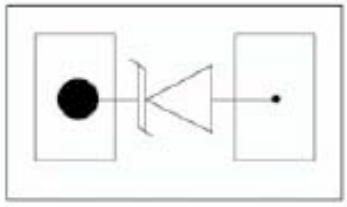
ESD Protection Diode With Ultra-Low Capacitance

ESDFBP05VL

The ESDFBP05V is designed to protect voltage sensitive components that require ultra-low capacitance from ESD and transient voltage events. Excellent clamping capabilitylow 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.



WBFBP-02C

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

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)

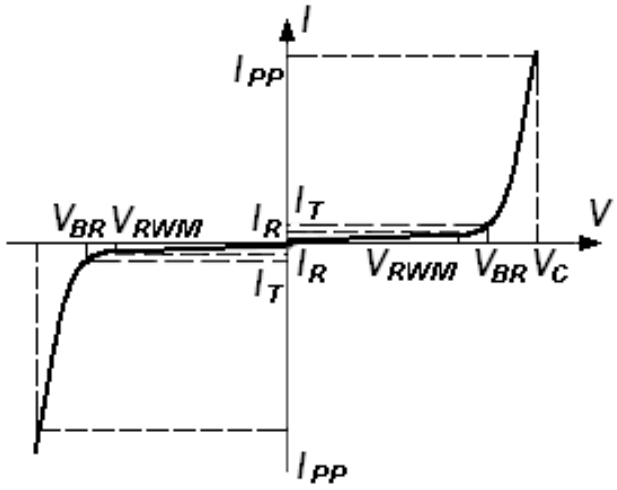
Maximum ratings (limiting value)			
Parameter	**Symbol**	**Value**	**Unit**
IEC 61000-4-2 (ESD) Contact		8	KV
ESD Voltage Per Human Body Model	TJ	25	KV
Per Machine Model		400.0	V
Peak Pulse Power (tp = 8/20μs) @ TA=25℃	PD	100	W
Junction and Storage Temperature Range	TJ,TSTG	-55 to 150	℃
Lead Solder Temperature – Maximum (10 Second Duration)	TL	260	℃

Electrical Characteristics

Part Numbers	VBR min	IT	VRWM	VF Max	IF	IR	Cj TYP
	V	mA	V	V	mA	uA	PF
ESDFBP05VL	6.0	1	3.3	1.0	10	1	0.5

1. Capacitance is measured at f=1MHz, VR=0V,TA=25℃.
2. VBR is measured with a pulse test current IT at an ambient temperature of 25°C.

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}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T



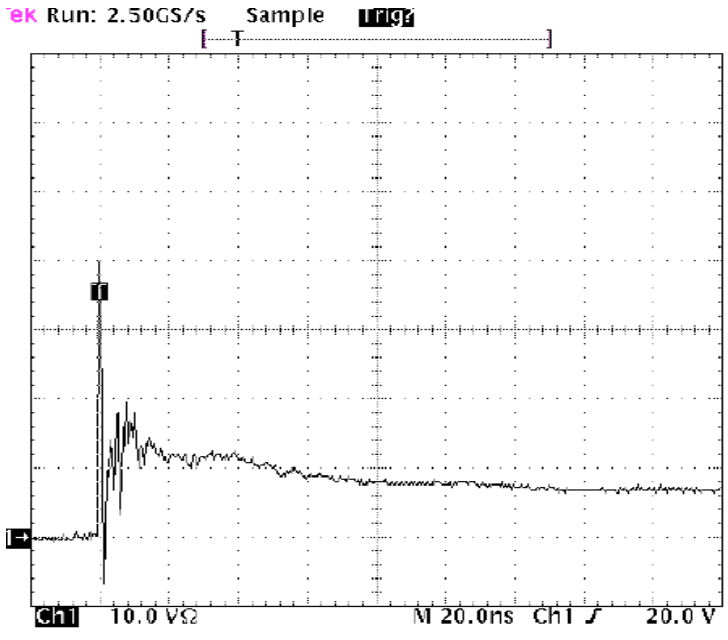


Fig 1. Positive 8kV contact per IEC61000-4-2

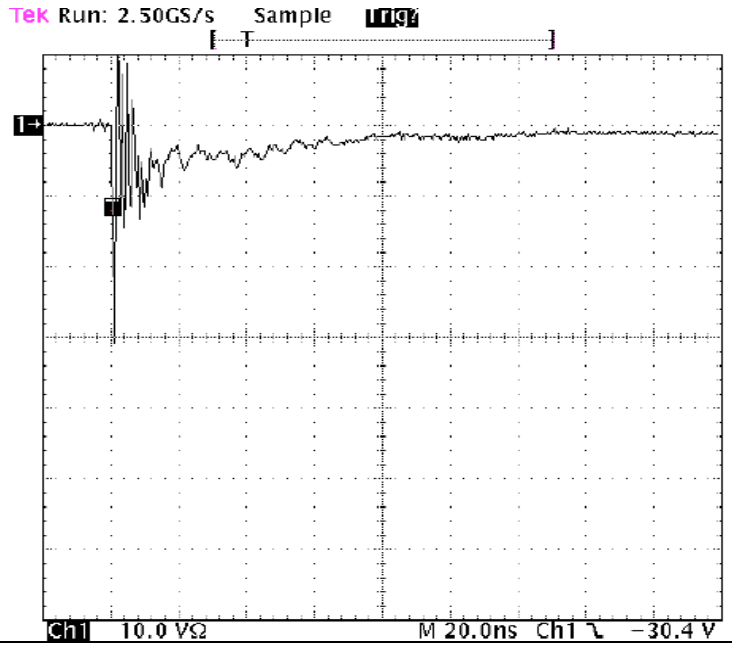
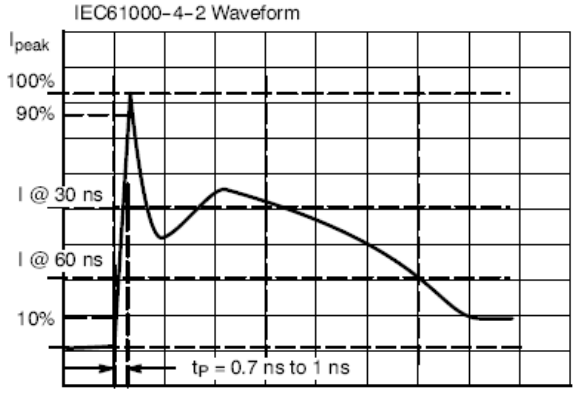


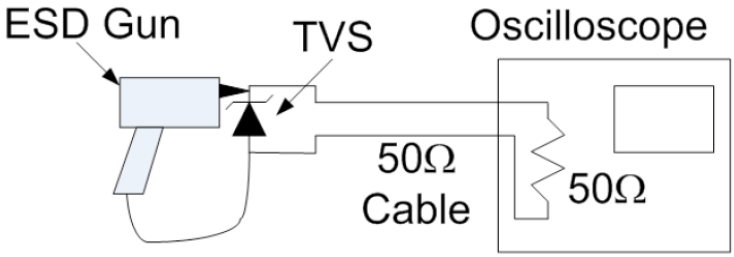
Fig 2. Negative 8kV contact per IEC 61000-4-2-SESD5L5V 61000-4-2

Figure 4. Diagram of ESD Test Setup

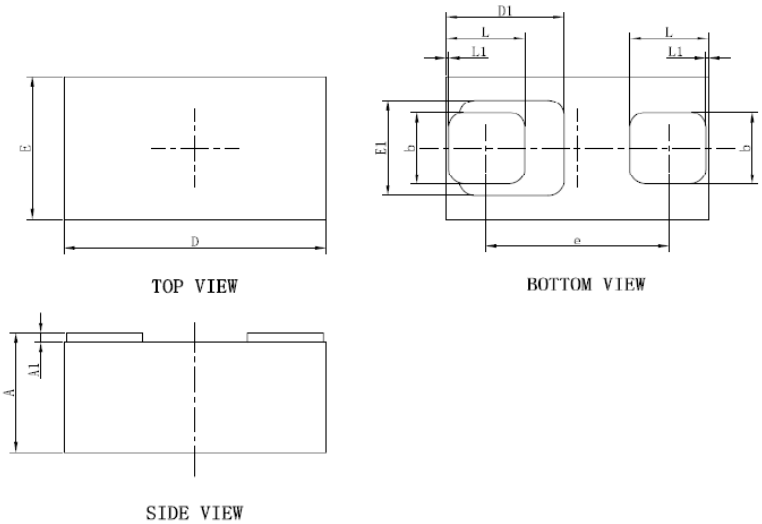
IEC 61000-4-2 Spec.

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





WBFBP-02C package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.070	0.000	0.003
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
D1	0.450REF.		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.	