

Zener Voltage Regulators

500 mW SOD-323 Surface Mount

- We declare that the material of product compliance with RoHS requirements.

ORDERING INFORMATION

Device*	Package	Shipping
LM3Z5V1PT1G	SOD-323	3000/Tape&Reel
LM3Z5V1PT3G	SOD-323	10000/Tape&Reel

This Zener diode is packaged in a SOD-323 surface mount package that has a power dissipation of 500 mW. The LM3Z5V1PT1G is designed to provide voltage regulation protection and is especially attractive in situations where space is at a premium. It is well suited for applications such as cellular phones, hand held portables, and high density PC boards.

Specification Features:

- Steady State Power Rating of 500 mW
- Small Body Outline Dimensions: 0.067" x 0.049"(1.7 mm x 1.25 mm)
- Low Body Height: 0.035" (0.9 mm)
- Package Weight: 4.507 mg/unit
- ESD Rating of Class 3 (>16 kV) per Human Body Model
- Pb-Free package is available.

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

POLARITY: Cathode indicated by polarity band

FLAMMABILITY RATING: UL94 V-0

MOUNTING POSITION: Any

MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (Note 1.) @ TA = 25°C	P _D	500	mW
Junction and Storage Temperature Range	T _J , T _{stg}	-65 to+150	°C

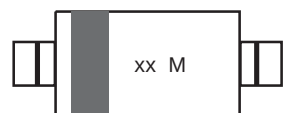
1. FR-4 Minimum Pad

LM3Z5V1PT1G



SOD-323

MARKING DIAGRAM



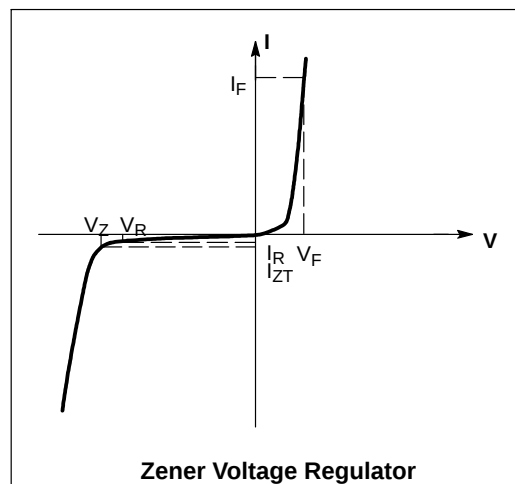
xx= Specific Device Code
M =Date Code



LM3Z5V1PT1G
ELECTRICAL CHARACTERISTICS

($T_A = 25^\circ\text{C}$ unless otherwise noted,
 $V_F = 0.9\text{ V Max. @ } I_F = 10\text{ mA}$ for all types)

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 $f = 1\text{ MHz}$



LM3Z5V1PT1G

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 0.9\text{ V Max.}$ @ $I_F = 10\text{ mA}$)

Device	Device Marking	Zener Voltage (Note 2.)				Zener Impedance			Leakage Current		θV_Z (mV/k) @ I_{ZT}		C @ $V_R = 0$ f = 1 MHz pF
		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	
LM3Z5V1PT1G	0A	4.8	5.1	5.4	5	60	800	0.5	2	2.0	-2.7	1.2	225

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

LM3Z5V1PT1G

Typical Characteristics

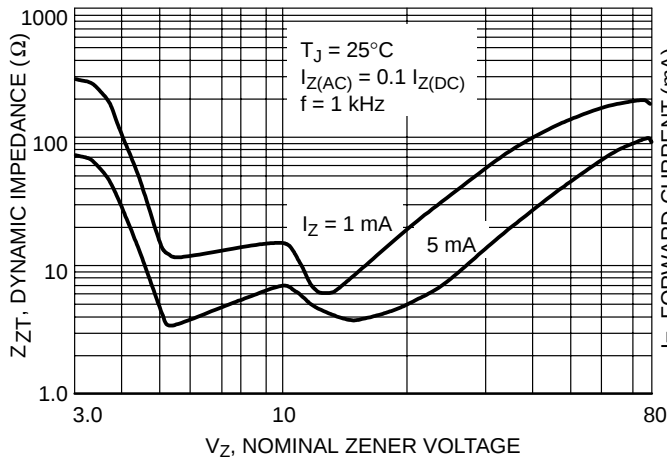


Figure 1. Effect of Zener Voltage on Zener Impedance

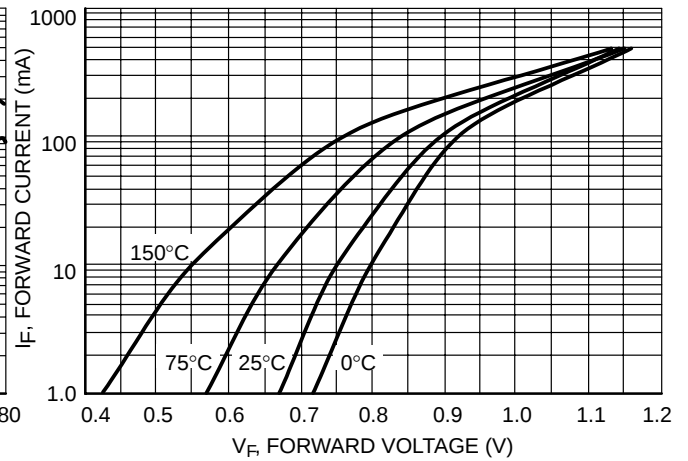


Figure 2. Typical Forward Voltage

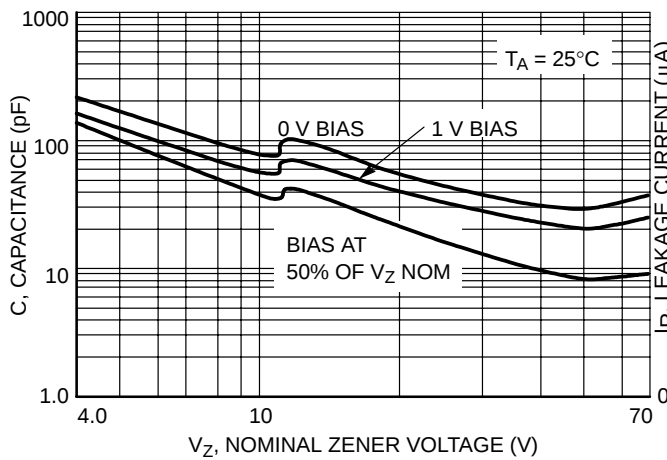


Figure 3. Typical Capacitance

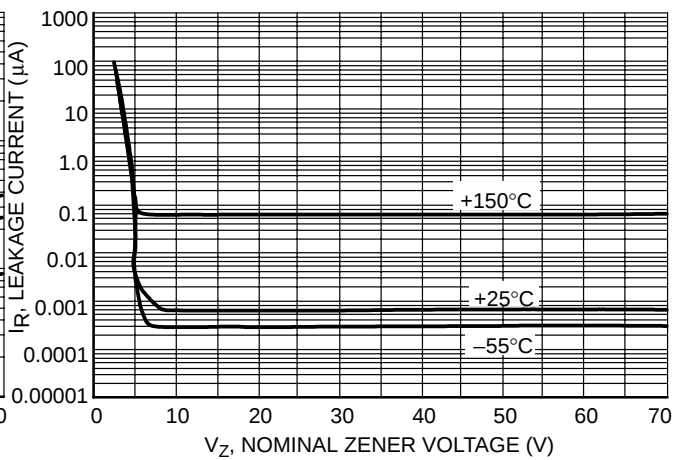
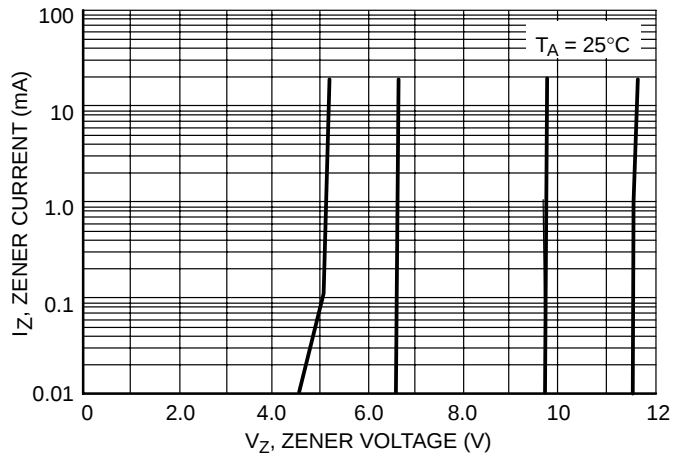
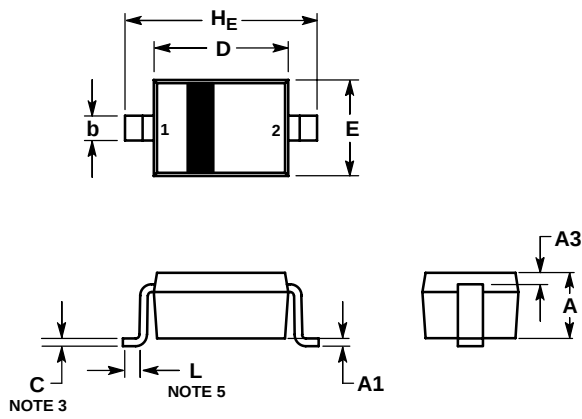


Figure 4. Typical Leakage Current

Typical Characteristics

**Figure 5. Zener Voltage versus Zener Current
(V_Z Up to 12 V)**

LM3Z5V1PT1G
PACKAGE DIMENSIONS
SOD-323

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DIMENSION L IS MEASURED FROM END OF RADIUS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.031	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A3	0.15 REF			0.006 REF		
b	0.25	0.32	0.4	0.010	0.012	0.016
C	0.089	0.12	0.177	0.003	0.005	0.007
D	1.60	1.70	1.80	0.062	0.066	0.070
E	1.15	1.25	1.35	0.045	0.049	0.053
L	0.08			0.003		
HE	2.30	2.50	2.70	0.090	0.098	0.105

SOLDERING FOOTPRINT*
