

# Zener Diodes

## MM3Z2V4B-MM3Z75VB

### Features

- Wide Zener Voltage Range Selection, 2.4 V to 75 V
- $V_Z$  Tolerance Selection of  $\pm 2\%$  (B Series)
- Very Small and Thin SMD Package
- Matte Tin(Sn) Finish, Pb-Free

### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
$P_D$	Power Dissipation	200	mW
$T_{STG}$	Storage Temperature Range	-65 to +150	$^\circ\text{C}$
$T_J$	Maximum Junction Temperature	150	$^\circ\text{C}$
$I_{ZM}$	Maximum Regulator Current	$P_D/V_Z$	mA

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### THERMAL CHARACTERISTICS

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	595	$^\circ\text{C}/\text{W}$

### ELECTRICAL CHARACTERISTICS

( $T_A = 25^\circ\text{C}$  unless otherwise specified)

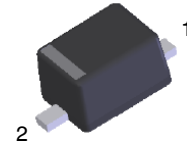
Symbol	Parameter/Test Condition	Min	Typ	Max	Unit
$V_F$	Forward Voltage / $I_F = 10\text{ mA}$	-	-	1.0	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.



ON Semiconductor®

[www.onsemi.com](http://www.onsemi.com)

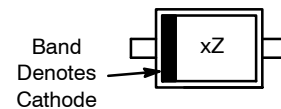


SOD-323FL  
CASE 477AB

### CONNECTION DIAGRAM



### MARKING DIAGRAM



xZ = Specific Device Code  
x = 0-9, A-Z, -, =, ≡, <, >

### ORDERING INFORMATION

See detailed ordering and shipping information on page 5 of this data sheet.

# MM3Z2V4B–MM3Z75VB

**PRODUCT TABLE** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Device Type	Device Marking	$V_Z$ (V) @ $I_{ZT}$			$Z_{ZT}(\wedge)$ @ $I_{ZT}$	$I_{ZT}$ (mA)	$Z_{ZK}(\wedge)$ @ $I_{ZK}$	$I_{ZK}$ (mA)	$I_R$ ( $\mu\text{A}$ ) @ $V_R$	$V_R$ (V)
		Min	Typ	Max	Max	–	Max	–	Max	–
MM3Z2V4B	0Z	2.35	2.4	2.45	94	5	564	1	45	1
MM3Z2V7B	1Z	2.65	2.7	2.75	94	5	564	1	18	1
MM3Z3V0B	2Z	2.94	3.0	3.06	89	5	564	1	9	1
MM3Z3V3B	3Z	3.23	3.3	3.37	89	5	564	1	4.5	1
MM3Z3V6B	4Z	3.53	3.6	3.67	84	5	564	1	4.5	1
MM3Z3V9B	5Z	3.82	3.9	3.98	84	5	564	1	2.7	1
MM3Z4V3B	6Z	4.21	4.3	4.39	84	5	564	1	2.7	1
MM3Z4V7B	7Z	4.61	4.7	4.79	75	5	470	1	2.7	2
MM3Z5V1B	8Z	5.00	5.1	5.20	56	5	451	1	1.8	2
MM3Z5V6B	9Z	5.49	5.6	5.71	37	5	376	1	0.9	2
MM3Z6V2B	AZ	6.08	6.2	6.32	9	5	141	1	2.7	4
MM3Z6V8B	BZ	6.66	6.8	6.94	14	5	75	1	1.8	4
MM3Z7V5B	CZ	7.35	7.5	7.65	14	5	75	1	0.9	5
MM3Z8V2B	DZ	8.04	8.2	8.36	14	5	75	1	0.63	5
MM3Z9V1B	EZ	8.92	9.1	9.28	14	5	94	1	0.45	6
MM3Z10VB	FZ	9.80	10	10.20	18	5	141	1	0.18	7
MM3Z11VB	GZ	10.78	11	11.22	18	5	141	1	0.09	8
MM3Z12VB	HZ	11.76	12	12.24	23	5	141	1	0.09	8
MM3Z13VB	JZ	12.74	13	13.26	28	5	160	1	0.09	8
MM3Z15VB	KZ	14.70	15	15.30	28	5	188	1	0.045	10.5
MM3Z16VB	LZ	15.68	16	16.32	37	5	188	1	0.045	11.2
MM3Z18VB	MZ	17.64	18	18.36	42	5	212	1	0.045	12.6
MM3Z20VB	NZ	19.60	20	20.40	51	5	212	1	0.045	14.0
MM3Z22VB	PZ	21.56	22	22.44	51	5	235	1	0.045	15.4
MM3Z24VB	RZ	23.52	24	24.48	65	5	235	1	0.045	16.8
MM3Z27VB	SZ	26.46	27	27.54	75	2	282	0.5	0.045	18.9
MM3Z30VB	TZ	29.40	30	30.60	75	2	282	0.5	0.045	21.0
MM3Z33VB	UZ	32.34	33	33.66	75	2	306	0.5	0.045	23.0
MM3Z36VB	VZ	35.28	36	36.72	84	2	329	0.5	0.045	25.2
MM3Z39VB	WZ	38.22	39	39.78	122	2	329	0.5	0.045	27.3
MM3Z43VB	XZ	42.14	43	43.86	141	2	353	0.5	0.045	30.1
MM3Z47VB	YZ	46.06	47	47.94	160	2	353	0.5	0.045	33.0
MM3Z51VB	_Z	49.98	51	52.02	169	2	376	0.5	0.045	35.7
MM3Z56VB	=Z	54.88	56	57.12	188	2	400	0.5	0.045	39.2
MM3Z62VB	≡Z	60.76	62	63.24	202	2	423	0.5	0.045	43.4
MM3Z68VB	>Z	66.64	68	69.36	226	2	447	0.5	0.045	47.6
MM3Z75VB	<Z	73.5	75	76.50	240	2	470	0.5	0.045	52.5

1. The Zener voltage ( $V_Z$ ) is tested under pulse condition of 10 mS.
2. The device numbers listed have a standard tolerance on the nominal Zener voltage of  $\pm 2\%$ .
3. 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 ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed to  $I_{ZT}$  or  $I_{ZK}$ .

# MM3Z2V4B-MM3Z75VB

## TYPICAL PERFORMANCE CHARACTERISTICS

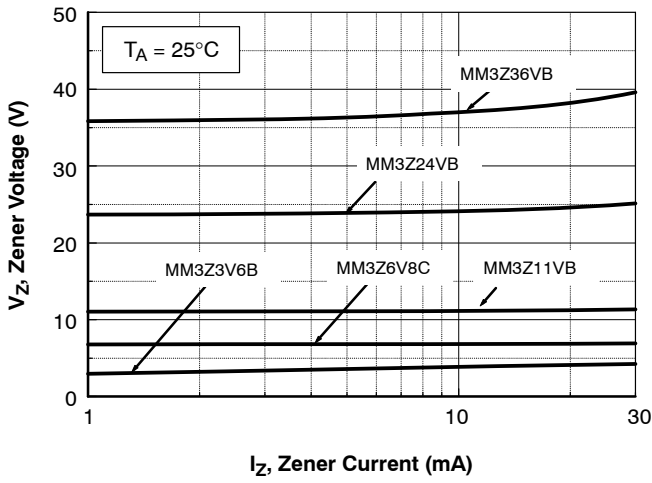


Figure 1. Zener Current vs. Zener Voltage

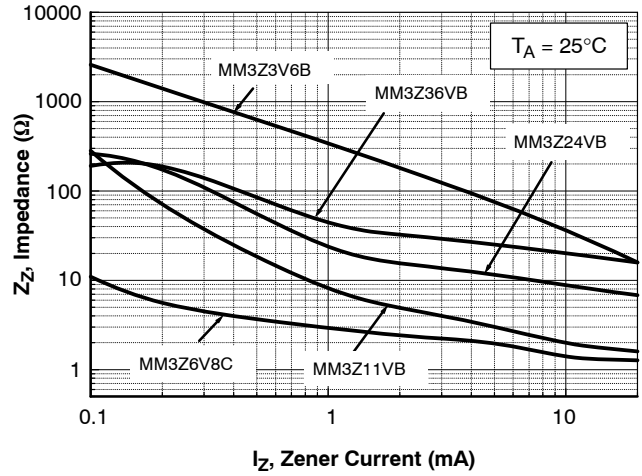


Figure 2. Zener Current vs. Zener Impedance

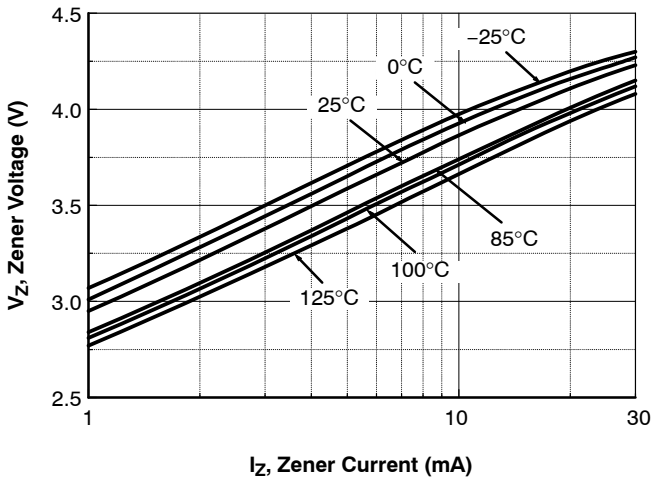


Figure 3. MM3Z3V6B – Zener Current vs. Zener Voltage

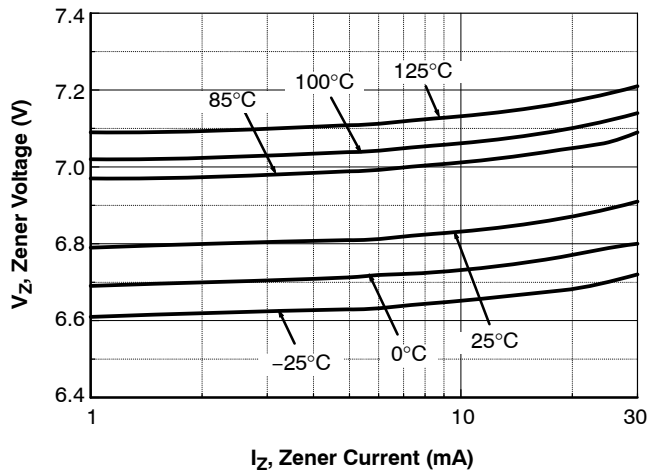


Figure 4. MM3Z6V8C – Zener Current vs. Zener Voltage

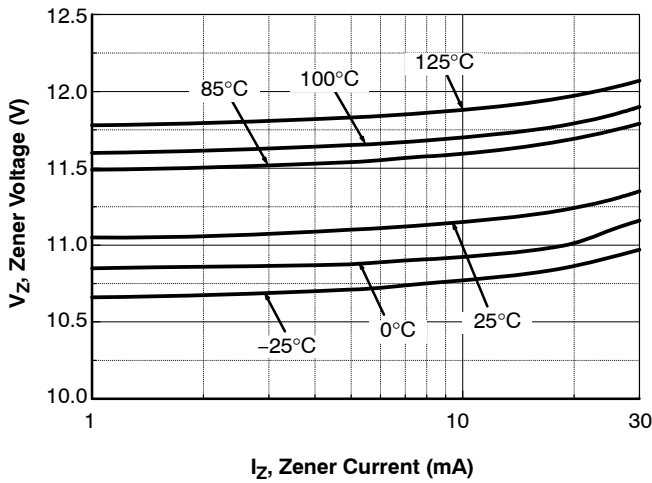


Figure 5. MM3Z11VB – Zener Current vs. Zener Voltage

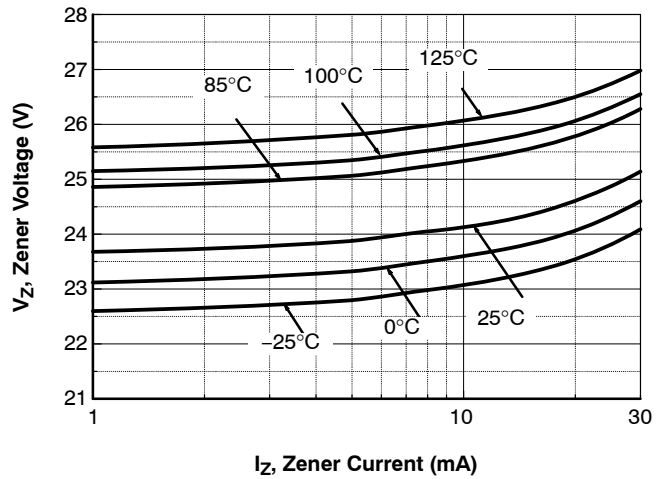


Figure 6. MM3Z24VB – Zener Current vs. Zener Voltage

# MM3Z2V4B-MM3Z75VB

## TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

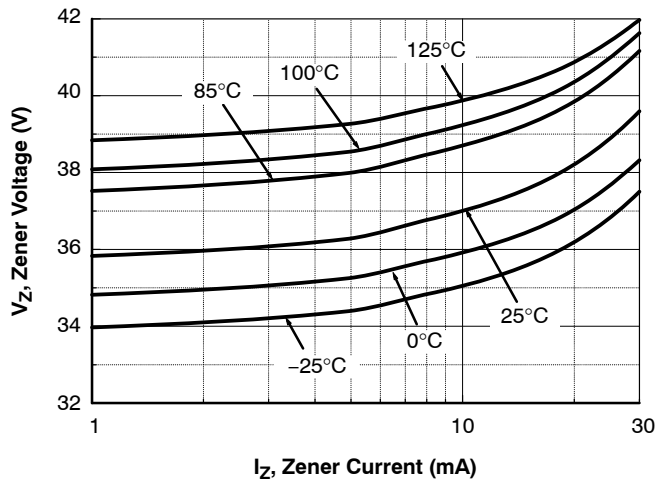


Figure 7. MM3Z36VB – Zener Current vs. Zener Voltage

## MM3Z2V4B–MM3Z75VB

### ORDERING INFORMATION

Device	Package	Shipping†
MM3Z10VB	SOD-323FL (Pb-Free)	3000 / Tape & Reel
MM3Z11VB		
MM3Z12VB		
MM3Z13VB		
MM3Z15VB		
MM3Z16VB		
MM3Z18VB		
MM3Z20VB		
MM3Z22VB		
MM3Z24VB		
MM3Z27VB		
MM3Z2V4B		
MM3Z2V7B		
MM3Z30VB		
MM3Z33VB		
MM3Z36VB		
MM3Z39VB		
MM3Z3V0B		
MM3Z3V3B		
MM3Z3V6B		
MM3Z3V9B		
MM3Z43VB		
MM3Z47VB		
MM3Z4V3B		
MM3Z4V7B		
MM3Z51VB		
MM3Z56VB		
MM3Z5V1B		
MM3Z5V6B		
MM3Z62VB		
MM3Z68VB		
MM3Z6V2B		
MM3Z6V8B		
MM3Z75VB		
MM3Z7V5B		
MM3Z8V2B		
MM3Z9V1B		

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

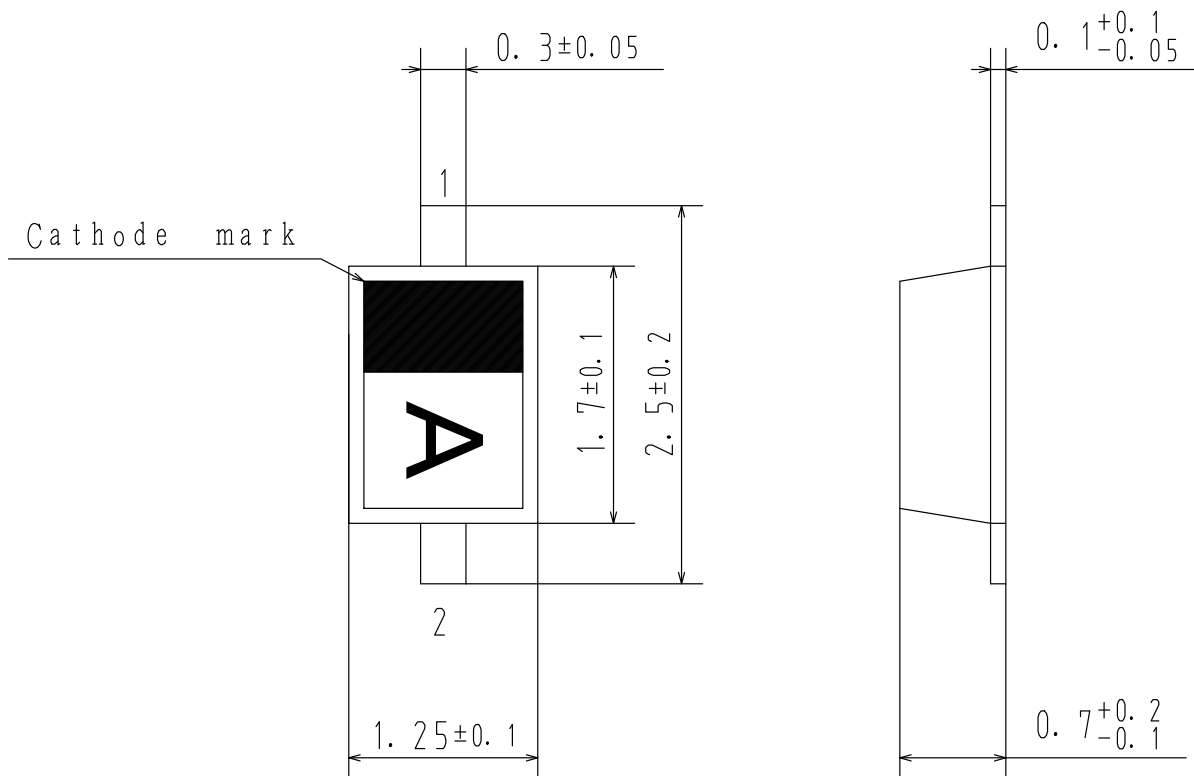
**MECHANICAL CASE OUTLINE**  
**PACKAGE DIMENSIONS**

ON Semiconductor®



SOD-323FL  
CASE 477AB  
ISSUE O

DATE 30 APR 2012



<b>DOCUMENT NUMBER:</b>	<b>98AON79864E</b>	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
<b>DESCRIPTION:</b>	<b>SOD-323FL</b>	<b>PAGE 1 OF 1</b>

ON Semiconductor and are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. ON Semiconductor does not convey any license under its patent rights nor the rights of others.

**onsemi**, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at [www.onsemi.com/site/pdf/Patent-Marking.pdf](http://www.onsemi.com/site/pdf/Patent-Marking.pdf). **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## PUBLICATION ORDERING INFORMATION

### LITERATURE FULFILLMENT:

Email Requests to: [orderlit@onsemi.com](mailto:orderlit@onsemi.com)

**onsemi Website:** [www.onsemi.com](http://www.onsemi.com)

### TECHNICAL SUPPORT

**North American Technical Support:**

Voice Mail: 1 800-282-9855 Toll Free USA/Canada

Phone: 011 421 33 790 2910

**Europe, Middle East and Africa Technical Support:**

Phone: 00421 33 790 2910

For additional information, please contact your local Sales Representative