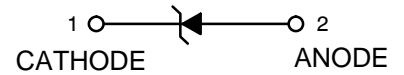




ESD9D5.0 CS ESD PROTECTION DIODE

Discription

The ESD9D5.0CS is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, digital cameras and many other portable applications where board space is at a premium.



SOD-923

Applications

- I Cellular phones audio
- I Digital cameras
- I Portable applications
- I Mobile telephone

Features

- I Small Body Outline Dimensions:
0.039 " x 0.024 " (1.0 mm x 0.60 mm)
- I Low Body Height: 0.017 " (0.43 mm) Max
- I Stand-off Voltage: 5 V
- I Low Leakage
- I Response Time is Typically < 1 ns
- I ESD Rating of Class 3 per Human Body Model
- I IEC61000-4-2 Level 4 ESD Protection
- I These are Pb-Free Devices
- I We declare that the material of product compliance with RoHS requirements and Halogen Free.

Marking :G

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Air discharge Contact discharge		±15 ±8	kV kV
Total Power Dissipation on FR-5 Board (Note 1) @ T _A =25°C	PD	150	mW
Junction and Storage Temperature Range	T _J ,T _{STG}	-55 to 150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	TL	260	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Rating are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

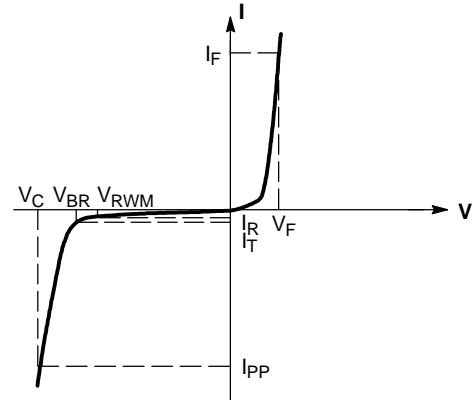
1. FR-5 = 1.0*0.75*0.62 in.



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
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{pk}	Peak Power Dissipation
C	Capacitance @ $V_R = 0$ and $f = 1.0$ MHz



ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted, $V_F=0.9\text{V}$ Max. @ $I_F=10\text{Ma}$ for all types)

Device	V_{RWM} (V)	I_R (μA) @ V_{RWM}	V_{BR} (V) @ I_T (Note 2)	I_T (mA)	I_{PP} (A) (Note 3)	V_C (V) @ Max I_{PP} (Note 3)	P_{PK} (W) (8*20 μs)	C (pF)
	Max	Max	Min		Max	Max	Typ	Typ
ESD9D3.3 CS	3.3	2.5	5.0	1.0	9.8	10.4	102	80
ESD9D5.0 CS	5.0	1.0	6.2	1.0	8.7	12.3	107	30
ESD9D12 CS	12	1.0	13.5	1.0	5.9	23.7	140	30

Other voltage available upon request.

- V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C
- Surge current waveform per Figure 3.



TYPICAL CHARACTERISTICS

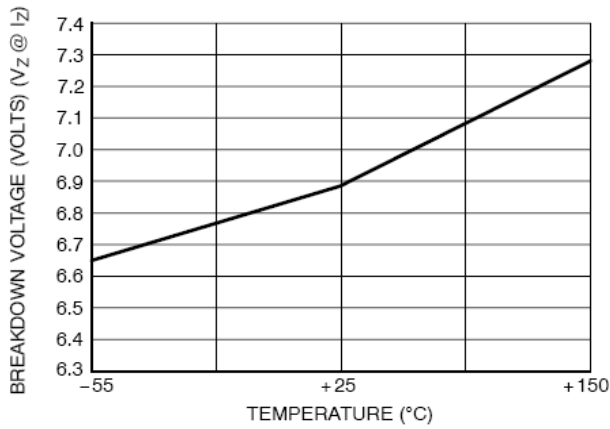


Figure 1. Typical Breakdown Voltage versus Temperature

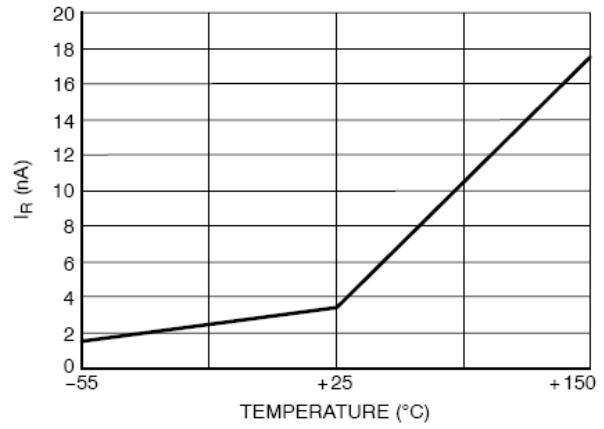


Figure 2. Typical Leakage Current versus Temperature

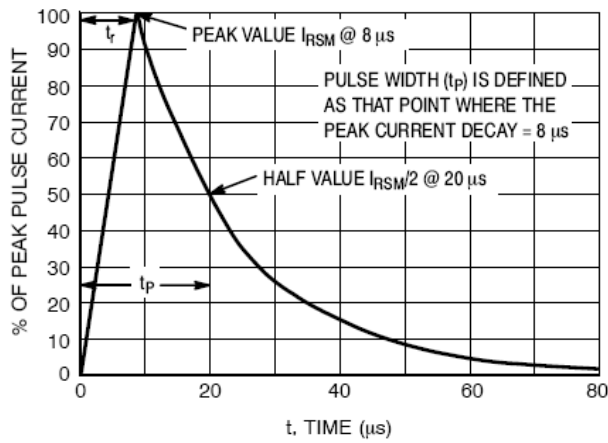


Figure 3. 8*20 μs Pulse Waveform

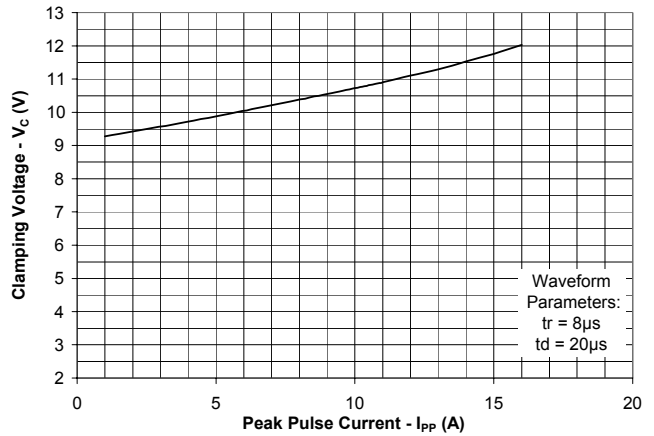


Figure 4. Normalized Junction Capacitance Voltage vs. Reverse Voltage

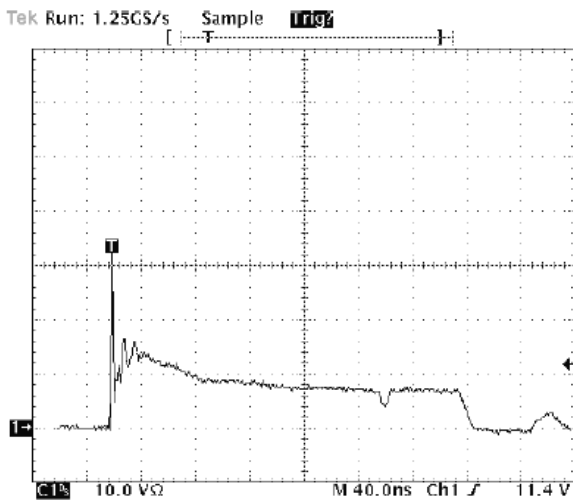


Figure 5. Positive 8kV contact per IEC 61000-4-2-LESD9D5.0T5G

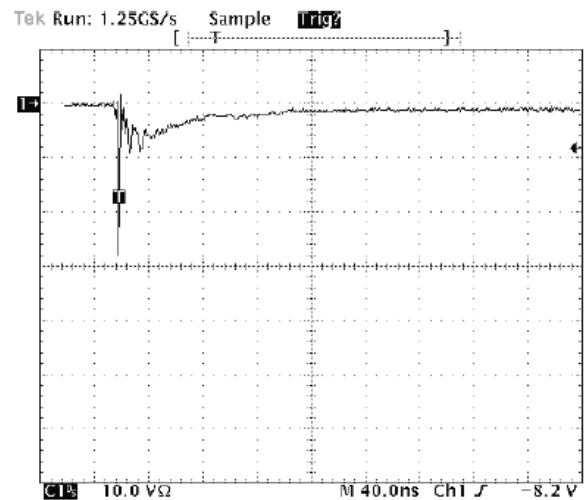
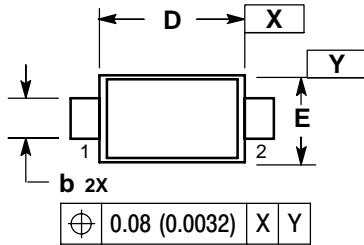
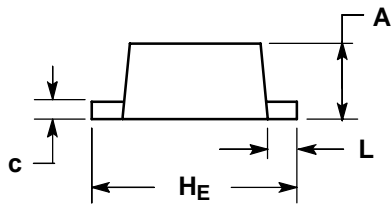


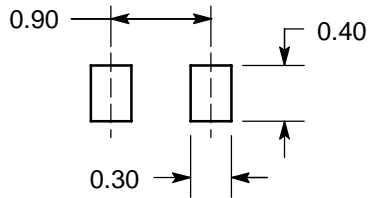
Figure 6. Negative 8kV contact per IEC 61000-4-2-LESD9D5.0T5G



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.35	0.40	0.45	0.013	0.016	0.020
b	0.20	0.25	0.30	0.008	0.010	0.012
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
H _E	0.95	1.00	1.05	0.037	0.039	0.041
L	0.07	0.10	0.15	0.003	0.004	0.006



SOLDERING FOOTPRINT



DIMENSIONS: MILLIMETERS