ESD05D5

RoHS COMPLIANT

HALOGEN FREE

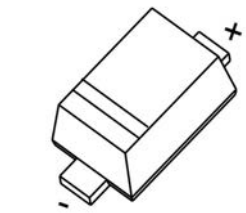
SOD-523 Plastic-Encapsulate Diodes

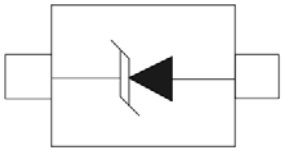
Uni-direction ESD Protection Diode

FEATURES

- ✧ Small body outline dimensions：
  0.063″ x 0.032″ (1.6x0.8mm)
- ✧ Protects one uni-directional I/O line
- ✧ Low clamping voltage
- ✧ Working voltages: 5V
- ✧ Low leakage current
- ✧ RoHS compliant

SOD-523





PIN Configuration

MAIN APPLICATIONS

- ✧ Cell phone handsets and accessories
- ✧ Microprocessor based equipment
- ✧ Personal digital assistants (PDA's)
- ✧ Notebooks, desktops, and servers
- ✧ Portable instrumentation
- ✧ Peripherals
- ✧ Digital cameras

PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 10A (8/20μs)

MECHANICAL CHARACTERISTICS

- ✧ SOD-523 package
- ✧ Molding compound flammability rating : UL 94V-0
- ✧ Weight 0.5 milligrams (approximate)
- ✧ Quantity per reel : 5,000pcs
- ✧ Lead finish : lead free

MARKING CODE

MAXIMUM RATINGS (T_a=25℃unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20μs waveform	P_{PP}	150	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 30 +/- 30	kV
Lead soldering temperature	T_L	260 (10 sec.)	℃
Operating junction temperature range	T_J	-55 to +125	℃
Storage temperature range	T_{STG}	-55 to +150	℃

ELECTRICAL CHARACTERISTICS (T_A=25℃)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V_{RWM}				5.0	V
Reverse breakdown voltage	V_{BR}	I_T=1mA Pin2 to 1	6.0		8.0	V
Reverse leakage current	I_R	V_{RWM}=5V		0.01	0.1	μA
Forward voltage	V_F	I_F=15mA		0.8	1.1	V
Peak pulse current	I_{PP}	t_P=8/20μs			10	A
Clamping voltage	V_C	I_{PP}=1A, t_P=8/20μs		8.5	10	V
		I_{PP}=10A, t_P=8/20μs		12	15	
Junction capacitance	C_J	V_{RWM}=0V, f=1MHz		75	100	pF

Typical Characteristics

FIG.1:V- I curve characteristics (Uni-directional)

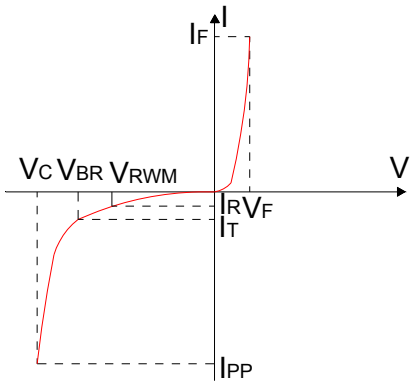


FIG.2: Pulse waveform (8/20μs)

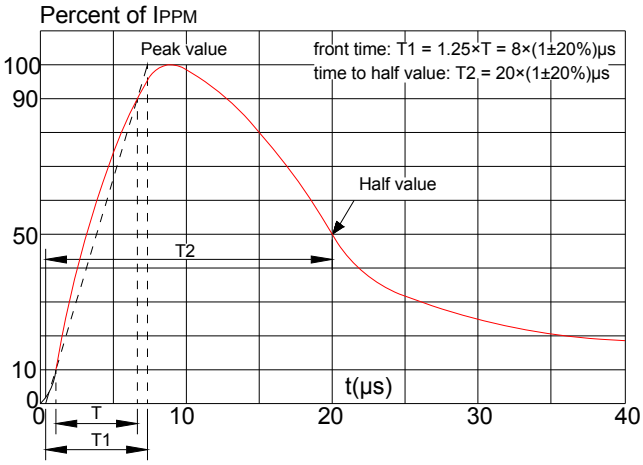


FIG.3: Pulse derating curve

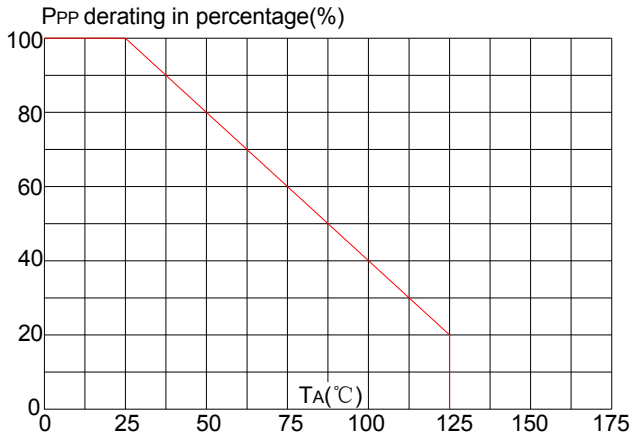
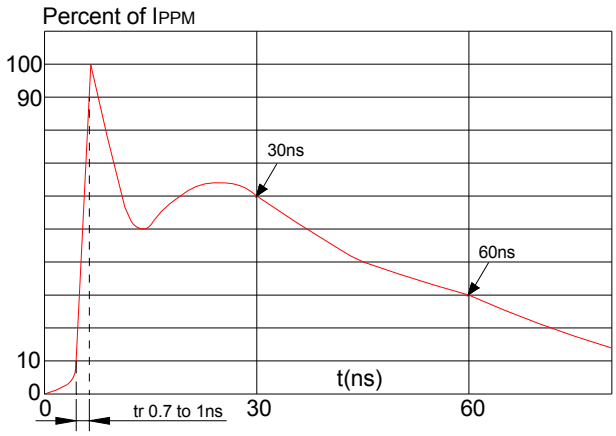
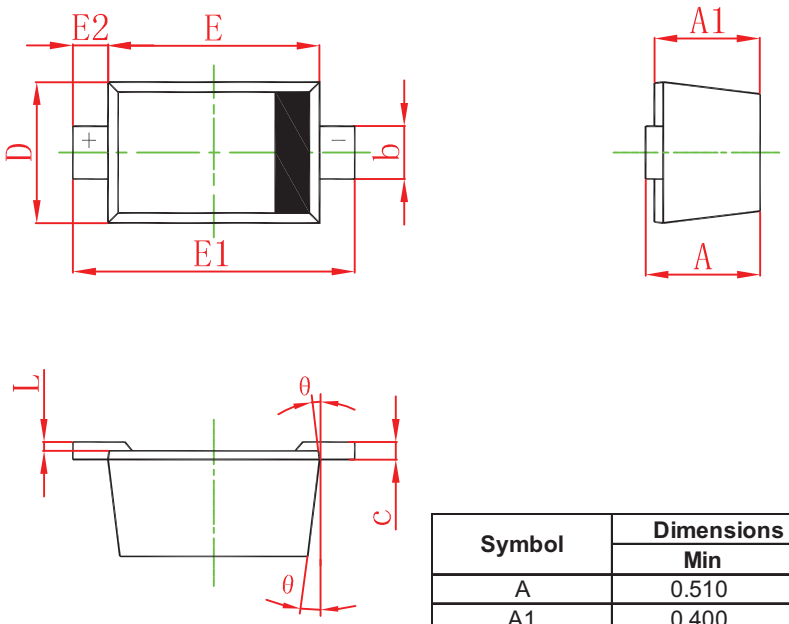


FIG.4: ESD clamping (30kV contact)

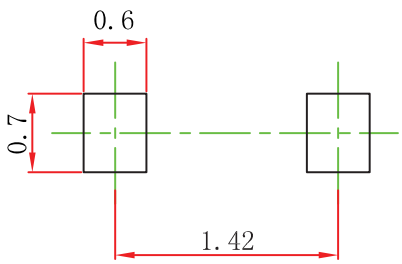


SOD-523 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.510	0.770	0.020	0.031
A1	0.400	0.700	0.015	0.028
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	0.750	0.850	0.030	0.033
E	1.100	1.300	0.043	0.051
E1	1.500	1.700	0.059	0.067
E2	0.200 REF		0.008 REF	
L	0.010	0.070	0.001	0.003
θ	7° REF		7° REF	

SOD-523 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.