ESD9B5V

Ultra Small Profile, Bidirectional Transient Voltage Suppressor

Http://www.willsemi.com

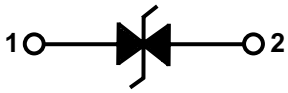
Descriptions

The ESD9B5V is an ESD transient voltage suppression component which provides a very high level of protection for sensitive electronic components that may be subjected to electrostatic discharge (ESD). It is particularly well-suited for cellular phones, portable device, digital cameras, power supplies and many other portable applications because of its small package and low weight.

The ESD9B5V is Bidirectional, Safely dissipate ESD strikes of Level 4, IEC61000-4-2, exceeding the maximum requirement. Using the MILSTD-883 (Method 3015) specification for Human Body Model (HBM) ESD, the device provides protection for contact discharges to greater than +/-15KV.

The ESD9B5V is available in a WBFBP-02C package with peak reverse working voltage of 5 voltages.

Package Diagram



Pin Configuration

EB = Special Device Code

Marking Diagram and explain

Features

- Peak Reverse Working Voltage: 5V
- Peak power up to 100W @ 8 x 20 us Pulse
- Low leakage current
- High ESD protection Level: >+/-15KV per HBM
- IEC61000-4-2 Level 4 ESD Protection
- IEC61000-4-4 Level 4 EFT Protection
- Small Body Outline: 1.0 x 0.6 x 0.5mm

Applications

- Cell phone handsets and accessories
- Personal Digital Assistants (PDAs)
- Notebooks, Desktops, and Serves
- Portable Instrumentation
- Digital Cameras
- MP3/MP4/PMP Players

Order Information

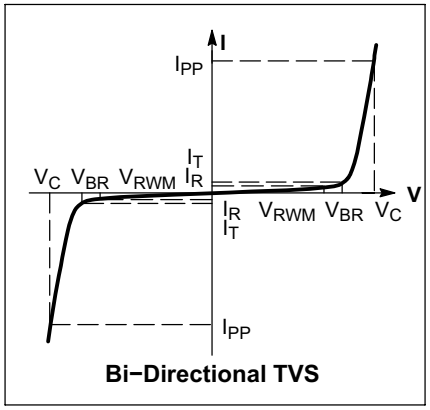
Device	Package	Shipping
ESD9B5V-2/TR	WBFBP-02C	5000/Tape&Reel

Maximum Ratings

Rating	Symbol	Value	Units
Peak pulse power (tp=8/20 us)	Ppk	100	W
Maximum peak pulse current (tp=8/20us)	Ipp	8.7	A
ESD Per IEC61000-4-2 (Air) ESD Per IEC61000-4-2 (Contact)	Vpp	+/-15 +/-8	KV
Maximum lead temperature for soldering during 10s	T_L	260	°C
Storage temperature range	Tstg	-55 to +150	°C
Operating temperature range	Top	-55 to +150	°C

Electronics Parameter

Symbol	Parameter
Vrwm	Peak Reverse Working Voltage
Ir	Reverse Leakage Current @ Vrwm
Vbr	Breakdown Voltage @ It
It	Test Current
Ipp	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @ Ipp
Ppk	Peak Power Dissipation
C	Junction Capacitance
If	Forward Current
Vf	Forward Voltage @ If



Electronics Characteristics

Device	Marking	Vrwm (V)	Ir (uA) @Vrwm	Vbr (V) @ It (Note1)	It (mA)	Ipp (A)	Vc (V) @ Max Ipp	Ppk (W) (8 x 20us) (Note2)	C (pF)
		Max.	Max.	Min.	Typ.	Max.	Max.	Typ.	Typ.
ESD9B5V-2/TR	EB	5.0	0.5	7.5	1	8.7	12.5	100	30

Note 1: Vbr is measured with a pulse current It.

Note 2: Surge current waveform per Figure 1.

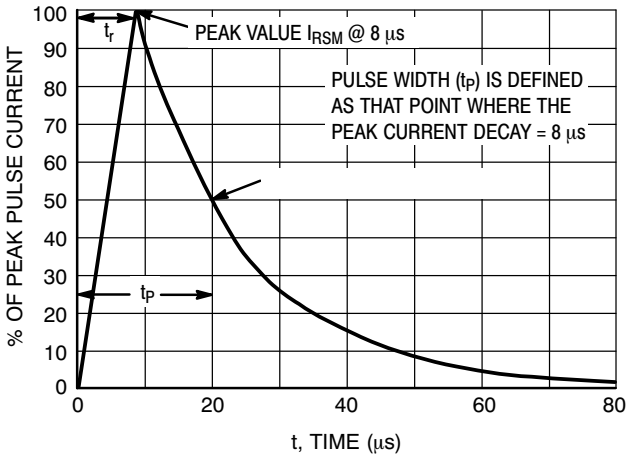


Figure1. 8x20us pulse waveform

Typical Performance Graph

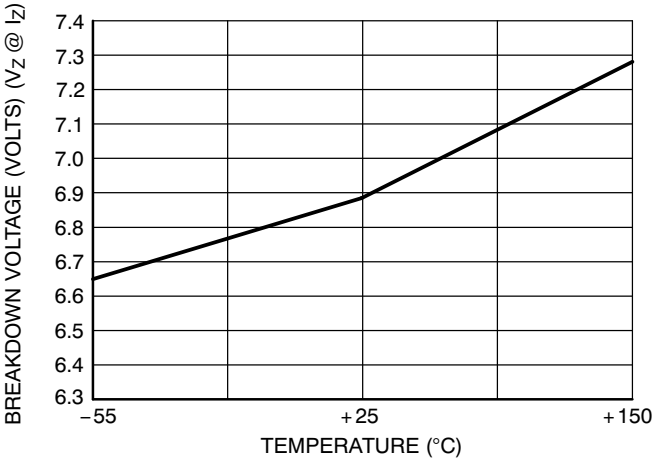


Figure2. Typical breakdown voltage vs temperature

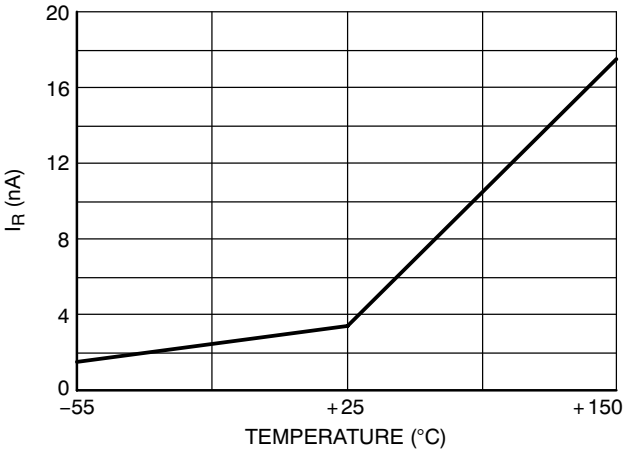
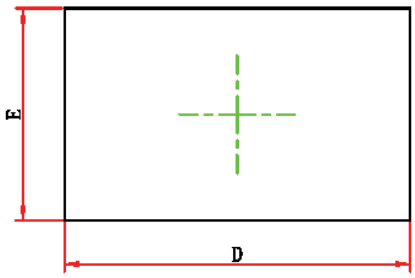
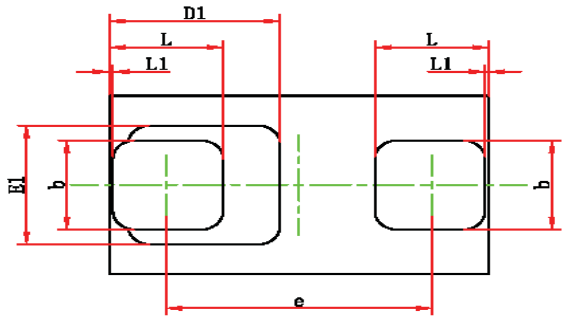


Figure3. Typical leakage current vs temperature

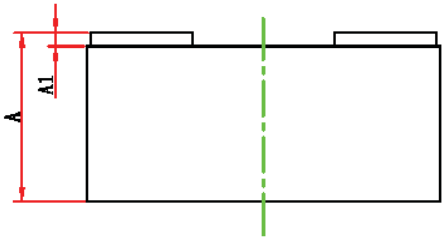
Outline Dimension



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	0.070	0.000	0.003
D	0.95	1.050	0.037	0.011
E	0.550	0.650	0.022	0.026
D1	0.450REF		0.018REF	
E1	0.400REF		0.016REF	
b	0.275	0.325		0.013
e	0.675	0.725		0.029
L	0.275	0.325		0.013
L1	0.010REF		0.000REF	

PCB Layout Guide