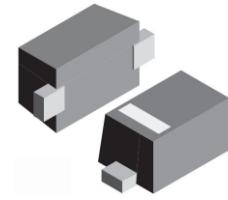


ESD12VD5

Description

ESD12VD5 is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.



Features

- Uni-directional ESD protection of one line
- Package: SOD-523
- Ultra low leakage
- Low operating voltage: 12V
- Low clamping voltage
- Response Time is Typically < 1 ns
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25\text{kV}$
 - Contact discharge: $\pm 25\text{kV}$
 - IEC61000-4-5 (Lightning) 9A (8/20 μs)
- Marking: ZM

Absolute Ratings

T_{amb}=25°C unless otherwise specified

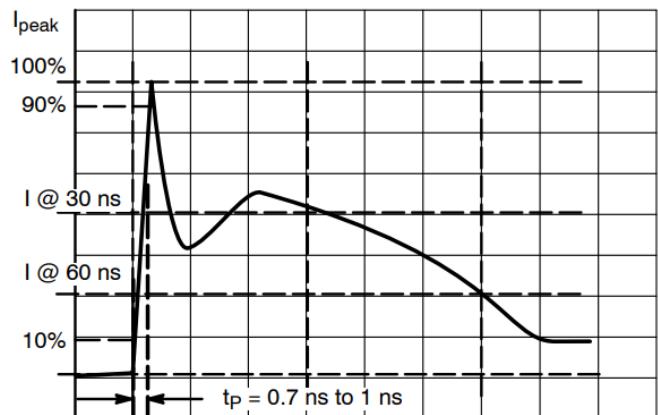
Parameter	Symbol	Value	Unit
Peak pulse power (tp = 8/20 μs)	P _{PK}	220	W
Maximum Reverse Peak Pulse Current(8/20 μs)	I _{PP}	9	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 25	KV
ESD per IEC 61000-4-2 (Contact)		± 25	
Storage Temperature Range	T _{STJ}	-55 to +150	°C
Operating Temperature Range	T _J	-55 to +125	°C

Electrical Characteristics

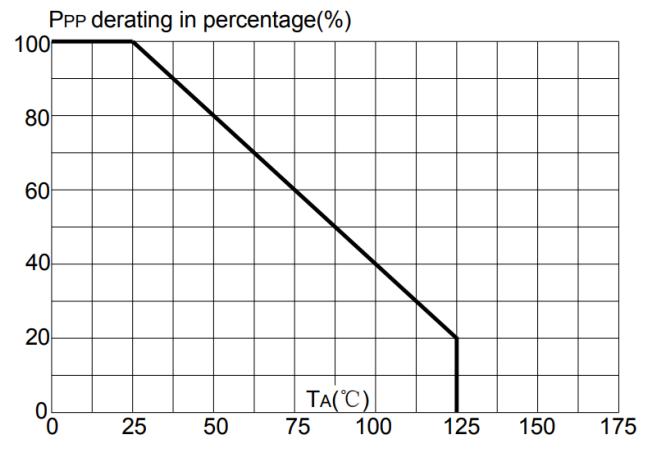
TA=25°C unless otherwise specified

Symbol	Parameter	Conditions	Min	Typ	Max	Units
V _{RWM}	Reverse Working Peak Voltage	-			12	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA	14.1		16.5	V
I _R	Reverse Current	V _{RWM} = 12V			1	μA
V _F	Forward Voltage	I _F = 10mA			0.9	V
V _C	Clamping Voltage	I _{PP} = 9A, t _P = 8/20 μs			24	V
C _D	Diode Capacitance	V _R = 0V, f = 1MHz		45		pF

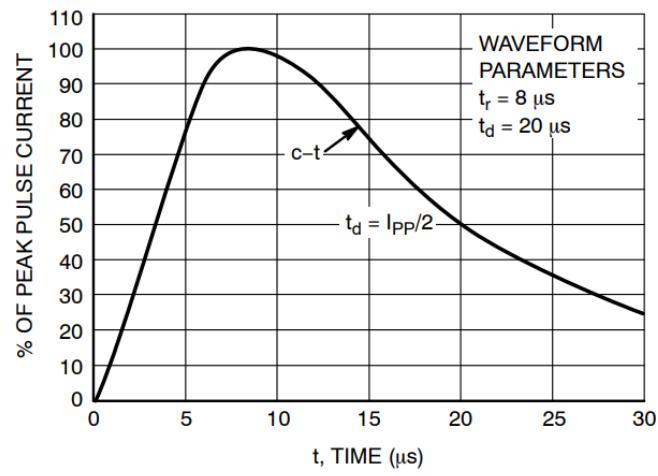
Characteristic Curves



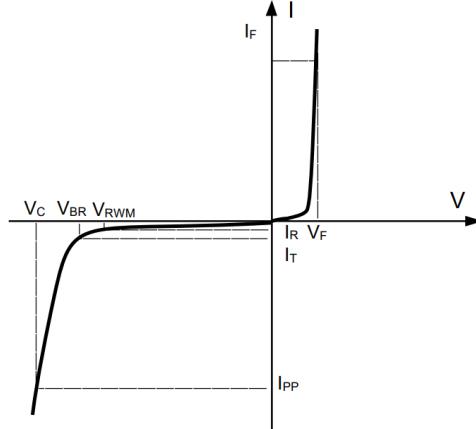
IEC61000-4-2 Pulse Waveform



Power Derating Curve

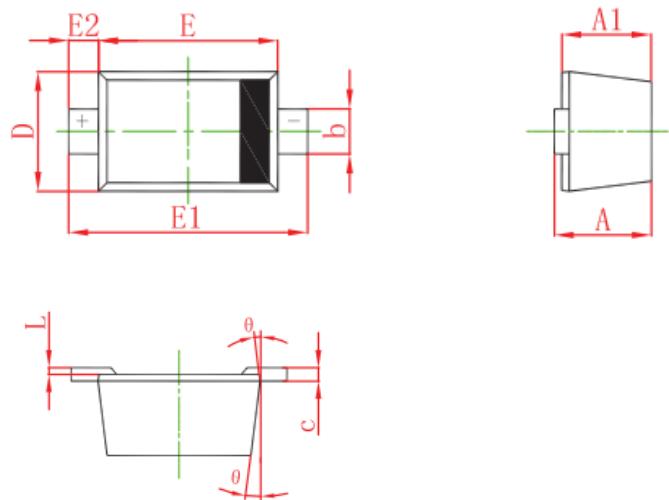


8/20μs Pulse Waveform



V-I Characteristics for Unidirectional Diode

SOD523 Package Outline & Dimensions



Symbol	Dimensions in mm	
	min	max
A	0.510	0.770
A1	0.500	0.700
b	0.250	0.350
c	0.080	0.150
D	0.750	0.850
E	1.100	1.300
E1	1.500	1.700
E2	0.200 REF	
L	0.010	0.070
θ	7° REF	

Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.