	Value	Unit
Peak Pulse Power ($T_p=8/20\mu s$)	P_{PP}	100	W
ESD contact/air discharge (IEC-61000-4-2)	V_{ESD}	30/30	kV
Peak Pulse Current ($T_p = 8/20\mu s$)	I_{PP}	10	A
Junction Temperature	T_J	-55 to +125	°C
Storage temperature	T_{STG}	-55 to +150	°C

Electrical Characteristics

($T_A = 25$ °C unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Reverse stand-off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	5.6			V
Reverse Leakage Current	I_R	$V_R = 5.0V$		1		uA
Clamping Voltage	V_C	$I_{PP}=10A, T_p=8/20\mu s$		10		V
Clamping Voltage (TLP)	V_C	$I_{PP}=16A, T_p=100ns$		9.5		V
Dynamic Resistance	R_{dyn}	$T_p=100ns$			0.22	Ω
Junction Capacitance	C_J	$V_R=0V, f=1MHz$		13		pF

Typical Characteristics ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified)

Fig.1 Peak Pulse Power Rating Curve

Fig.2 Pulse Derating Curve

Fig.3 Pulse Waveform-8/20μs

Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

Fig.5 Transmission Line Pulse


Package Dimensions

Dim	millimeters	
	min	max
A	0.50	0.70
C	0.07	0.20
D	0.70	0.90
E	1.10	1.30
F	1.50	1.70
G	0.15	0.25
H	0.25	0.35

PAD Dimensions

Dim	millimeters
I	1.47
J	0.53
K	0.5

Package Information

TapeSize(W)	B1 max	D	E	F	K max	P0	P1	P2	T max	W max
8	4.55	1.55 ± 0.05	1.75 ± 0.1	3.5 ± 0.05	2.4	4.0 ± 0.1	2.0 ± 0.05	2.0 ± 0.05	0.6	8.3

Note: 1. unit : mm
 2. A0, B0, and K0 are determined by component size. The clearance between the components and the cavity must be within 0.05mm min to 0.50 mm max. The component cannot rotate more than 10° within the determined cavity.

Ordering information

Order code	Marking	Package	Packaging option	Base quantity	Packaging specification
TESD523NC5VB	5C	SOD-523	Tape and reel	5000pcs / reel	EIA STD RS-481