



**THE DATASHEET OF
ESD3V3D9-TP**





Micro Commercial Components



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ESD3V3D9

ESD Protection Device

Features

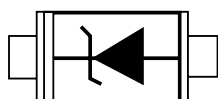
- Halogen free available upon request by adding suffix "-HF"
- For sensitive ESD protection
- Excellent clamping capability
- Low leakage
- ESD rating of class 3(>16KV)per Human Body Mode
- Fast response ,response time less than 1ns.
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant.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

Maximum Ratings

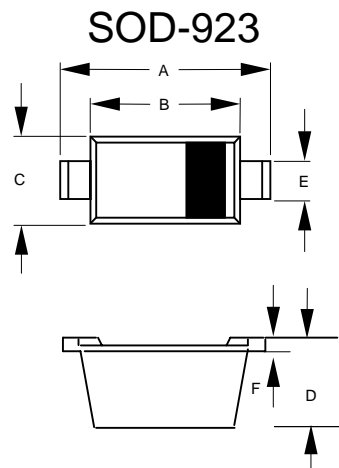
- Operating Junction & Storage Temperature: -55°C to +150°C

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

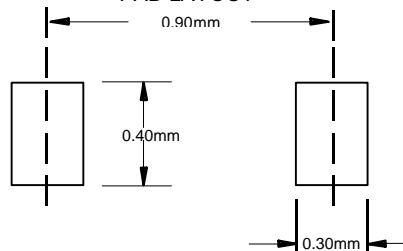


Marking: E1



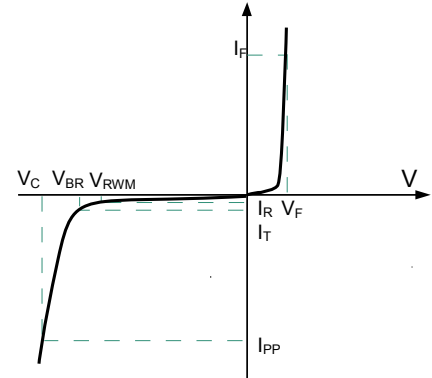
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.037	.041	0.95	1.05	
B	.030	.033	0.75	0.85	
C	.022	.026	0.55	0.65	
D	.014	.017	0.36	0.43	
E	.006	.010	0.15	0.25	
F	.003	.007	0.07	0.17	

SUGGESTED SOLDER PAD LAYOUT



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ 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 $f=1\text{MHz}$



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}	$I_T=1\text{mA}$	5			V
Reverse Leakage Current	I_R	$V_{RWM}=3.3\text{V}$		0.005	1	μA
Forward Voltage	V_F	$I_F=10\text{mA}$		0.8		V
Clamping Voltage	V_C	$I_{PP}=1\text{A}$ $t_p = 8/20\mu\text{S}$			5.8	V
Clamping Voltage	V_C	$I_{PP}=5\text{A}$ $t_p = 8/20\mu\text{S}$			8.8	V
Junction Capacitance	C_j	$V_R=0\text{V}$ $f = 1\text{MHz}$		35	50	pF
Junction Capacitance	C_j	$V_R=2.5\text{V}$ $f = 1\text{MHz}$		20	27	pF

Typical Characteristics

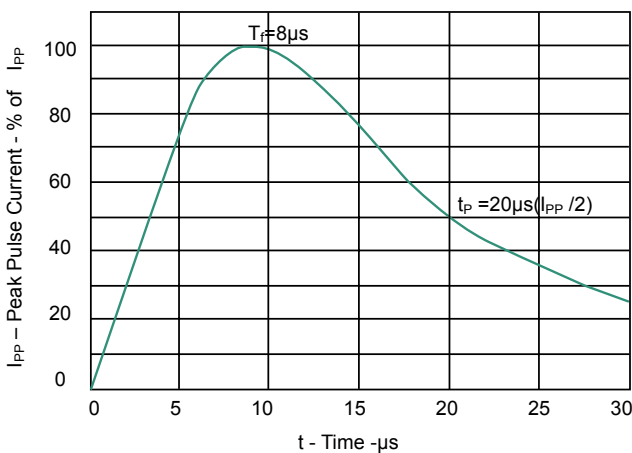


Fig 1.Pulse Waveform

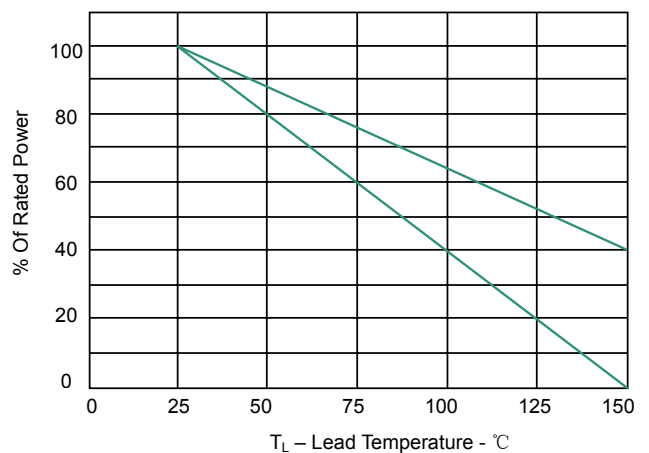


Fig 2.Power Derating Curve



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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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