July 2015

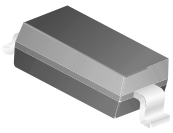
MMSZ4689
5.1 V, 0.5 W Zener Diode

Features

- Compact Surface Mount with Same Footprint as Mini-Melf
- 500 mW Rating on FR-4 or FR-5 Board.
- Class 3 ESD Rating (>16 kV) per Human Body Model

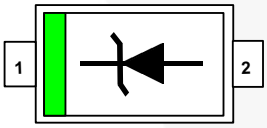
General Description

Half watt, general purpose, medium current surface mount zener in the SOD-123 package. The SOD-123 package has the same footprint as the glass mini-melf (LL-34) package and provides a convenient alternative to the leadless package.



SOD123

Top Mark: CU
1: Cathode
2: Anode



Ordering Information

Part Number	Top Mark	Package	Packing Method
MMSZ4689	CU	SOD-123 2L	Tape and Reel

Absolute Maximum Ratings(1)

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_J	Maximum Junction Temperature	-55 to +150	°C
ΔV_Z	Maximum Voltage Change(2)	970	mV
Lead Solder Temperature (Max. 10 second duration)		260	°C
Nominal Zener Voltage (V_Z) at 50 µA		5.1	V

Notes

1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
2. Voltage change is equal to the difference between V_Z at 100 µA and V_Z at 10 µA.

Thermal Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
P_D	Total Power Dissipation at 25°C	500	mW
	Derate Above 25°C	6.7	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	340	°C/W
$R_{\theta JL}$	Thermal Resistance, Junction-to-Lead	150	°C/W

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Unit
V_Z	Zener Voltage	I_{ZT} = 50 μA $_{D.C}$	4.85	5.36	V
I_R	Reverse Leakage	V_R = 3.0 V		10	μA
V_F	Forward Voltage	I_F = 10 mA		900	mV
ΔV_Z	Delta Zener Voltage(2)	I_{ZT} = 100 μA to 10 μA		970	mV

Typical Performance Characteristics

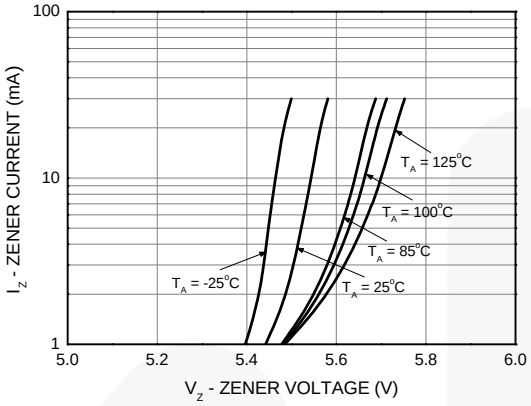


Figure 1. Zener Voltage vs. Zener Current

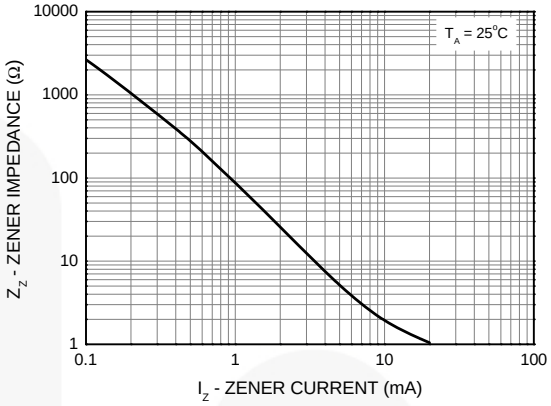


Figure 2. Zener Current vs. Zener Impedance

Physical Dimensions

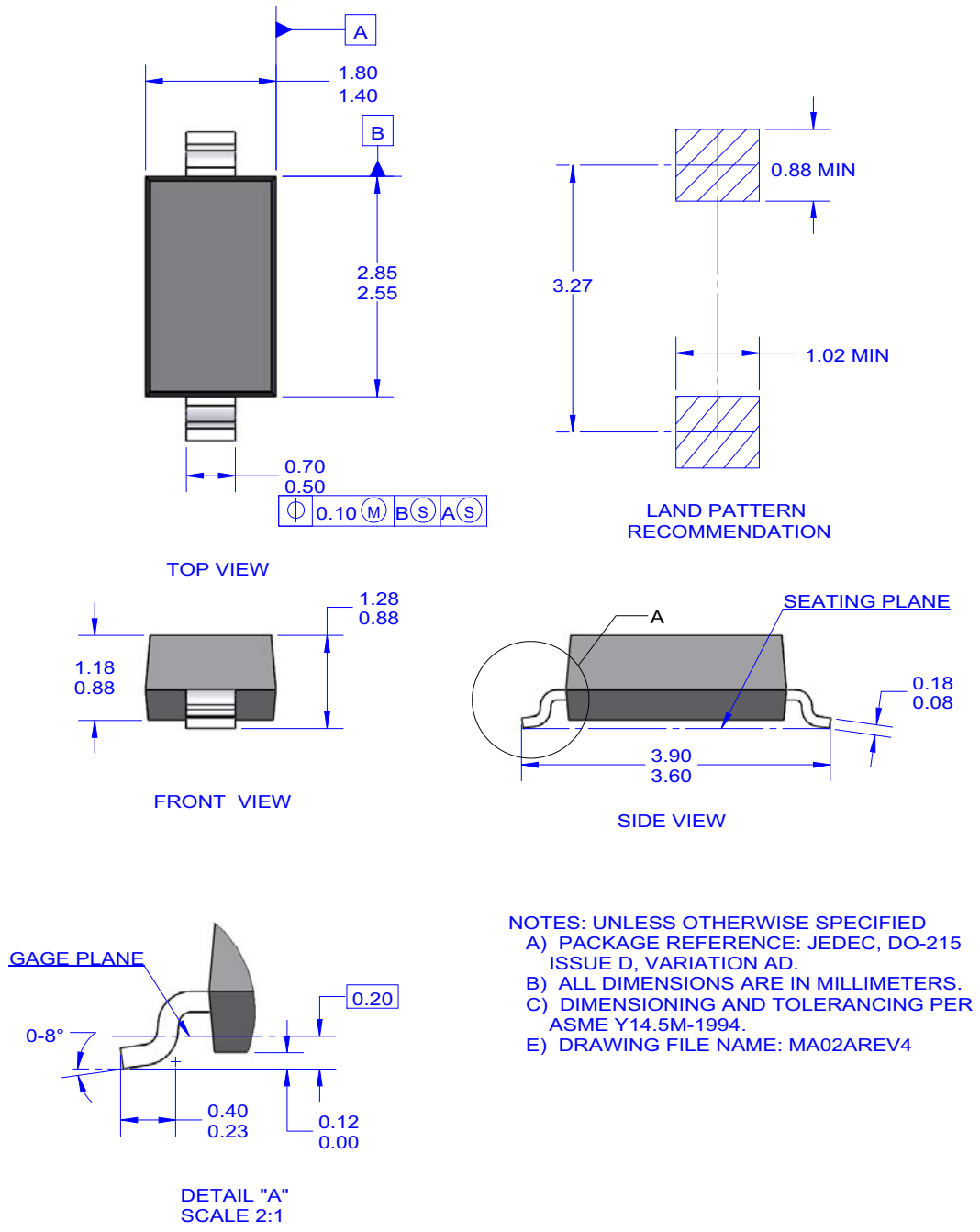


Figure 3. 2-LEAD, SOD123, JEDEC DO-219

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No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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Rev. I75