

**SESDFBPxxC Series**  
**Single Line ESD Protection Diode**

Revision:B

**General Description**

The SESDFBPxxC series are designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers, and PDA's. They feature large cross-sectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protection, such as fast response time, lower operating voltage, lower clamping voltage and no device degradation when compared to MLVs.

**Applications**

- Cellular phones handsets and Accessories
- PDA's
- MP3 players
- Digital cameras
- Portable applications
- Mobile telephone

**Features**

- Equivalent to 0402 package
- 120W peak pulse power
- Small package for use in portable electronics
- Low Leakage current
- These are Pb-Free Devices

**Complies with the following standards**

**IEC61000-4-2**

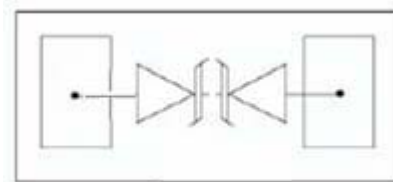
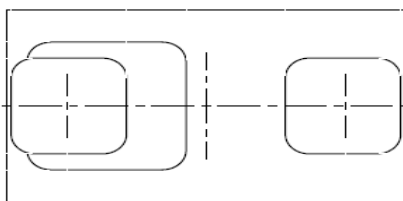
**Level 4 15 kV (air discharge)**

**8 kV (contact discharge)**

**MIL STD 883E - Method 3015-7 Class 3**

**25 kV HBM (Human Body Model)**

**Functional diagram**



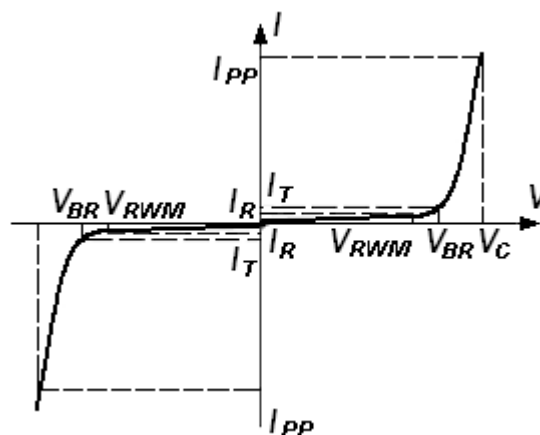
**WBFBP-02C**

**Absolute Ratings (T<sub>amb</sub>=25°C )**

Symbol	Parameter	Value	Units
	IEC 61000-4-2 (ESD) Contact	8	kV
P <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20μs)	120	W
I <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20μs)	12	A
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C
T <sub>stg</sub>	Storage Temperature Range	-55 to +155	°C
T <sub>j</sub>	Maximum junction temperature	-55 to +155	°C

**Electrical Parameter**

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 @ $I_T$



**Electrical Characteristics** Ratings at 25°C ambient temperature unless otherwise specified. VF = 0.9V at IF = 10mA

Part Numbers	$V_{BR}$			$I_T$	$V_{RWM}$	$I_R$	$V_F$	$I_F$	$C$
	Min.	Typ.	Max.				Max.	Typ.	Typ. 0v bias
	V	V	V				V	mA	pF
SESDFBP3V3C	5.1	6.0	6.8	1	3.3	1	-	-	20
SESDFBP05C	6.1	6.6	7.2	1	5.0	1	-	-	15

\*Surge current waveform per Figure 1.

- $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of 25°C.

**Typical Characteristics**

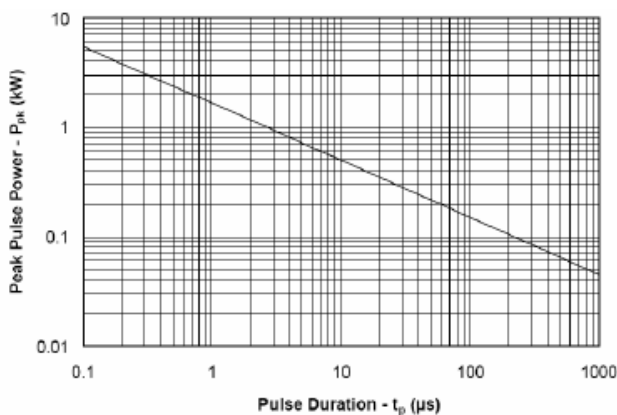


Figure 1. Non-Repetitive Peak Pulse Power versus Pulse Time

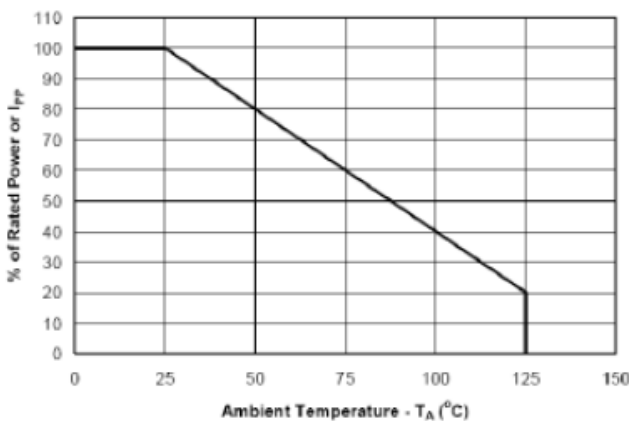
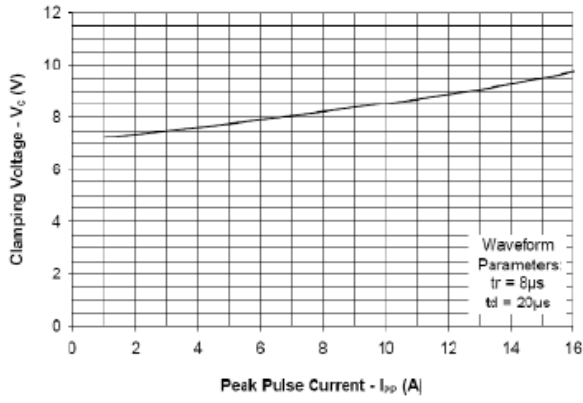
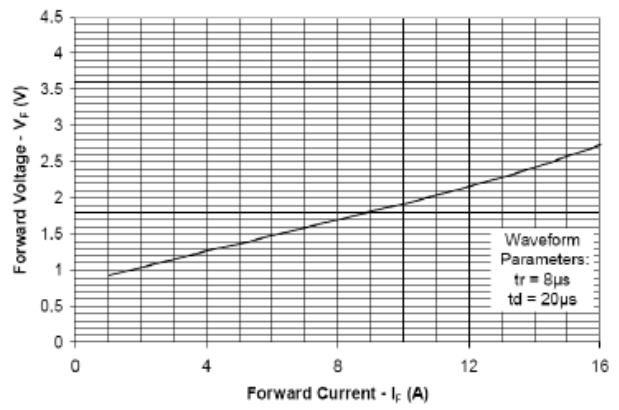


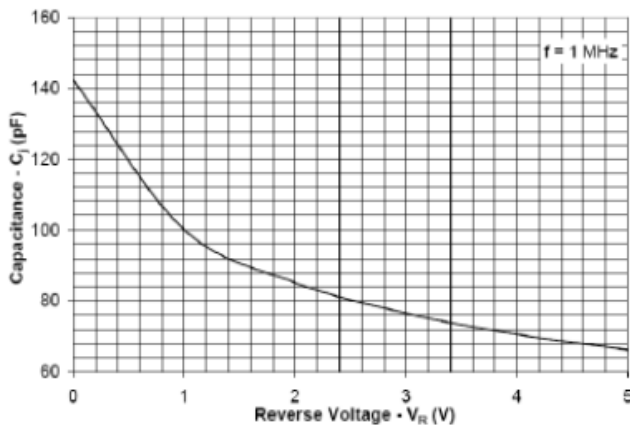
Fig 2. Power Derating Curve



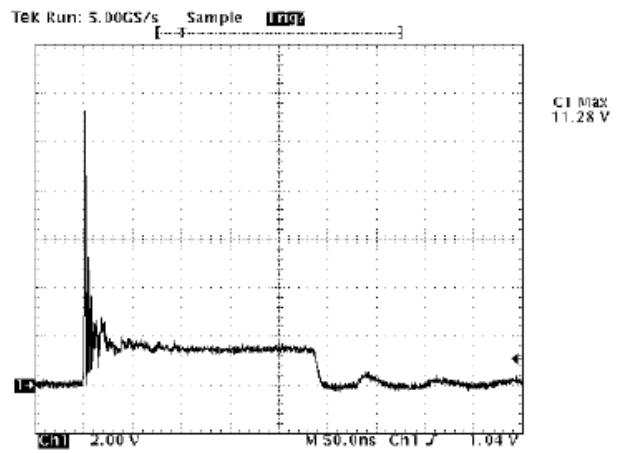
**Figure 3. Clamping Voltage vs. Peak Pulse Current**



**Figure 4. Forward Voltage vs. Forward Current**

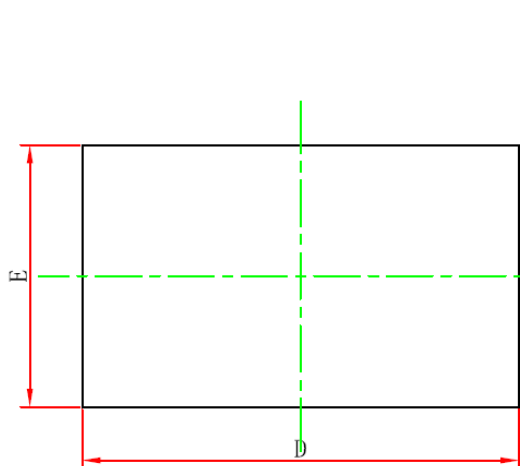


**Figure 5. Junction Capacitance vs. Reverse Voltage**

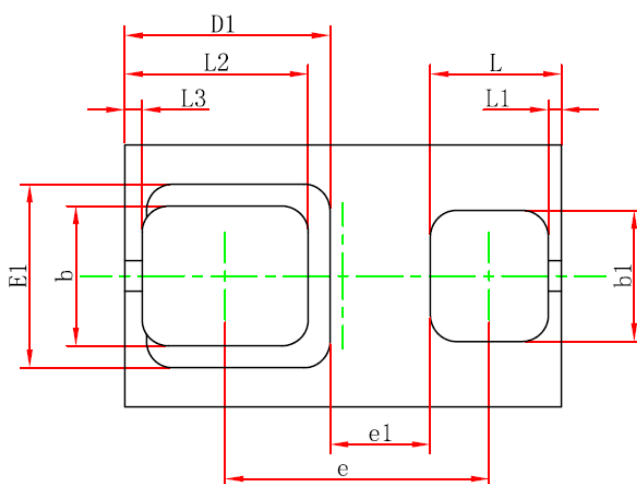


**Figure 6. ESD Clamping (8kV Contact per IEC 61000-4-2)**

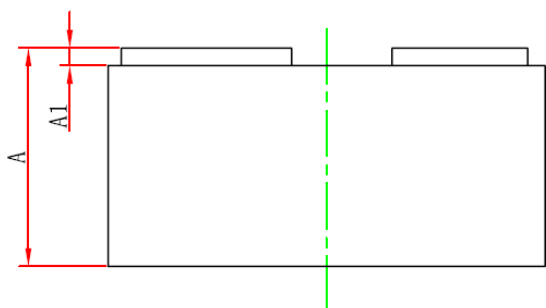
**WBFBP-02C(1.0×0.6×0.5) Package Outline Dimensions**



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.100	0.000	0.004
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
D1	0.470REF.		0.019REF.	
E1	0.420REF.		0.017REF.	
b	0.270	0.370	0.011	0.015
b1	0.250	0.350	0.010	0.014
e	0.555	0.655	0.022	0.026
e1	0.230REF.		0.009REF.	
L	0.250	0.350	0.010	0.014
L1	0.030REF.		0.001REF.	
L2	0.370	0.470	0.015	0.019
L3	0.040REF.		0.002REF.	

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