

Low Capacitance Quad Array for ESD Protection Description

General Description

This integrated transient voltage suppressor device (TVS) is designed for applications requiring transient overvoltage protection, printers, business machines, communication systems, medical equipment, and other applications. Its integrated design provides very effective and reliable protection for separate lines using only one package. These devices are ideal for situations where board space is at a premium.

Applications

- Serial and Parallel Ports
- Microprocessor Based Equipment
- Notebooks, Desktops, Servers
- Cellular and Portable Equipment

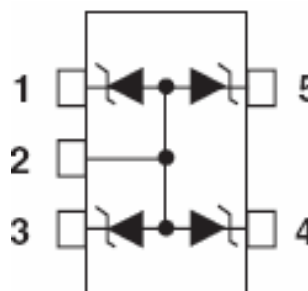
Marking

Type number	Marking code
SEMF3V3LC	VB

Functional diagram



SOT-353



Features

- Four Separate Unidirectional Configurations for Protection
- Low Leakage Current <math>< 1 \mu A @ 3Volts</math>
- Power Dissipation: 380mW
- Small SOT-353 SMT Package
- Low Capacitance
- Complies to USB 1.1 Low Speed & Speed Specifications
- These are Pb-Free Devices
- **Pb-Free package is available**
RoHS product for packing code suffix "G"
Halogen free product for packing code suffix "H"
- Moisture Sensitivity Level 1

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)

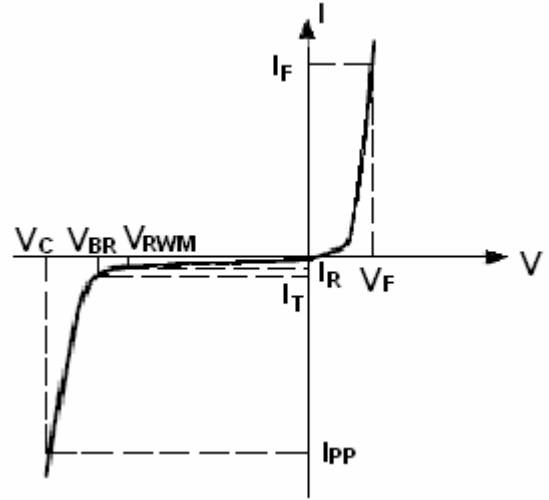
Maximum Ratings ($T_A=25^\circ C$)			
Symbol	Parameter	Value	Units
P_{PK}	Peak Power Dissipation($8 \times 20 \mu s @ T_A=25^\circ C$)	30	W
P_D	Steady State Power-1 Diode	380	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient Above $25^\circ C$, Derate	327	$^\circ C/W$
		3.05	Mw/ $^\circ C$
T_{Jmax}	Maximum Junction Temperature	150	$^\circ C$
$T_J T_{stg}$	Operation Junction and Storage Temperature Range	-55 to +150	$^\circ C$
T_L	Lead Solder Temperature(10 seconds duration)	260	$^\circ C$



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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
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics

Part Numbers	V_{BR}			I_T	V_{RWM}	I_R	V_F	I_F	C
	Min.	Typ.	Max.				Max.		Typ. 0v bias
	V	V	V				V		pF
SEMF3V3LC	5.3	5.6	5.88	1	3.3	1.0	1.25	200	28

1. Non-repetitive current per Figure 1.
2. Only 1 diode under power. For 4 diodes under power
3. Capacitance of one diode at $f=1\text{MHz}, T_A=25^\circ\text{C}$

Typical Characteristics

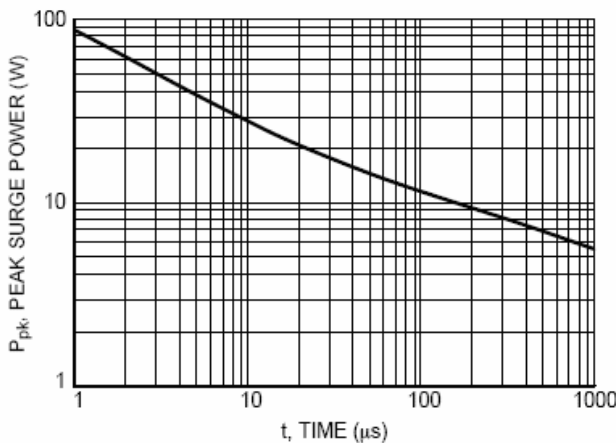


Figure 1 Pulse Width

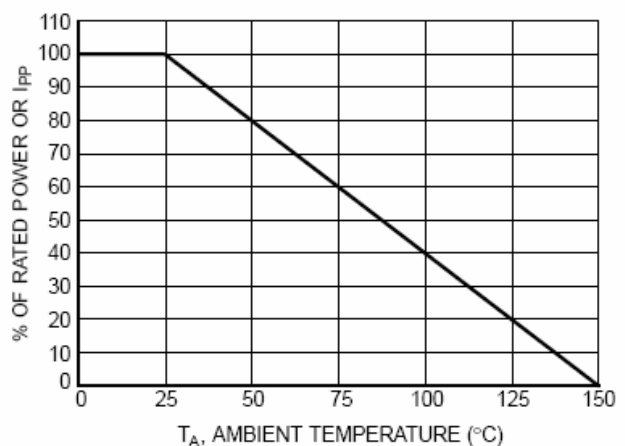


Figure 2 Power Derating Curve

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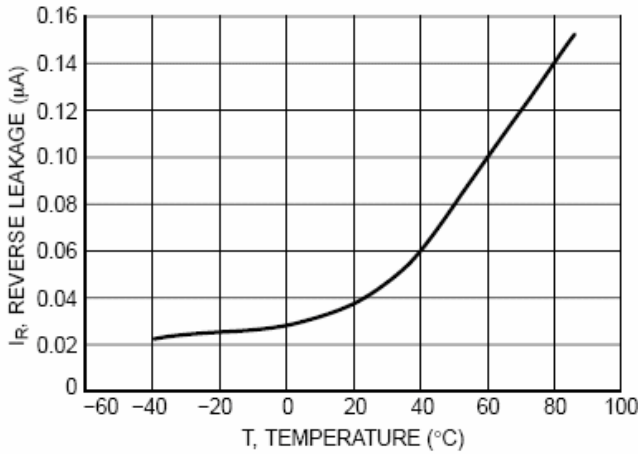


Figure 3 Reverse Leakage versus temperature

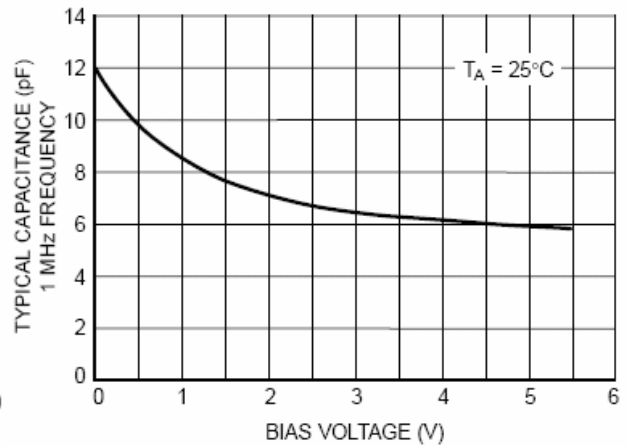


Figure 4 Capacitance

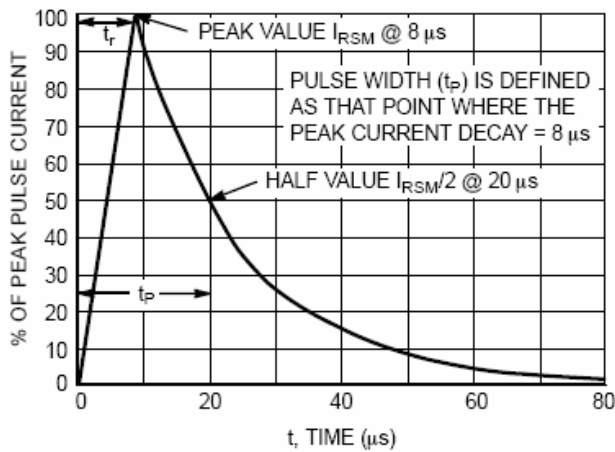


Figure 5 8*20 Pulse Waveform

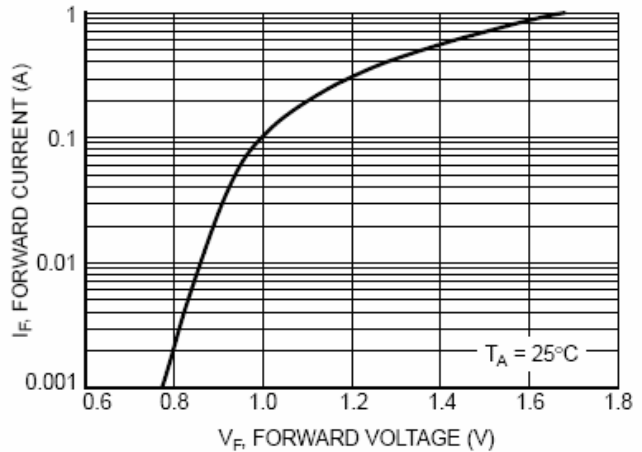
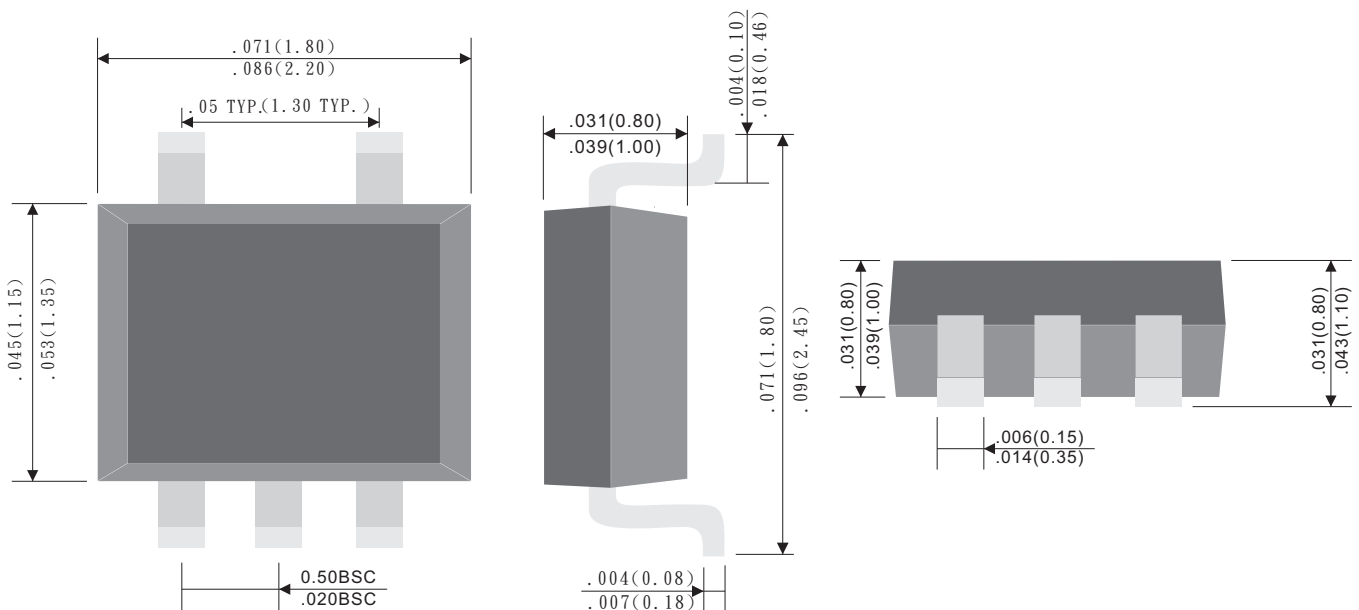


Figure 6 Forward Voltage

SOT-353 Mechanical Data



Dimensions in inches and (millimeters)

Low Capacitance Quad Array for ESD Protection Description**Ordering Information:**

Device PN	Packing
SEMF3V3LC -T ⁽¹⁾ G ⁽²⁾ -WS	Tape&Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape & Reel

(2) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

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