

NZ3FxxxT1G Series, SZNZ3FxxxT1G Series

Zener Voltage Regulators

800 mW SOD-323FL Surface Mount

This series of Zener diodes is packaged in a SOD-323FL surface mount package that has a power dissipation of 800 mW. They are designed to provide voltage regulation protection and are especially attractive in situations where space is at a premium. They are well suited for applications such as cellular phones, hand held portables, high density PC boards, and automotive.

Specification Features:

- Standard Zener Breakdown Voltage Range – 2.4 V to 75 V
- Steady State Power Rating of 800 mW
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- SZ Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

Mechanical Characteristics:

CASE: Void-free, Transfer-Molded Plastic

FINISH: All External Surfaces are Corrosion Resistant

MAXIMUM CASE TEMPERATURE FOR SOLDERING PURPOSES:

260°C for 10 Seconds

LEADS: Plated with Pb-Sn or Sn Only (Pb-Free)

POLARITY: Cathode Indicated by Polarity Band

FLAMMABILITY RATING: UL 94 V-0

MOUNTING POSITION: Any

MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Total Device Dissipation FR-4 Board, (Note 1) @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	800 6.4	mW mW/°C
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	156	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	-65 to +150	°C

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.

1. FR-4 printed circuit board, single-sided copper, mounting pad 1 cm².

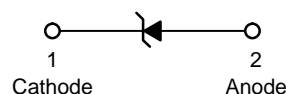


ON Semiconductor®

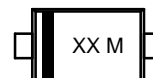
www.onsemi.com



SOD-323FL
CASE 477AC



MARKING DIAGRAM



XX = Specific Device Code
M Date Code

ORDERING INFORMATION

Device	Package	Shipping†
NZ3FxxxT1G	SOD-323FL (Pb-Free)	3,000 / Tape & Reel
SZNZ3FxxxT1G	SOD-323FL (Pb-Free)	3,000 / Tape & Reel

†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.

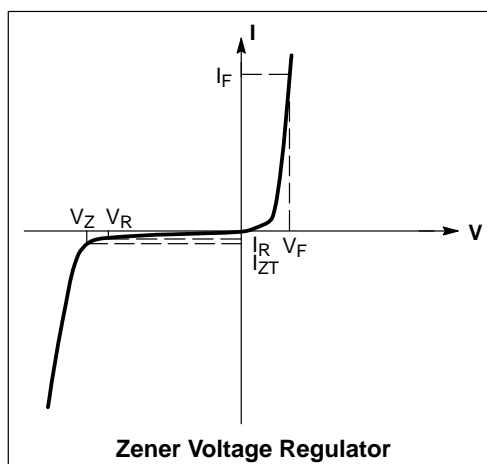
DEVICE MARKING INFORMATION

See specific marking information in the device marking column of the Electrical Characteristics table on page 2 of this data sheet.

NZ3FxxxT1G Series, SZNZ3FxxxT1G Series

ELECTRICAL CHARACTERISTICS

Symbol	Parameter
V_Z	Reverse Zener Voltage @ I_{ZT}
I_{ZT}	Reverse Current
Z_{ZT}	Maximum Zener Impedance @ I_{ZT}
I_{ZK}	Reverse Current
Z_{ZK}	Maximum Zener Impedance @ I_{ZK}
I_R	Reverse Leakage Current @ V_R
V_R	Reverse Voltage
I_F	Forward Current
V_F	Forward Voltage @ I_F
ΘV_Z	Maximum Temperature Coefficient of V_Z
C	Max. Capacitance @ $V_R = 0$ and $f = 1$ MHz



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 1.3$ V Max. @ $I_F = 10$ mA for all types)

Device*	Device Marking	Zener Voltage (Note 2)				Zener Impedance			Leakage Current		θV _Z (mV/k) @ I _{ZT}		C @ V _R = 0 f = 1 MHz
		V _Z (Volts)			@ I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _R @ V _R					
		Min	Nom	Max	mA	Ω	Ω	mA	μA	Volts	Min	Max	pF
NZ3F2V4T1G		2.2	2.4	2.6	5	120	1000	0.5	50	1.0	−3.5	0	450
NZ3F4V7T1G		4.4	4.7	5.0	5	100	800	0.5	3	2.0	−3.5	0.2	260
NZ3F5V1T1G		4.8	5.1	5.4	5	80	500	0.5	2	2.0	−2.7	1.2	225
NZ3F5V6T1G		5.2	5.6	6.0	5	60	200	0.5	1	2.0	−2.0	2.5	200
NZ3F9V1T1G		8.5	9.1	9.6	5	45	240	0.5	0.2	7.0	3.8	7.0	130
NZ3F10VT1G		9.4	10	10.6	5	40	175	0.5	0.1	8.0	4.5	8.0	130
NZ3F12VT1G		11.4	12	12.7	5	60	220	0.5	0.1	8.0	6.0	10	130
NZ3F15VT1G		14.3	15	15.8	5	100	220	0.5	0.05	10.5	9.2	13	110
NZ3F18VT1G		16.8	18	19.1	5	60	290	0.5	0.05	12.6	12.4	16	100
NZ3F33VT1G		31	33	35	2	140	310	0.5	0.05	23.2	27.4	33.4	70
NZ3F47VT1G		44	47	50	2	150	500	0.5	0.05	32.9	42.0	51.8	40
NZ3F75VT1G		70	75	79	2	155	780	0.5	0.05	52.5	73.4	88.6	35

*Includes SZ-prefix devices where applicable.

2. Zener voltage is measured with a pulse test current I_Z at an ambient temperature of 25°C .

TYPICAL CHARACTERISTICS

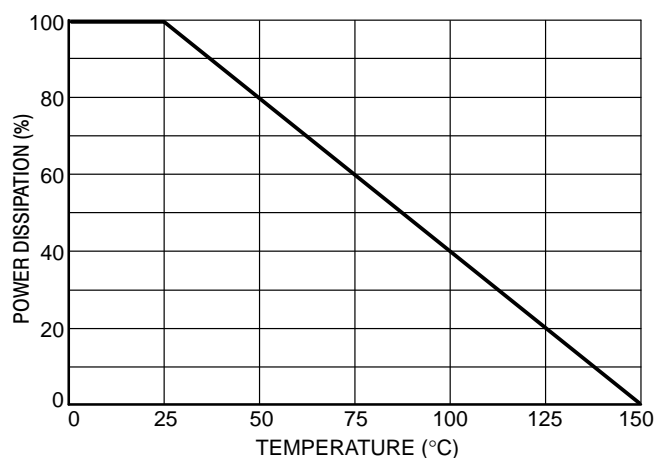


Figure 1. Steady State Power Derating

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

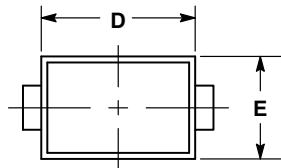
ON Semiconductor®



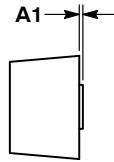
SCALE 2:1

SOD-323FL
CASE 477AC
ISSUE B

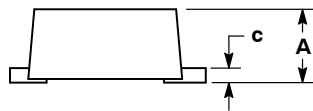
DATE 12 JAN 2016



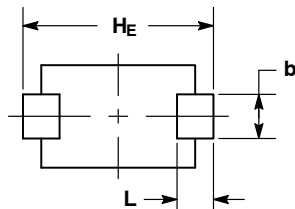
TOP VIEW



END VIEW

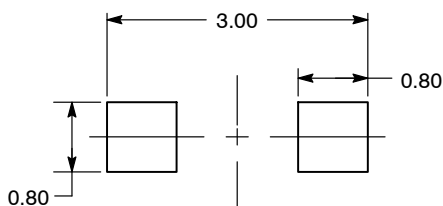


SIDE VIEW



BOTTOM VIEW

RECOMMENDED SOLDERING FOOTPRINT*



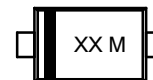
DIMENSION: MILLIMETERS

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS INCLUDES LEAD FINISH.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS	
	MIN	MAX
A	0.90	1.08
A1	---	0.10
b	0.50	0.70
c	0.10	0.25
D	2.00	2.20
E	1.30	1.60
HE	2.40	2.80
L	0.35	0.65

GENERIC MARKING DIAGRAM*




XX = Specific Device Code
M Date Code

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present.

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

DOCUMENT NUMBER:	98AON03742G	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	SOD-323FL	PAGE 1 OF 1

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.

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 owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. 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. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor 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. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor 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 ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor 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 ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor 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

ON Semiconductor Website: 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