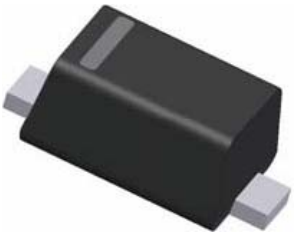
FAIRCHILD SEMICONDUCTOR®

March 2008

# MM5Z2V4 - MM5Z75V
# Zener Diodes

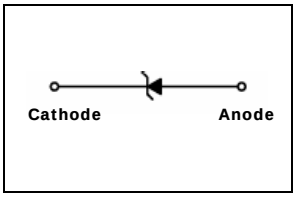
## Features

- Wide Zener Voltage Range Selection, 2.4V to 75V
- Flat Lead, Surface Mount Device Under 0.70mm Height
- Extremely Small Outline Plastic Package SOD523F
- Moisture Sensitivity Level 1
- Pb Free Version and RoHS Compliant
- Matte Tin(Sn) Lead Finish
- Band Indicates Cathode
- Green Mold Compound



SOD-523F

**Electrical Symbol**




## Absolute Maximum Ratings

$T_a$ = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $P_D$ | Power Dissipation | 200 | mW |
| $T_{STG}$ | Storage Temperature Range | -55 to +150 | °C |
| $T_{OPR}$ | Operating Temperature Range | -55 to +150 | °C |

* These ratings are limiting values above which the serviceability of the diode may be impaired.

## Thermal Characteristics

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 500 | °C/W |

* Device mounted on FR-4 PCB minimum land pad.

## Package Marking and Ordering Information

| Device Marking | Device | Package | Packing | Reel Size | Tape Width | Quantity |
|---|---|---|---|---|---|---|
| Refer to Product table list | Refer to Product table list | SOD-523F | Tape & Reel | 7” | 12mm | 3,000 |

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## Electrical Characteristics $T_A$=25°C unless otherwise noted

| Device Type | Device Marking | $V_Z$ (V) @ $I_{ZT}$ | | | $Z_{ZT}$(Ω) @ $I_{ZT}$ | $I_{ZT}$ (mA) | $Z_{ZK}$(Ω) @ $I_{ZK}$ | $I_{ZK}$ (mA) | $I_R$(μA) @ $V_R$ | $V_R$(V) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | Max. | - | Max. | - | Max | - |
| MM5Z2V4 | 50 | 2.2 | 2.4 | 2.6 | 100 | 5 | 1000 | 1 | 50 | 1 |
| MM5Z2V7 | 51 | 2.5 | 2.7 | 2.9 | 100 | 5 | 1000 | 1 | 20 | 1 |
| MM5Z3V0 | 52 | 2.8 | 3.0 | 3.2 | 100 | 5 | 1000 | 1 | 10 | 1 |
| MM5Z3V3 | 53 | 3.1 | 3.3 | 3.5 | 95 | 5 | 1000 | 1 | 5 | 1 |
| MM5Z3V6 | 54 | 3.4 | 3.6 | 3.8 | 90 | 5 | 1000 | 1 | 5 | 1 |
| MM5Z3V9 | 55 | 3.7 | 3.9 | 4.1 | 90 | 5 | 1000 | 1 | 3 | 1 |
| MM5Z4V3 | 56 | 4.0 | 4.3 | 4.6 | 90 | 5 | 1000 | 1 | 3 | 1 |
| MM5Z4V7 | 57 | 4.4 | 4.7 | 5.0 | 80 | 5 | 800 | 1 | 3 | 2 |
| MM5Z5V1 | 58 | 4.8 | 5.1 | 5.4 | 60 | 5 | 500 | 1 | 2 | 2 |
| MM5Z5V6 | 59 | 5.2 | 5.6 | 6.0 | 40 | 5 | 200 | 1 | 1 | 2 |
| MM5Z6V2 | 5A | 5.8 | 6.2 | 6.6 | 10 | 5 | 100 | 1 | 3 | 4 |
| MM5Z6V8 | 5B | 6.4 | 6.8 | 7.2 | 15 | 5 | 160 | 1 | 2 | 4 |
| MM5Z7V5 | 5C | 7.0 | 7.5 | 7.9 | 15 | 5 | 160 | 1 | 1 | 5 |
| MM5Z8V2 | 5D | 7.7 | 8.2 | 8.7 | 15 | 5 | 160 | 1 | 0.7 | 5 |
| MM5Z9V1 | 5E | 8.5 | 9.1 | 9.6 | 15 | 5 | 160 | 1 | 0.2 | 7 |
| MM5Z10V | 5F | 9.4 | 10 | 10.6 | 20 | 5 | 160 | 1 | 0.1 | 8 |
| MM5Z11V | 5G | 10.4 | 11 | 11.6 | 20 | 5 | 160 | 1 | 0.1 | 8 |
| MM5Z12V | 5H | 11.4 | 12 | 12.7 | 25 | 5 | 80 | 1 | 0.1 | 8 |
| MM5Z13V | 5J | 12.4 | 13 | 14.1 | 30 | 5 | 80 | 1 | 0.1 | 8 |
| MM5Z15V | 5K | 14.3 | 15 | 15.8 | 30 | 5 | 80 | 1 | 0.05 | 10.5 |
| MM5Z16V | 5L | 15.3 | 16 | 17.1 | 40 | 5 | 80 | 1 | 0.05 | 11.2 |
| MM5Z18V | 5M | 16.8 | 18 | 19.1 | 45 | 5 | 80 | 1 | 0.05 | 12.6 |
| MM5Z20V | 5N | 18.8 | 20 | 21.2 | 55 | 5 | 100 | 1 | 0.05 | 14.0 |
| MM5Z22V | 5P | 20.8 | 22 | 23.3 | 55 | 5 | 100 | 1 | 0.05 | 15.4 |
| MM5Z24V | 5R | 22.8 | 24 | 25.6 | 70 | 5 | 120 | 1 | 0.05 | 16.8 |
| MM5Z27V | 5S | 25.1 | 27 | 28.9 | 80 | 2 | 300 | 0.5 | 0.05 | 18.9 |
| MM5Z30V | 5T | 28 | 30 | 32 | 80 | 2 | 300 | 0.5 | 0.05 | 21.0 |
| MM5Z33V | 5U | 31 | 33 | 35 | 80 | 2 | 300 | 0.5 | 0.05 | 23.2 |
| MM5Z36V | 5V | 34 | 36 | 38 | 90 | 2 | 500 | 0.5 | 0.05 | 25.2 |
| MM5Z39V | 5X | 37 | 39 | 41 | 130 | 2 | 500 | 0.5 | 0.05 | 27.3 |
| MM5Z43V | 5Y | 40 | 43 | 46 | 150 | 2 | 500 | 0.5 | 0.05 | 30.1 |
| MM5Z47V | 5Z | 44 | 47 | 50 | 170 | 2 | 500 | 0.5 | 0.05 | 32.9 |
| MM5Z51V | 5– | 48 | 51 | 54 | 180 | 2 | 500 | 0.5 | 0.05 | 35.7 |
| MM5Z56V | 5= | 52 | 56 | 60 | 200 | 2 | 500 | 0.5 | 0.05 | 39.2 |
| MM5Z62V | 5≅ | 58 | 62 | 66 | 215 | 2 | 500 | 0.5 | 0.05 | 43.4 |
| MM5Z68V | 5> | 64 | 68 | 72 | 240 | 2 | 500 | 0.5 | 0.05 | 47.6 |
| MM5Z75V | 5< | 70 | 75 | 79 | 255 | 2 | 500 | 0.5 | 0.05 | 52.5 |

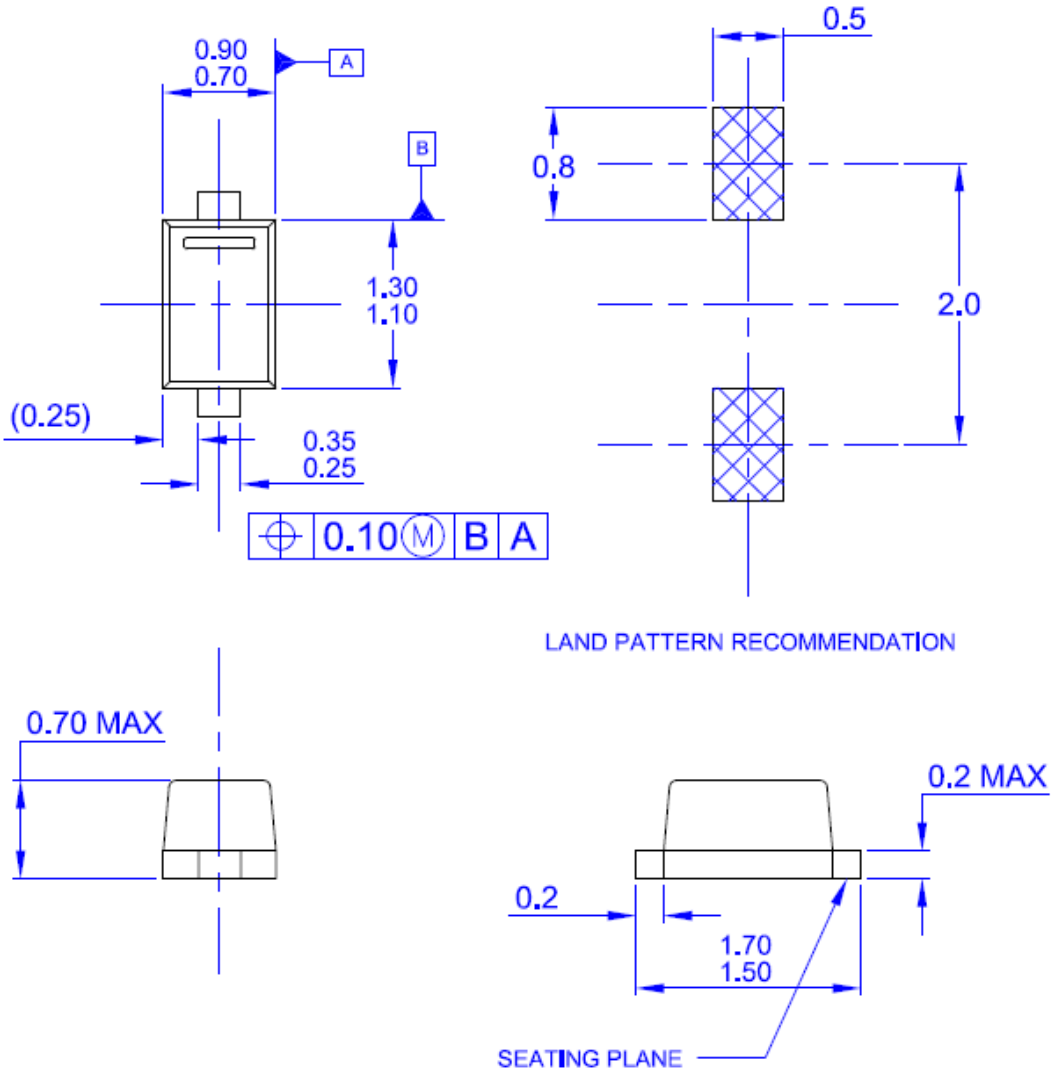
**NOTES:**

1) The Zener Voltage (VZ) is tested under pulse condition of 10mS.

2) The Zener impedance is derived from the 60-cycle AC voltage, which results when an AC current having an RMS value equal to 10% of the DC Zener current (IZT or IZK) is superimposed to IZT or IZK.

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## SOD-523F Package Outline




NOTES: UNLESS OTHERWISE SPECIFIED

A) PACKAGE REFERENCE: THIS PACKAGE OUTLINE CONFORMS TO JEITA SC-79.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DRAWING CONFORMS TO ASME Y14.5M - 1994
D) DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.
E) LANDPATTERN RECOMMENDATION IS BASED ON IPC7351A STANDARD SOD1609X65M.
F) DRAWING NUMBER AND REVISION:MKT-SOD523F1rev1

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Power-SPM™
PowerTrench®
Programmable Active Droop™
QFET®
QS™
QT Optoelectronics™
Quiet Series™
RapidConfigure™
SMART START™
SPM®
STEALTH™
SuperFET™
SuperSOT™-3
SuperSOT™-6
SuperSOT™-8
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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

## PRODUCT STATUS DEFINITIONS

**Definition of Terms**

| Datasheet Identification | Product Status | Definition |
|---|---|---|
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