

### **Zener Voltage Regulators**

250 mW SOT-23 Surface Mount

### BZX84BxxxLT1G, BZX84CxxxLT1G Series, SZBZX84BxxxLT1G, SZBZX84CxxxLT1G Series

This series of Zener diodes is offered in the convenient, surface mount plastic SOT-23 package. These devices are designed to provide voltage regulation with minimum space requirement. They are well suited for applications such as cellular phones, hand held portables, and high density PC boards.

#### **Features**

- 250 mW Rating on FR-4 or FR-5 Board
- Zener Breakdown Voltage Range 2.4 V to 75 V
- Package Designed for Optimal Automated Board Assembly
- Small Package Size for High Density Applications
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- Tight Tolerance Series Available (See Page 4)
- 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 and are RoHS Compliant

#### **Mechanical Characteristics**

CASE: Void-free, transfer-molded, thermosetting plastic case

FINISH: Corrosion resistant finish, easily Solderable

**MAXIMUM CASE TEMPERATURE FOR SOLDERING PURPOSES:** 

260°C for 10 Seconds

**POLARITY:** Cathode indicated by polarity band

FLAMMABILITY RATING: UL 94 V-0



SOT-23 CASE 318 STYLE 8



#### **MARKING DIAGRAM**



XXX = Device Code

M = Date Code\*

Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation may vary depending upon manufacturing location.

#### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
BZX84CxxxLT1G	SOT-23 (Pb-Free)	3,000 / Tape & Reel
SZBZX84CxxxLT1G	SOT-23 (Pb-Free)	3,000 / Tape & Reel
BZX84CxxxLT3G	SOT-23 (Pb-Free)	10,000 / Tape & Reel
SZBZX84CxxxLT3G	SOT-23 (Pb-Free)	10,000 / Tape & Reel
BZX84BxxxLT1G	SOT-23 (Pb-Free)	3,000 / Tape & Reel
SZBZX84BxxxLT1G	SOT-23 (Pb-Free)	3,000 / Tape & Reel
BZX84BxxxLT3G	SOT-23 (Pb-Free)	10,000 / Tape & Reel
SZBZX84BxxxLT3G	SOT-23 (Pb-Free)	10,000 / Tape & Reel

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

#### DEVICE MARKING INFORMATION

See specific marking information in the device marking column of the Electrical Characteristics table on page 3 of this data sheet.

<sup>\*</sup>For additional information on our Pb-Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

#### **MAXIMUM RATINGS**

Rating	Symbol	Max	Unit
Total Power Dissipation on FR-5 Board,	P <sub>D</sub>		
(Note 1) @ T <sub>A</sub> = 25°C		250	mW
Derated above 25°C		2.0	mW/°C
Thermal Resistance, Junction-to-Ambient	$R_{ hetaJA}$	500	°C/W
Total Power Dissipation on Alumina	P <sub>D</sub>		
Substrate, (Note 2) @ T <sub>A</sub> = 25°C		300	mW
Derated above 25°C		2.4	mW/°C
Thermal Resistance, Junction-to-Ambient	$R_{ hetaJA}$	417	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-65 to +150	°C

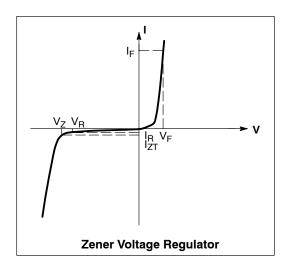
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

- 1. FR-5 = 1.0 X 0.75 X 0.62 in.
- 2. Alumina =  $0.4 \times 0.3 \times 0.024$  in., 99.5% alumina.

#### **ELECTRICAL CHARACTERISTICS**

(Pinout: 1-Anode, 2-No Connection, 3-Cathode) ( $T_A = 25^{\circ}C$  unless otherwise noted,  $V_F = 0.90$  V Max. @  $I_F = 10$  mA)

Symbol	Parameter
V <sub>Z</sub>	Reverse Zener Voltage @ I <sub>ZT</sub>
I <sub>ZT</sub>	Reverse Current
Z <sub>ZT</sub>	Maximum Zener Impedance @ I <sub>ZT</sub>
I <sub>R</sub>	Reverse Leakage Current @ V <sub>R</sub>
V <sub>R</sub>	Reverse Voltage
lF	Forward Current
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub>
ΘVZ	Maximum Temperature Coefficient of V <sub>Z</sub>
С	Max. Capacitance @ V <sub>R</sub> = 0 and f = 1 MHz



#### ELECTRICAL CHARACTERISTICS - BZX84CxxxLT1 SERIES (STANDARD TOLERANCE)

(Pinout: 1-Anode, 2-No Connection, 3-Cathode) ( $T_A = 25^{\circ}C$  unless otherwise noted,  $V_F = 0.90$  V Max. @  $I_F = 10$  mA) (Devices listed in **bold, italic** are **onsemi** Preferred devices.)

Device*   Device*   Min   Nom   Max   Part   SmA   Min   Max   Part   Min   Max   Part   SmA   Min   Max   Part   Part   Part   Min   Max   Part   Min   Max   Part   Part   Part   Min   Max   Part   Part   Part   Part   Min   Max   Part   Part	C (pF) @ VR = 0 f = 1 MHz 450 450 450 450 450 450 450 450
BZX84C2V7LT1G         Z12         2.5         2.7         2.9         100         1.9         2.4         600         3         3.6         50         20         1         -3.5         0           BZX84C3V0LT1G         Z13         2.8         3         3.2         95         2.1         2.7         600         3.3         3.9         50         10         1         -3.5         0           BZX84C3V3LT1G         Z14         3.1         3.3         3.5         95         2.3         2.9         600         3.6         4.2         40         5         1         -3.5         0           BZX84C3V6LT1G         Z15         3.4         3.6         3.8         90         2.7         3.3         600         3.9         4.5         40         5         1         -3.5         0           BZX84C3V9LT1G         Z16         3.7         3.9         4.1         90         2.9         3.5         600         4.1         4.7         30         3         1         -3.5         0           BZX84C4V3LT1G         W9         4         4.3         4.6         90         3.3         4         600         4.4         5.1 <td< th=""><th>450 450 450 450 450 450 260 225 200 185 155</th></td<>	450 450 450 450 450 450 260 225 200 185 155
BZX84C3V0LT1G         Z13         2.8         3         3.2         95         2.1         2.7         600         3.3         3.9         50         10         1         -3.5         0           BZX84C3V3LT1G         Z14         3.1         3.3         3.5         95         2.3         2.9         600         3.6         4.2         40         5         1         -3.5         0           BZX84C3V9LT1G         Z15         3.4         3.6         3.8         90         2.7         3.3         600         3.9         4.5         40         5         1         -3.5         0           BZX84C3V9LT1G         Z16         3.7         3.9         4.1         90         2.9         3.5         600         4.1         4.7         30         3         1         -3.5         -2.5           BZX84C4V3LT1G         W9         4         4.3         4.6         90         3.3         4         600         4.4         5.1         30         3         1         -3.5         0           BZX84C4V7LT1/T3G         Z1         4.4         4.7         5         80         3.7         4.7         500         4.5         5.4	450 450 450 450 450 260 225 200 185 155
BZX84C3V3LTIG         Z14         3.1         3.3         3.5         95         2.3         2.9         600         3.6         4.2         40         5         1         -3.5         0           BZX84C3V9LTIG         Z16         3.7         3.9         4.1         90         2.9         3.5         600         4.1         4.7         30         3         1         -3.5         -2.5           BZX84C4V3LTIG         W9         4         4.3         4.6         90         3.3         4         600         4.4         5.1         30         3         1         -3.5         0           BZX84C4V7LT1/T3G         Z1         4.4         4.7         5         80         3.7         4.7         500         4.5         5.4         15         3         2         -3.5         0.2           BZX84C5V1LT1/T3G         Z2         4.8         5.1         5.4         60         4.2         5.3         480         5         5.9         15         2         2         -2.7         1.2           BZX84C5V6LT1/T3G         Z3         5.2         5.6         6         40         4.8         6         400         5.8         6.8	450 450 450 450 260 225 200 185 155
BZX84C3V6LT1G         Z15         3.4         3.6         3.8         90         2.7         3.3         600         3.9         4.5         40         5         1         -3.5         0           BZX84C3V9LT1G         Z16         3.7         3.9         4.1         90         2.9         3.5         600         4.1         4.7         30         3         1         -3.5         -2.5           BZX84C4V3LT1G         W9         4         4.3         4.6         90         3.3         4         600         4.4         5.1         30         3         1         -3.5         0           BZX84C4V7LT1/T3G         Z1         4.4         4.7         5         80         3.7         4.7         500         4.5         5.4         15         3         2         -3.5         0.2           BZX84C5V1LT1/T3G         Z2         4.8         5.1         5.4         60         4.2         5.3         480         5         5.9         15         2         2         -2.7         1.2           BZX84C6V2LT1/T3G         Z3         5.2         5.6         6         40         4.8         6         400         5.8         6.8	450 450 450 260 225 200 185 155
BZX84C3V9LT1G         Z16         3.7         3.9         4.1         90         2.9         3.5         600         4.1         4.7         30         3         1         -3.5         -2.5           BZX84C4V3LT1G         W9         4         4.3         4.6         90         3.3         4         600         4.4         5.1         30         3         1         -3.5         0           BZX84C4V7LT1/T3G         Z1         4.4         4.7         5         80         3.7         4.7         500         4.5         5.4         15         3         2         -3.5         0.2           BZX84C5V1LT1/T3G         Z2         4.8         5.1         5.4         60         4.2         5.3         480         5         5.9         15         2         2         -2.7         1.2           BZX84C5V6LT1/T3G         Z3         5.2         5.6         6         40         4.8         6         400         5.2         6.3         10         1         2         -2.0         2.5           BZX84C6V2LT1/T3G         Z4         5.8         6.2         6.6         10         5.6         6.6         150         5.8         6.8	450 450 260 225 200 185 155
BZX84C4V3LT1G         W9         4         4.3         4.6         90         3.3         4         600         4.4         5.1         30         3         1         -3.5         0           BZX84C4V7LT1/T3G         Z1         4.4         4.7         5         80         3.7         4.7         500         4.5         5.4         15         3         2         -3.5         0.2           BZX84C5V1LT1/T3G         Z2         4.8         5.1         5.4         60         4.2         5.3         480         5         5.9         15         2         2         -2.7         1.2           BZX84C5V6LT1/T3G         Z3         5.2         5.6         6         40         4.8         6         400         5.2         6.3         10         1         2         -2.0         2.5           BZX84C6V2LT1/T3G         Z4         5.8         6.2         6.6         10         5.6         6.6         150         5.8         6.8         6         3         4         0.4         3.7           BZX84C6V8LT1/T3G         Z5         6.4         6.8         7.2         15         6.3         7.2         80         6.4         7.4	450 260 225 200 185 155 140
BZX84C4V7LT1/T3G         Z1         4.4         4.7         5         80         3.7         4.7         500         4.5         5.4         15         3         2         -3.5         0.2           BZX84C5V1LT1/T3G         Z2         4.8         5.1         5.4         60         4.2         5.3         480         5         5.9         15         2         2         -2.7         1.2           BZX84C5V6LT1/T3G         Z3         5.2         5.6         6         40         4.8         6         400         5.2         6.3         10         1         2         -2.0         2.5           BZX84C6V2LT1/T3G         Z4         5.8         6.2         6.6         10         5.6         6.6         150         5.8         6.8         6         3         4         0.4         3.7           BZX84C6V8LT1/T3G         Z5         6.4         6.8         7.2         15         6.3         7.2         80         6.4         7.4         6         2         4         1.2         4.5           BZX84C7V5LT1G         Z6         7         7.5         7.9         15         6.9         7.9         80         7         8	260 225 200 185 155 140
BZX84C5V1LT1/T3G         Z2         4.8         5.1         5.4         60         4.2         5.3         480         5         5.9         15         2         2         -2.7         1.2           BZX84C5V6LT1/T3G         Z3         5.2         5.6         6         40         4.8         6         400         5.2         6.3         10         1         2         -2.0         2.5           BZX84C6V2LT1/T3G         Z4         5.8         6.2         6.6         10         5.6         6.6         150         5.8         6.8         6         3         4         0.4         3.7           BZX84C6V8LT1/T3G         Z5         6.4         6.8         7.2         15         6.3         7.2         80         6.4         7.4         6         2         4         1.2         4.5           BZX84C7V5LT1G         Z6         7         7.5         7.9         15         6.9         7.9         80         7         8         6         1         5         2.5         5.3           BZX84C8V2LT1G         Z7         7.7         8.2         8.7         15         7.6         8.7         80         7.7         8.8 <t< td=""><td>225 200 185 155 140</td></t<>	225 200 185 155 140
BZX84C5V6LT1/T3G         Z3         5.2         5.6         6         40         4.8         6         400         5.2         6.3         10         1         2         -2.0         2.5           BZX84C6V2LT1/T3G         Z4         5.8         6.2         6.6         10         5.6         6.6         150         5.8         6.8         6         3         4         0.4         3.7           BZX84C6V8LT1/T3G         Z5         6.4         6.8         7.2         15         6.3         7.2         80         6.4         7.4         6         2         4         1.2         4.5           BZX84C7V5LT1G         Z6         7         7.5         7.9         15         6.9         7.9         80         7         8         6         1         5         2.5         5.3           BZX84C8V2LT1G         Z7         7.7         8.2         8.7         15         7.6         8.7         80         7.7         8.8         6         0.7         5         3.2         6.2	200 185 155 140
BZX84C6V2LT1/T3G         Z4         5.8         6.2         6.6         10         5.6         6.6         150         5.8         6.8         6         3         4         0.4         3.7           BZX84C6V8LT1/T3G         Z5         6.4         6.8         7.2         15         6.3         7.2         80         6.4         7.4         6         2         4         1.2         4.5           BZX84C7V5LT1G         Z6         7         7.5         7.9         15         6.9         7.9         80         7         8         6         1         5         2.5         5.3           BZX84C8V2LT1G         Z7         7.7         8.2         8.7         15         7.6         8.7         80         7.7         8.8         6         0.7         5         3.2         6.2	185 155 140
BZX84C6V8LT1/T3G         Z5         6.4         6.8         7.2         15         6.3         7.2         80         6.4         7.4         6         2         4         1.2         4.5           BZX84C7V5LT1G         Z6         7         7.5         7.9         15         6.9         7.9         80         7         8         6         1         5         2.5         5.3           BZX84C8V2LT1G         Z7         7.7         8.2         8.7         15         7.6         8.7         80         7.7         8.8         6         0.7         5         3.2         6.2	155 140
BZX84C7V5LT1G Z6 7 7.5 7.9 15 6.9 7.9 80 7 8 6 1 5 2.5 5.3 BZX84C8V2LT1G Z7 7.7 8.2 8.7 15 7.6 8.7 80 7.7 8.8 6 0.7 5 3.2 6.2	140
BZX84C8V2LT1G Z7 7.7 8.2 8.7 15 7.6 8.7 80 7.7 8.8 6 0.7 5 3.2 6.2	
	135
BZX84C9V1LT1/T3G Z8 8.5 9.1 9.6 15 8.4 9.6 100 8.5 9.7 8 0.5 6 3.8 7.0	
	130
BZX84C10LT1G Z9 9.4 10 10.6 20 9.3 10.6 150 9.4 10.7 10 0.2 7 4.5 8.0	130
BZX84C11LT1G Y1 10.4 11 11.6 20 10.2 11.6 150 10.4 11.8 10 0.1 8 5.4 9.0	130
BZX84C12LT1G Y2 11.4 12 12.7 25 11.2 12.7 150 11.4 12.9 10 0.1 8 6.0 10.0	130
BZX84C13LT1G Y3 12.4 13 14.1 30 12.3 14 170 12.5 14.2 15 0.1 8 7.0 11.0	120
BZX84C15LT1/T3G Y4 13.8 15 15.6 30 13.7 15.5 200 13.9 15.7 20 0.05 10.5 9.2 13.0	110
BZX84C16LT1G Y5 15.3 16 17.1 40 15.2 17 200 15.4 17.2 20 0.05 11.2 10.4 14.0	105
BZX84C18LT1/T3G Y6 16.8 18 19.1 45 16.7 19 225 16.9 19.2 20 0.05 12.6 12.4 16.0	100
BZX84C20LT1G Y7 18.8 20 21.2 55 18.7 21.1 225 18.9 21.4 20 0.05 14 14.4 18.0	85
BZX84C22LT1G Y8 20.8 22 23.3 55 20.7 23.2 250 20.9 23.4 25 0.05 15.4 16.4 20.0	85
BZX84C24LT1G Y9 22.8 24 25.6 70 22.7 25.5 250 22.9 25.7 25 0.05 16.8 18.4 22.0	80
V <sub>Z2</sub> Below Max Reverse $\theta_{VZ}$	
VZ1 Below         @ IZT2 = 0.1 m-         VZ3 Below         Leakage         (mV/k) Below           @ IZT1 = 2 mA         ZZT1         A         ZZT2         @ IZT3 = 10 mA         ZZT3         Current         @ IZT1 = 2 mA	
Device   Device   Device   Min   Nom   Max   2 mA   Min   Max   0.5 mA   Min   Max   10 mA   μA   (V)   Min   Max   M	C (pF) @ V <sub>R</sub> = 0 f = 1 MHz
BZX84C27LT1G Y10 25.1 27 28.9 80 25 28.9 300 25.2 29.3 45 0.05 18.9 21.4 25.3	70
BZX84C30LT1G Y11 28 30 32 80 27.8 32 300 28.1 32.4 50 0.05 21 24.4 29.4	70
BZX84C33LT1/T3G Y12 31 33 35 80 30.8 35 325 31.1 35.4 55 0.05 23.1 27.4 33.4	70
BZX84C36LT1G Y13 34 36 38 90 33.8 38 350 34.1 38.4 60 0.05 25.2 30.4 37.4	70
BZX84C39LT1G Y14 37 39 41 130 36.7 41 350 37.1 41.5 70 0.05 27.3 33.4 41.2	45
BZX84C43LT1G Y15 40 43 46 150 39.7 46 375 40.1 46.5 80 0.05 30.1 37.6 46.6	40
BZX84C47LT1G Y16 44 47 50 170 43.7 50 375 44.1 50.5 90 0.05 32.9 42.0 51.8	40
BZX84C51LT1G Y17 48 51 54 180 47.6 54 400 48.1 54.6 100 0.05 35.7 46.6 57.2	40
BZX84C56LT1G Y18 52 56 60 200 51.5 60 425 52.1 60.8 110 0.05 39.2 52.2 63.8	40
BZX84C62LT1G Y19 58 62 66 215 57.4 66 450 58.2 67 120 0.05 43.4 58.8 71.6	35
BZX84C68LT1G Y20 64 68 72 240 63.4 72 475 64.2 73.2 130 0.05 47.6 65.6 79.8	35
BZX84C75LT1G Y21 70 75 79 255 69.4 79 500 70.3 80.2 140 0.05 52.5 73.4 88.6	35

<sup>3.</sup> Zener voltage is measured with a pulse test current  $I_Z$  at an ambient temperature of 25°C.

<sup>\*</sup>Includes SZ-prefix devices where applicable.

#### **ELECTRICAL CHARACTERISTICS – BZX84BxxxL (Tight Tolerance Series)**

(Pinout: 1-Anode, 2-No Connection, 3-Cathode) ( $T_A = 25^{\circ}C$  unless otherwise noted,  $V_F = 0.90 \text{ V}$  Max. @  $I_F = 10 \text{ mA}$ )

		V- (Vo	lts) @ I <sub>7T</sub>	= 5 mA	Z <sub>ZT</sub> (Ω) @ I <sub>ZT</sub> = 5 mA	Max Rev Leaka Curre	ge	θvz (mV/k)		
	Device	-2 (	(Note 4)		(Note 4)	I <sub>R</sub>	$V_R$		= 5 mA	C (pF) @ V <sub>B</sub> =0,
Device	Marking	Min	Nom	Max	Max	μΑ	Volts	Min	Max	f = 1 MHz
BZX84B3V3LT1G	T2A	3.23	3.3	3.37	95	5	1	-3.5	0	450
BZX84B4V7LT1G	T10	4.61	4.7	4.79	80	3	2	-3.5	0.2	260
BZX84B5V1LT1G	T11	5.00	5.1	5.20	60	2	2	-2.7	1.2	225
BZX84B5V6LT1G	T12	5.49	5.6	5.71	40	1	2	-2	2.5	200
BZX84B6V2LT1G	T13	6.08	6.2	6.32	10	3	4	0.4	3.7	185
BZX84B6V8LT1G	T14	6.66	6.8	6.94	15	2	4	1.2	4.5	155
BZX84B7V5LT1G	T15	7.35	7.5	7.65	15	1	5	2.5	5.3	140
BZX84B8V2LT1G	T16	8.04	8.2	8.36	15	0.7	5	3.2	6.2	135
BZX84B9V1LT1G, T3G	T17	8.92	9.1	9.28	15	0.5	6	3.8	7	130
BZX84B10LT1G	T2E	9.8	10	10.2	20	0.2	7	4.5	8	130
BZX84B12LT1G	T18	11.8	12	12.2	25	0.1	8	6	10	130
BZX84B15LT1G	T22	14.7	15	15.3	30	0.05	10.5	9.2	13	110
BZX84B16LT1G	T19	15.7	16	16.3	40	0.05	11.2	10.4	14	105
BZX84B18LT1G	T20	17.6	18	18.4	45	0.05	12.6	12.4	16	100
BZX84B22LT1G	T24	21.6	22	22.4	55	0.05	15.4	16.4	20	85
BZX84B24LT1G	T25	23.5	24	24.5	70	0.05	16.8	18.4	22	80

<sup>4.</sup> Zener voltage is measured with a pulse test current  $I_Z$  at an ambient temperature of 25°C.

#### **ELECTRICAL CHARACTERISTICS - BZX84BxxxL (Tight Tolerance Series)**

(Pinout: 1-Anode, 2-No Connection, 3-Cathode) ( $T_A = 25^{\circ}C$  unless otherwise noted,  $V_F = 0.90 \text{ V Max.}$  @  $I_F = 10 \text{ mA}$ )

		V- (Vo	lts) @ I <sub>ZT</sub>	- 2 mA	Z <sub>ZT</sub> (Ω) @ I <sub>ZT</sub> = 2 mA	Max Rev Leaka Curre	ge	θ <sub>\</sub> (m\		
	Device	V2 (VO	(Note 4)	- 2 IIIA	(Note 4)	I <sub>R</sub>	V <sub>R</sub>	@ I <sub>ZT</sub> :		C (pF) @ V <sub>R</sub> =0,
Device*	Marking	Min	Nom	Max	Max	μ <b>A</b>	Volts	Min	Max	f = 1 MHz
BZX84B27LT1G	T27	26.5	27	27.5	80	0.05	18.9	21.4	25.3	70

<sup>\*</sup>Includes SZ-prefix devices where applicable.

#### **TYPICAL CHARACTERISTICS**

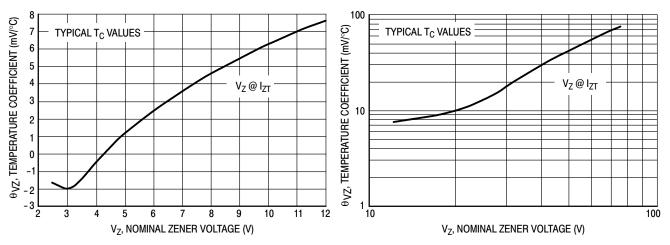


Figure 1. Temperature Coefficients (Temperature Range – 55°C to +150°C)

Figure 2. Temperature Coefficients (Temperature Range – 55°C to +150°C)

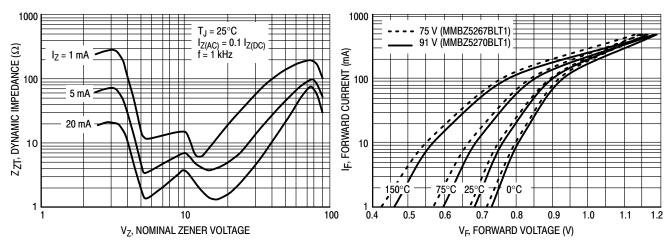


Figure 3. Effect of Zener Voltage on Zener Impedance

Figure 4. Typical Forward Voltage

#### **TYPICAL CHARACTERISTICS**

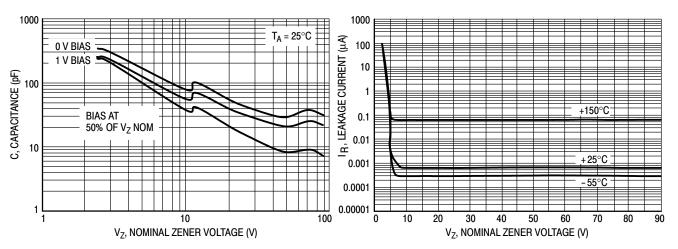


Figure 5. Typical Capacitance

Figure 6. Typical Leakage Current

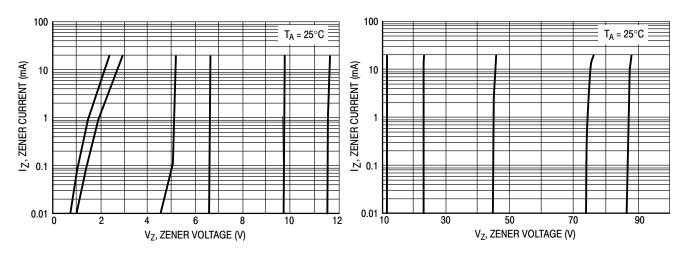


Figure 7. Zener Voltage versus Zener Current  $(V_Z Up to 12 V)$ 

Figure 8. Zener Voltage versus Zener Current (12 V to 91 V)

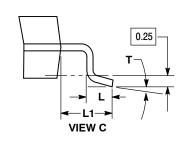


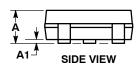
SOT-23 (TO-236) CASE 318-08 **ISSUE AS** 

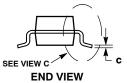
**DATE 30 JAN 2018** 

# SCALE 4:1 D

**TOP VIEW** 







#### **RECOMMENDED SOLDERING FOOTPRINT**



DIMENSIONS: MILLIMETERS

3. ANODE

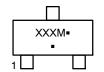
- 3X b

#### NOTES:

- NOTES:
  1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
  2. CONTROLLING DIMENSION: MILLIMETERS.
  3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH.
  MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL
- 4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

	М	ILLIMETE	RS		INCHES	
DIM	MIN	NOM	MAX	MIN	NOM	MAX
Α	0.89	1.00	1.11	0.035	0.039	0.044
A1	0.01	0.06	0.10	0.000	0.002	0.004
b	0.37	0.44	0.50	0.015	0.017	0.020
С	0.08	0.14	0.20	0.003	0.006	0.008
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
е	1.78	1.90	2.04	0.070	0.075	0.080
L	0.30	0.43	0.55	0.012	0.017	0.022
L1	0.35	0.54	0.69	0.014	0.021	0.027
HE	2.10	2.40	2.64	0.083	0.094	0.104
Т	0°		10°	0°		10°

#### **GENERIC MARKING DIAGRAM\***



XXX = Specific Device Code

= Date Code

= Pb-Free Package

\*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.

STYLE 1 THRU 5: CANCELLED	STYLE 6: PIN 1. BASE 2. EMITTER 3. COLLECTOR	STYLE 7: PIN 1. EMITTER 2. BASE 3. COLLECTOR	STYLE 8: PIN 1. ANODE 2. NO CONNECTION 3. CATHODE	ı	
STYLE 9:	STYLE 10:	STYLE 11:	STYLE 12:	STYLE 13:	STYLE 14:
PIN 1. ANODE	PIN 1. DRAIN	PIN 1. ANODE	PIN 1. CATHODE	PIN 1. SOURCE	PIN 1. CATHODE
2. ANODE	2. SOURCE	2. CATHODE	2. CATHODE	2. DRAIN	2. GATE
3. CATHODE	3. GATE	3. CATHODE-ANODE	3. ANODE	3. GATE	3. ANODE
STYLE 15:	STYLE 16:	STYLE 17: PIN 1. NO CONNECTION 2. ANODE 3. CATHODE	STYLE 18:	STYLE 19:	STYLE 20:
PIN 1. GATE	PIN 1. ANODE		PIN 1. NO CONNECTION	I PIN 1. CATHODE	PIN 1. CATHODE
2. CATHODE	2. CATHODE		2. CATHODE	2. ANODE	2. ANODE
3. ANODE	3. CATHODE		3. ANODE	3. CATHODE-ANODE	3. GATE
STYLE 21:	STYLE 22:	STYLE 23:	STYLE 24:	STYLE 25:	STYLE 26:
PIN 1. GATE	PIN 1. RETURN	PIN 1. ANODE	PIN 1. GATE	PIN 1. ANODE	PIN 1. CATHODE
2. SOURCE	2. OUTPUT	2. ANODE	2. DRAIN	2. CATHODE	2. ANODE
3. DRAIN	3. INPUT	3. CATHODE	3. SOURCE	3. GATE	3. NO CONNECTION
STYLE 27: PIN 1. CATHODE 2. CATHODE	STYLE 28: PIN 1. ANODE 2. ANODE				

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DESCRIPTION:	SOT-23 (TO-236)		PAGE 1 OF 1

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3. CATHODE

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