SEMFXXXLCC series
Low Capacitance Quad Array for ESD Protection Description

Revision:A

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

Features

- Four Separate Unidirectional Configurations for Protection
- Low Leakage Current < 1 μA @ 3Volts
- Power Dissipation: 380mW
- Small SOT-363 SMT Package
- Low Capacitance
- Complies to USB 1.1 Low Speed & Speed Specifications
- 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

SOT-363
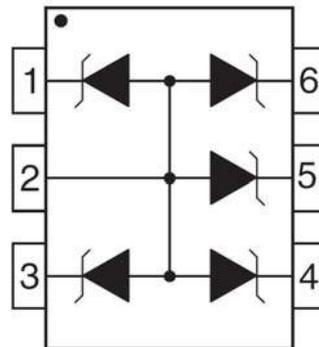
Maximum Ratings (T$_A$=25°C)

Symbol	Parameter	Value	Units
P$_{PK}$	Peak Power Dissipation($8 \times 20 \mu$s@T$_A$=25℃)	30	W
P$_D$	Steady State Power-1 Diode	380	mW
R$_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	327	℃/W
	Above 25℃，Derate	3.05	Mw/℃
T$_{Jmax}$	Maximum Junction Temperature	150	℃
T$_J$ T$_{stg}$	Operation Junction and Storage Temperature Range	-55 to +150	℃
T$_L$	Lead Solder Temperature(10 seconds duration)	260	℃

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
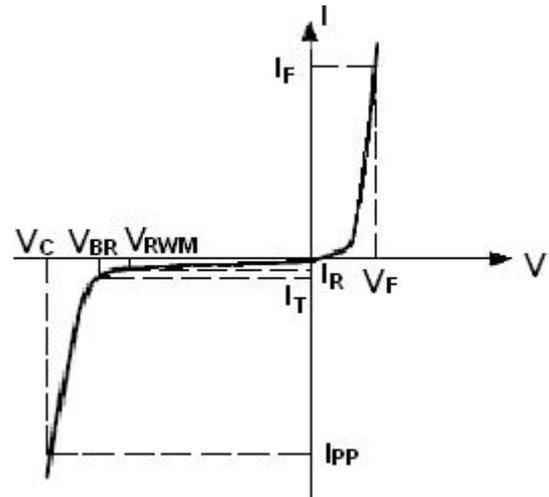
Electrical Characteristics

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	mA	V	µA	V	mA	pF
SEMF3V3LCC	5.3	5.6	5.88	1	3.3	1.0	1.25	200	28
SEMF05LCC	6.47	6.8	7.14	1	5.0	1.0	1.25	200	19

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=1MHz,T_A=25℃

## Typical Characteristics
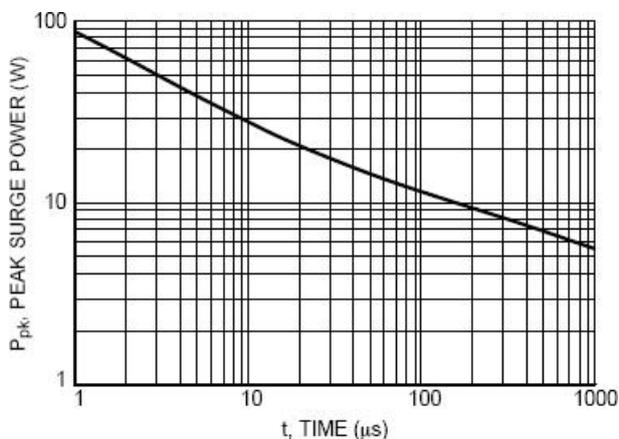
Figure 1 Pulse Width
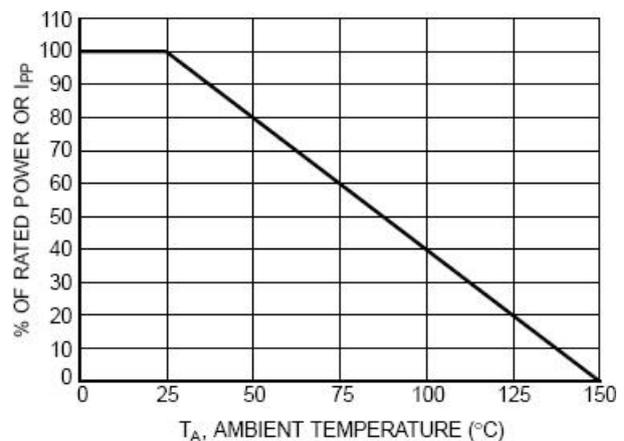

Figure 2 Power Derating Curve
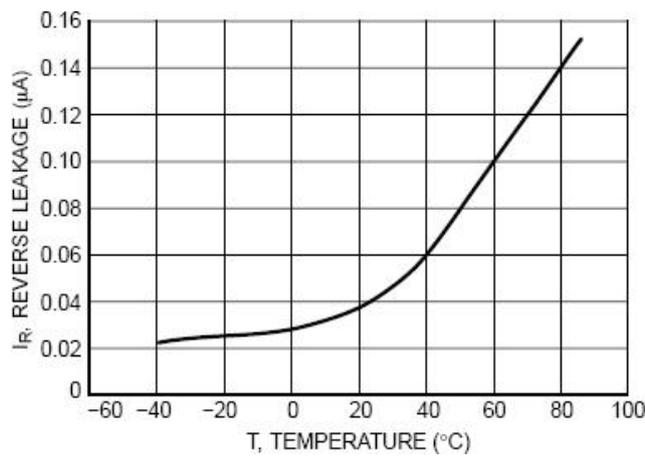
Figure 3 Reverse Leakage versus temperature
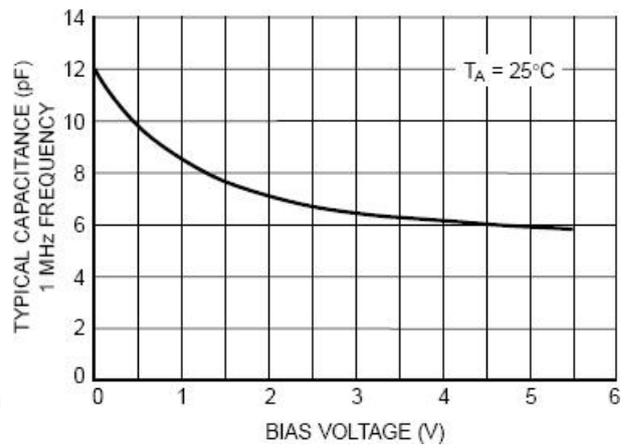

Figure 4 Capacitance
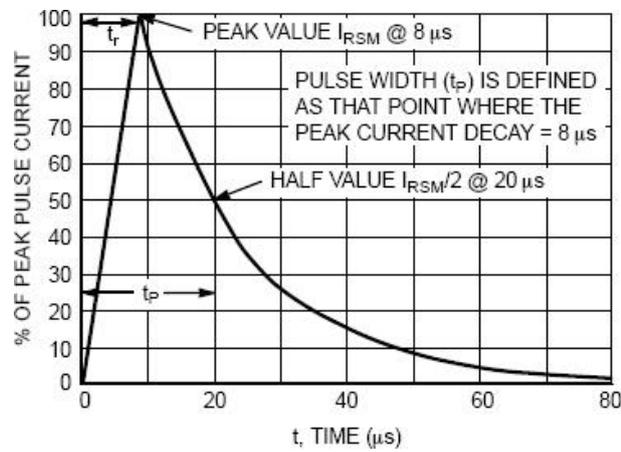
Figure 5 8*20 Pulse Waveform
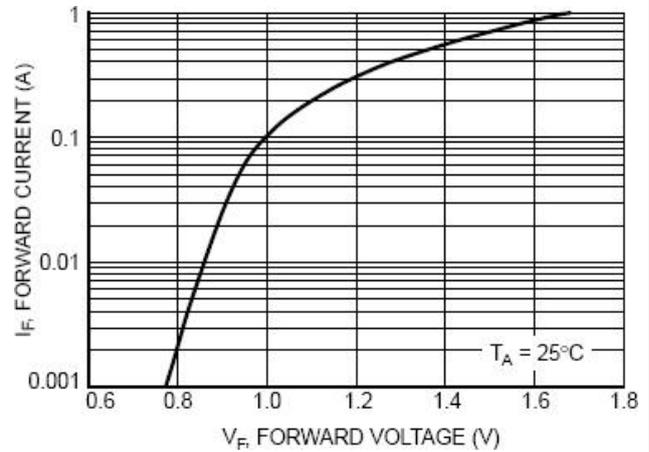
Figure 6 Forward Voltage

SOT-363 Mechanical Data

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.8	1.1	0.031	0.043
A1	0	0.1	0	0.004
A2	0.8	1	0.031	0.039
b	0.15	0.3	0.006	0.012
c	0.1	0.18	0.004	0.007
D	1.8	2.2	0.071	0.086
E	1.15	1.35	0.045	0.053
e	0.65 Typ.		0.025 Typ.	
H	1.8	2.4	0.071	0.094
Q	0.1	0.4	0.004	0.016

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