

ESDFBP05VL

ESD Protection Diode With Ultra-Low Capacitance

Description

The ESDFBP05V is designed to protect voltage sensitive components that require ultra-low capacitance from ESD and transient voltage events. Excellent clamping capability, low capacitance, 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 low capacitance, it is suited for use in high frequency designs such as USB high speed and antenna line applications.

Features

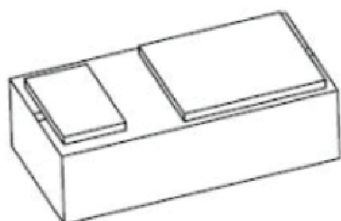
- Ultra Low Capacitance 0.5 pF
- Low Clamping Voltage
- Small Body Outline Dimensions:
- Stand-off Voltage: 5 V
- Low Leakage
- Response Time is Typically < 1.0 ns
- IEC61000-4-2 Level 4 ESD Protection
- This is a Pb-Free Device
- RoHS Compliant Package

Complies with the following standards

- IEC61000-4-2 Level 4
- 15 kV (air discharge)
- 8 kV(contact discharge)
- MIL STD 883E - Method 3015-7 Class 3
- 25 kV HBM (Human Body Model)

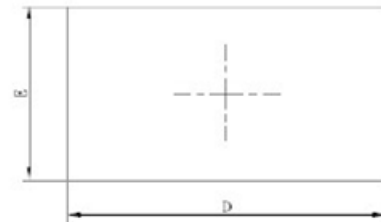
Packing & Order Information

3,000/Reel



RoHS
COMPLIANT

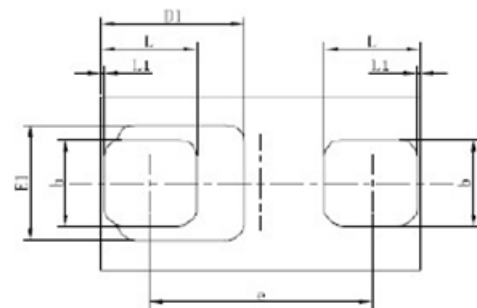
WBFBP-02L



TOP VIEW



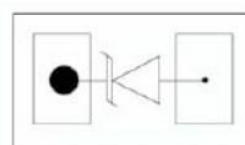
SIDE VIEW



BOTTOM VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.045	0.550	0.018	0.022
A1	0.010	0.070	0.000	0.003
D	0.095	1.050	0.037	0.041
E	0.550	0.650	0.022	0.260
D1	0.45REF.		0.018REF.	
E1	0.400REF.		0.016REF.	
b	0.275	0.325	0.011	0.013
e	0.675	0.725	0.027	0.029
L	0.275	0.325	0.011	0.013
L1	0.010REF.		0.000REF.	

Graphic symbol



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MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

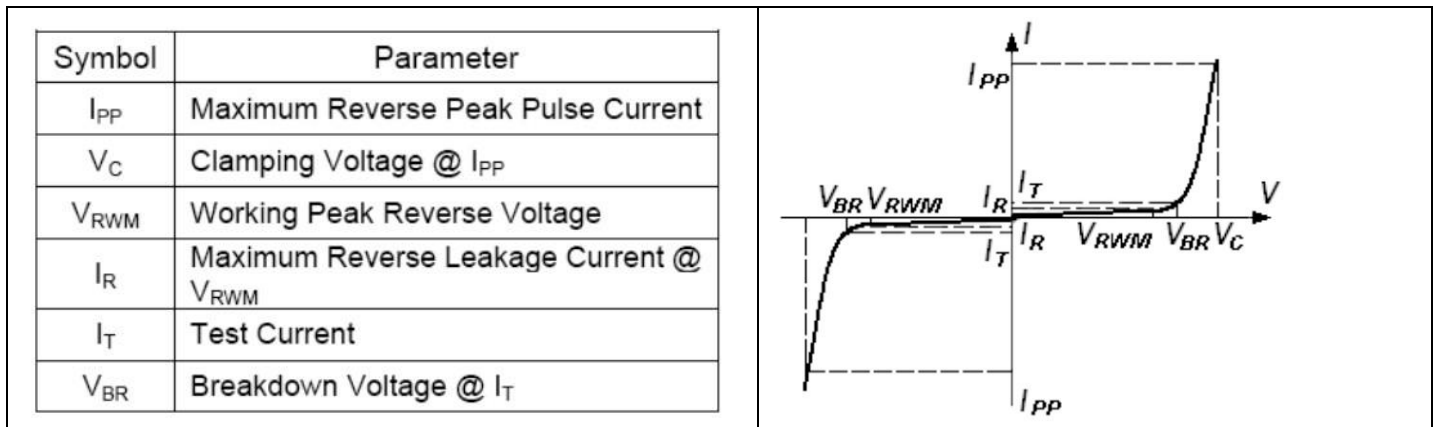
Maximum ratings (limiting value)

Symbol	Parameter	Value	Unit
	IEC 61000-4-2 (ESD) Contact	8	kV
TJ	ESD Voltage Per Human Body Model 25 KV	25	kV
	Per Machine Model	400	V
PD	Peak Pulse Power ($t_p = 8/20 \mu s$) @ $T_A = 25^\circ C$	100	W
TJ, TSTG	Junction and Storage Temperature Range	-55 to +150	$^\circ C$
TL	Lead Solder Temperature – Maximum (10 Second Duration)	260	$^\circ C$

Electrical Characteristics ($T_A = 25^\circ C$ unless otherwise noted, $V_F = 0.9V$ Max. @ $I_F = 10mA$ for all types)

Part Numbers	V_{BR} min	I_T	V_{RWM}	V_F Max	I_F	I_R	C_j TYP
	V	mA	V	V	mA	μA	PF
ESDFBP05VL	6	1	3.3	1	10	1	0.5

1. Capacitance is measured at $f = 1MHz$, $V_R = 0V$, $T_A = 25^\circ C$.
2. V_{BR} is measured with a pulse test current I_T at an ambient temperature of $25^\circ C$.



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Typical Device Characteristics

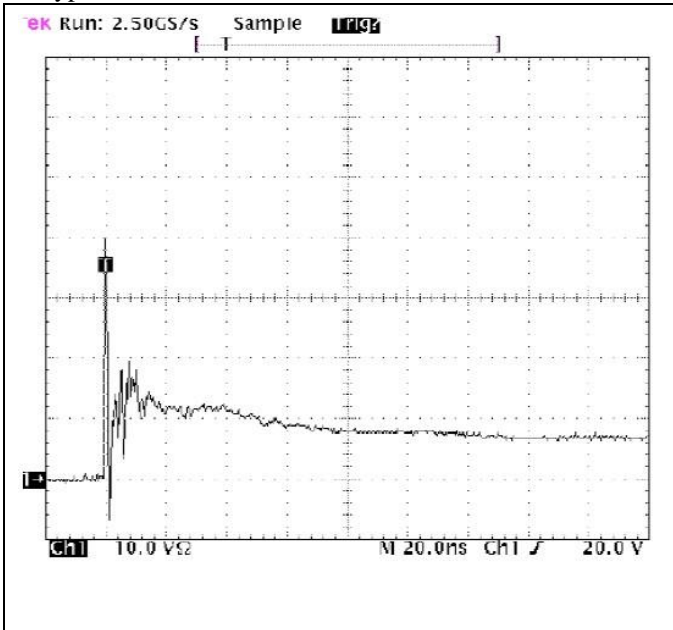


FIG.1-POSITIVE 8KV CONTACT PER IEC6100-4-2

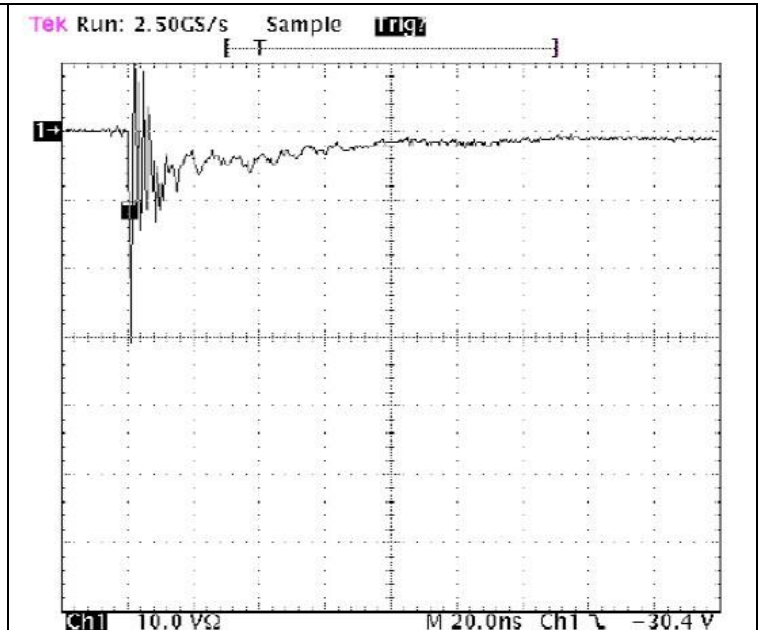


FIG.2-NEGATIVE 8KV CONTACT PER IEC6100-4-2-SESD5L5V 61000-4-2

IEC 61000-4-2 Spec.

Level	Test Voltage (kV)	First Peak Current (A)	Current at 30 ns (A)	Current at 60 ns (A)
1	2	7.5	4	2
2	4	15	8	4
3	6	22.5	12	6
4	8	30	16	8

IEC61000-4-2 Waveform

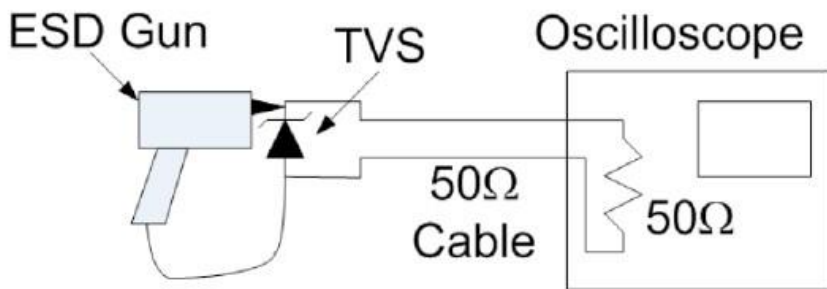
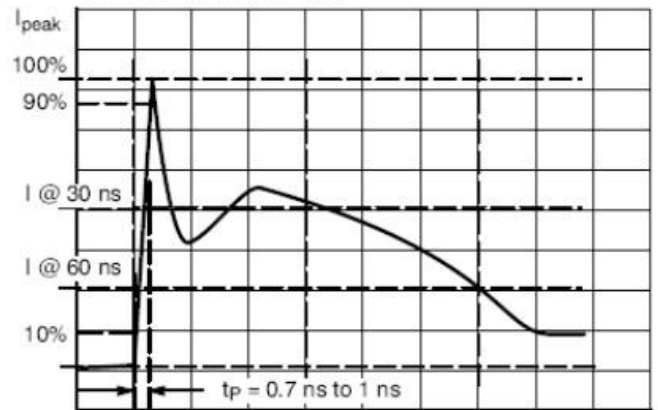


FIG.4-DIAGRAM OF ESD TEST SETUP

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