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July 2015

MMSZ4689 — 5.1 V, 0.5 W Zener Diode

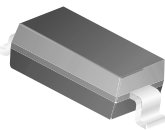
# MMSZ4689 5.1 V, 0.5 W Zener Diode

## 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

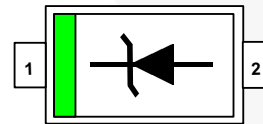
## General Description

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<sup>(1)</sup>

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  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Unit
$T_{STG}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
$T_J$	Maximum Junction Temperature	-55 to +150	$^\circ\text{C}$
$\Delta V_Z$	Maximum Voltage Change <sup>(2)</sup>	970	mV
Lead Solder Temperature (Max. 10 second duration)		260	$^\circ\text{C}$
Nominal Zener Voltage ( $V_Z$ ) at 50 $\mu\text{A}$		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  $\mu\text{A}$  and  $V_Z$  at 10  $\mu\text{A}$ .

## Thermal Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

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

## Electrical Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Unit
$V_Z$	Zener Voltage	$I_{ZT} = 50 \mu\text{A D.C.}$	4.85	5.36	V
$I_R$	Reverse Leakage	$V_R = 3.0 \text{ V}$		10	$\mu\text{A}$
$V_F$	Forward Voltage	$I_F = 10 \text{ mA}$		900	mV
$\Delta V_Z$	Delta Zener Voltage <sup>(2)</sup>	$I_{ZT} = 100 \mu\text{A to } 10 \mu\text{A}$		970	mV

Typical Performance Characteristics

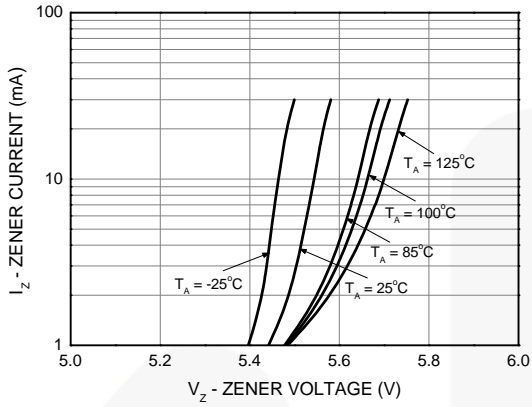


Figure 1. Zener Voltage vs. Zener Current

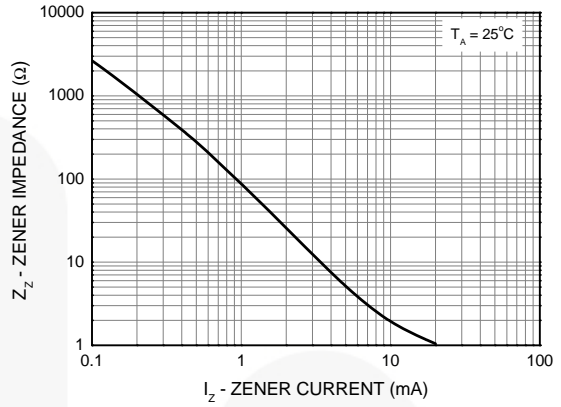


Figure 2. Zener Current vs. Zener Impedance

Physical Dimensions

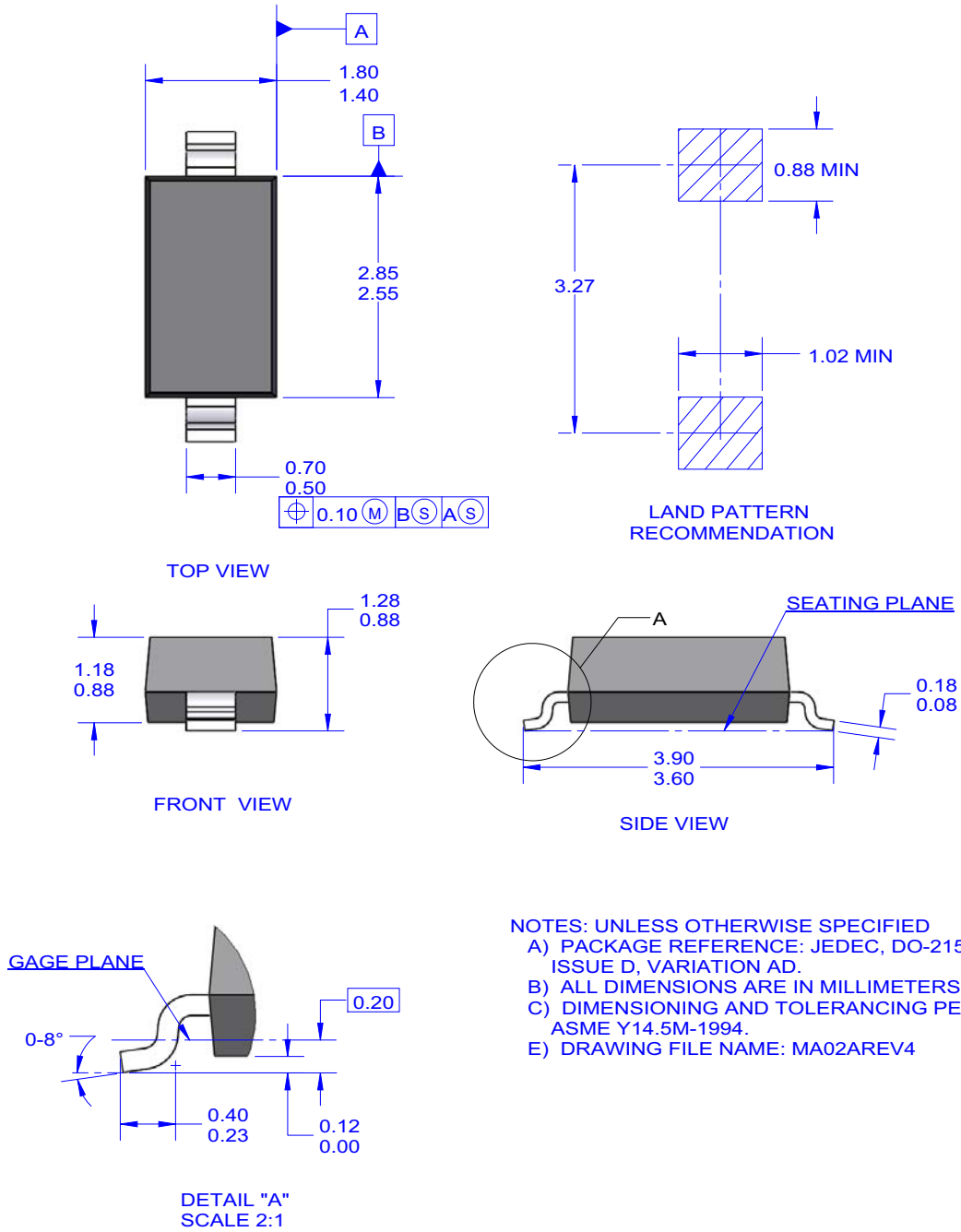



Figure 3. 2-LEAD, SOD123, JEDEC DO-219





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