



Micro Commercial Components



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Features

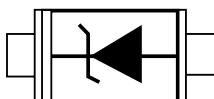
- Halogen free available upon request by adding suffix "-HF"
- For sensitive ESD protection
- Excellent clamping capability
- Low leakage
- ESD rating of class 3(>16KV)per Human Body Mode
- Fast response ,response time less than 1ns.
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Maximum Ratings

- Operating Junction & Storage Temperature: -55°C to +150°C

Parameter	Symbol	Limits	unit
IEC61000-4-2(ESD) Air Contact		± 15 ± 8	KV
ESD Voltage per human body mode		16	KV
Peak Pulse Power(8/20us)	Ppp	100	w

Pin Configuration-Top View

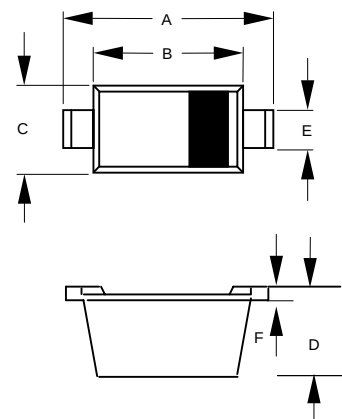


Marking: E1

ESD3V3D9

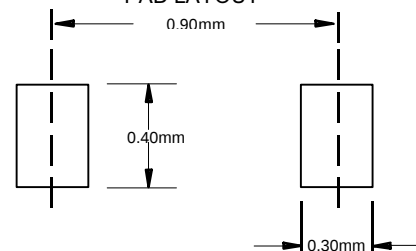
ESD Protection Device

SOD-923



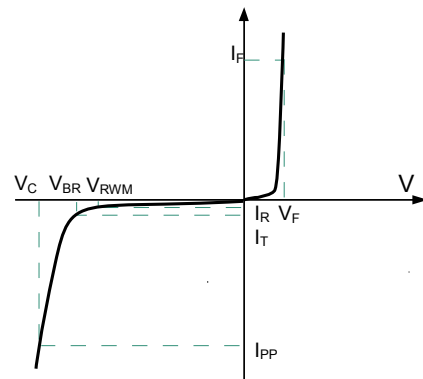
DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.037	.041	0.95	1.05	
B	.030	.033	0.75	0.85	
C	.022	.026	0.55	0.65	
D	.014	.017	0.36	0.43	
E	.006	.010	0.15	0.25	
F	.003	.007	0.07	0.17	

SUGGESTED SOLDER PAD LAYOUT



ELECTRICAL CHARACTERISTICS (T_A = 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
C	Capacitance @ V _R =0 and f =1MHz



Electrical characteristics per line@25 °C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Working Voltage	V _{RWM}				3.3	V
Breakdown Voltage	V _{BR}	I _T =1mA	5			V
Reverse Leakage Current	I _R	V _{RWM} =3.3V		0.005	1	μA
Forward Voltage	V _F	I _F =10mA		0.8		V
Clamping Voltage	V _C	I _{PP} =1A t _p = 8/20μS			5.8	V
Clamping Voltage	V _C	I _{PP} =5A t _p = 8/20μS			8.8	V
Junction Capacitance	C _j	V _R =0V f = 1MHz		35	50	pF
Junction Capacitance	C _j	V _R =2.5V f = 1MHz		20	27	pF

Typical Characteristics

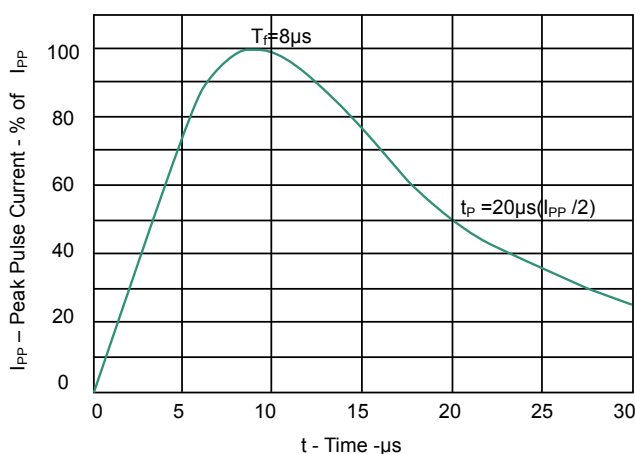


Fig 1.Pulse Waveform

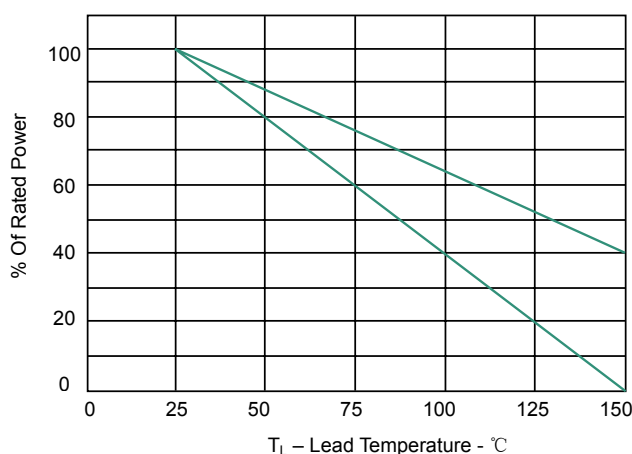


Fig 2.Power Derating Curve



TM

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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 8Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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