WILLAS RoHS COMPLIANT

MSEMF3V3LCC

Low Capacitance Quad Array for ESD Protection

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-563 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”

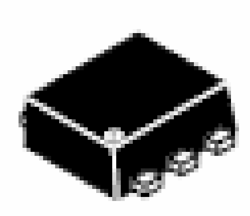
Complies with the following standards

IEC61000-4-2

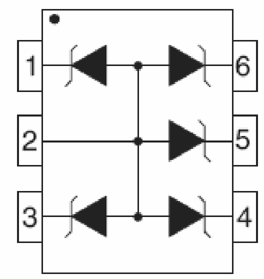
Level 4 15 kV (air discharge)
8 kV(contact discharge)

MIL STD 883E - Method 3015-7 Class 3
25 kV HBM (Human Body Model)

Functional diagram



SOT-563

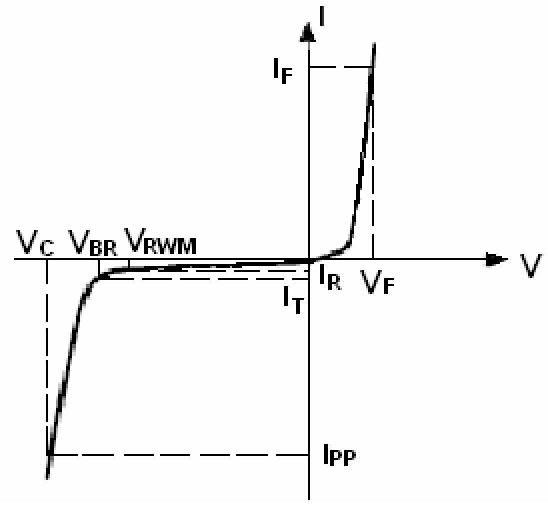


Maximum Ratings (T_A=25°C)

Symbol	Parameter	Value	Units
P_{PK}	Peak Power Dissipation(8×20μs@T_A=25℃)	25	W
P_D	Steady State Power-1 Diode	380	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient Above 25℃, Derate	327 3.05	℃/W 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	C
	Min.	Typ.	Max.				Typ. 0v bias
	V	V	V	mA	V	μA	pF
MSEMF3V3LCC	5.3	5.6	5.9	1	3.0	1.0	12

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

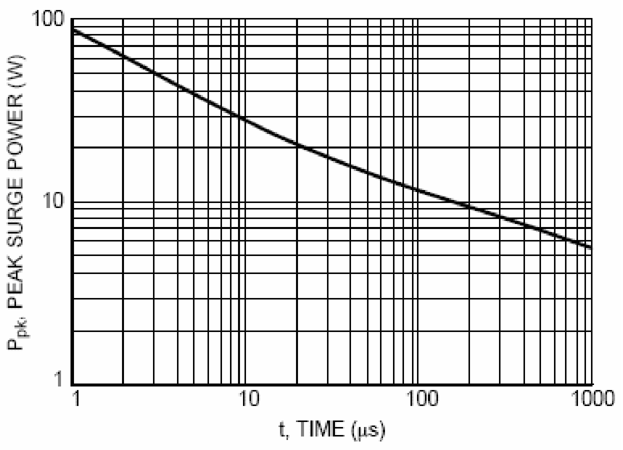


Figure 1 Pulse Width

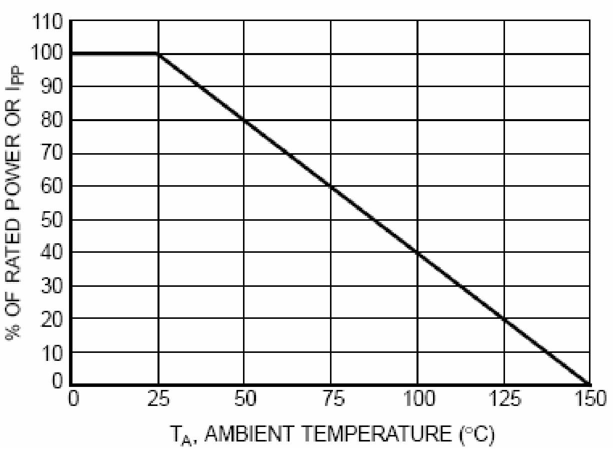


Figure 2 Power Derating Curve

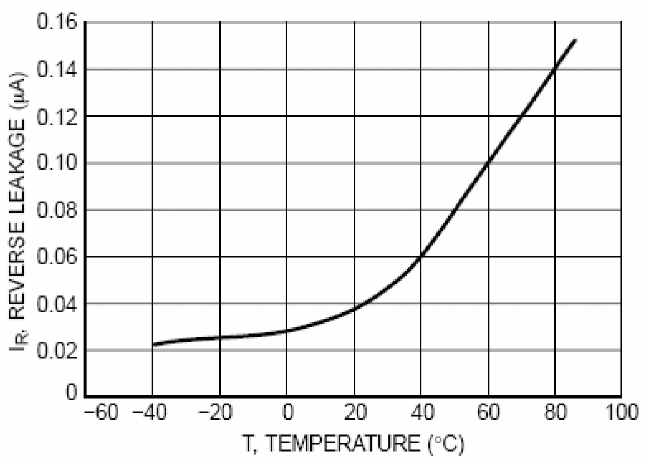


Figure 3 Reverse Leakage versus temperature

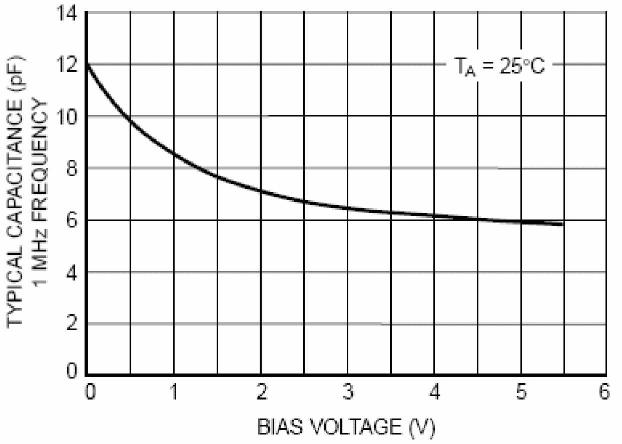


Figure 4 Capacitance

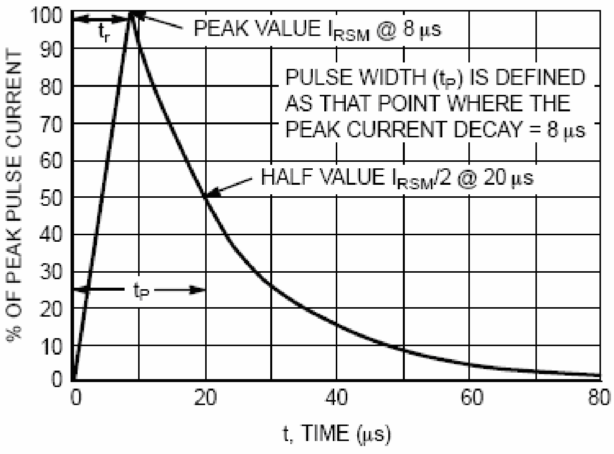


Figure 5 8*20 Pulse Waveform

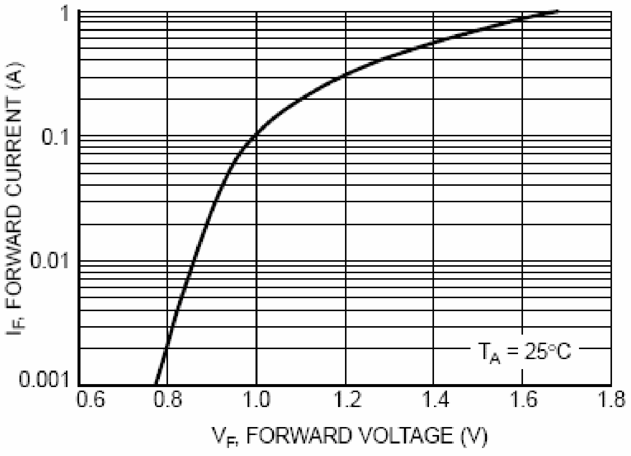
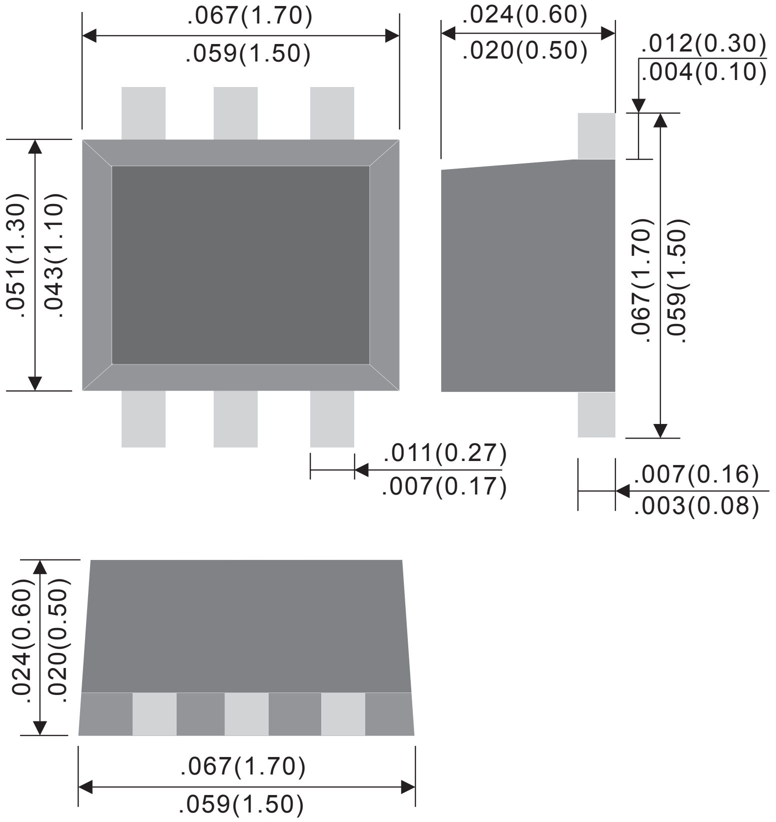


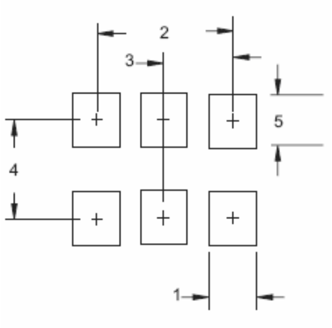
Figure 6 Forward Voltage

SOT-563 Mechanical Data



Dimensions in inches and (millimeters)

Typical		
DIM	**MILLIMETERS**	**INCHES**
1	0.30	0.012
2	1.02	0.040
3	0.51	0.020
4	1.40	0.055
5	0.51	0.020



Type number	Marking code
MSEMF3V3LCC	3C