WEITRON

ESD0501B2C

Surface Mount TVS For ESD Protection Diode

Lead(Pb)-Free

Peak Pulse Power
100 Watts
Reverse WorkingVoltage
3.3-12 Volts



BFBP-02C

Features:

* Stand-off Voltage: 3.3 V−12 V
* Low Leakage
* Response Time is Typically < 1 ns
* ESD Rating of Class 3 (> 16 kV) per Human Body Model
* IEC61000−4−2 Level 4 ESD Protection
* These are Pb−Free Devices

Main Applications:

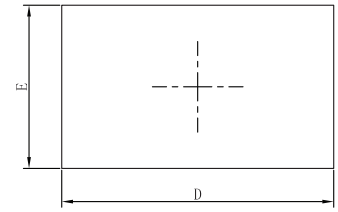
* Cellular Handsets & Accessories
* Personal Digital Assistants (PDAs)
* Notebooks & Handhelds
* Portable Instrumentation
* Digital Cameras
* Peripherals
* MP3 Players

Mechanical Characteristics:

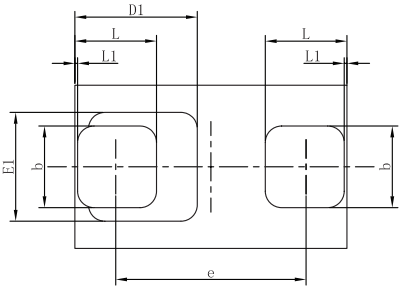
* Molding compound flammability rating: UL 94V-0

BFBP Outline Dimensions

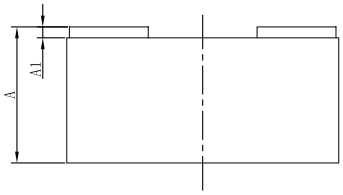
Unit:mm



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Min	Max
A	0.450	0.550
A1	0.010	0.070
D	0.950	1.050
E	0.550	0.650
D1	0.450 Ref.	
E1	0.400 Ref.	
b	0.275	0.325
e	0.675	0.725
L	0.275	0.325
L1	0.010 Ref.	

Maximum Ratings (T_A=25°C unless otherwise noted)

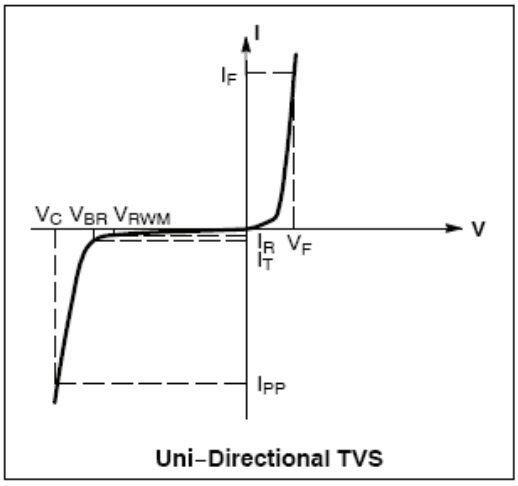
Parameter	Symbol	Limits	Unit
IEC61000−4−2(ESD) Contact		±30	KV
ESD voltage per human body model		16	KV
Per machine model		400	V
Total power dissipation on FR-5 board (Note 1)	P_D	150	mW
Thermal Resistance Junction−to−Ambient	$R_{\theta JA}$	833	℃/W
Lead Solder Temperature − Maximum (10 Second Duration)	T_L	260	℃
Junction and Storage temperature range	T_j, T_{stg}	-55 ~ +150	℃

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings 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 x 0.75 x 0.62 in.

ELECTRICAL CHARACTERISTICS (T_A = 25°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	Max. Capacitance @V_R=0 and f =1MHz



Uni−Directional TVS

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted, V_F = 0.9 V Max. @ I_F= 10mA for all types)

Device*	Device Marking	V_{RWM} (V)	I_R (μA) @ V_{RWM}	V_{BR} (V) @ I_T(Note 2)	I_T	Max I_{PP}(A) (Note 3)	V_C (V) @Max I_{PP} (A) (Note 3)	P_{pk} (W) (8 x 20 μs)	C (pF)
		Max	Max	Min	mA	-	Max	Typ	Typ
ESD3301B2C	A	3.3	2.5	5.0	1.0	9.8	11.4	102	80
ESD0501B2C	B	5.0	1.0	6.2	1.0	8.7	12.3	107	65
ESD1201B2C	C	12	1.0	13.5	1.0	5.9	23.7	140	30

*Other voltages available upon request.

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

3. Surge current waveform per Figure 3.

TYPICAL CHARACTERISTICS

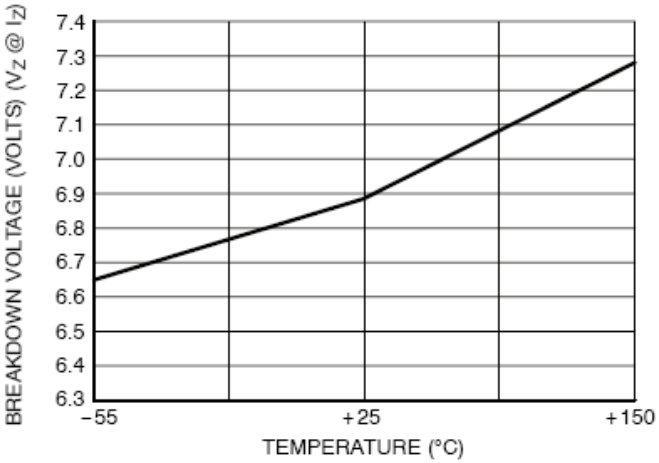


Figure 1. Typical Breakdown Voltage versus Temperature

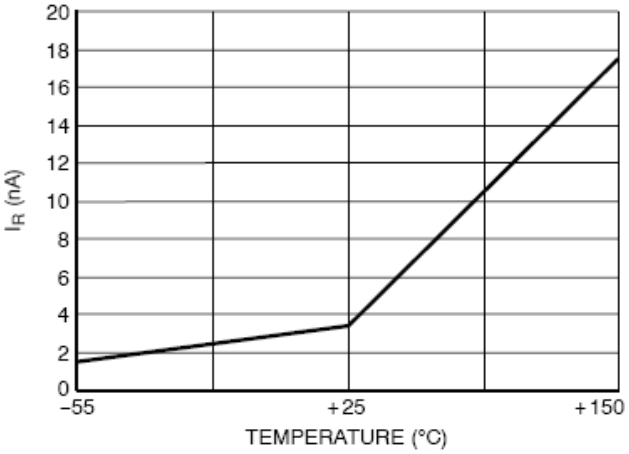


Figure 2. Typical Leakage Current versus Temperature

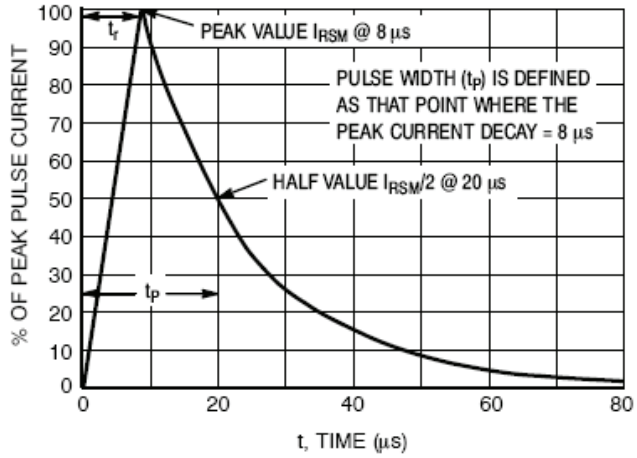


Figure 3. 8 X 20 μs Pulse Waveform