Zener Voltage Regulators

500 mW SOD–323 Surface Mount

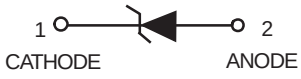
LM3Z5V1PT1G

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

SOD– 323

MARKING DIAGRAM

xx= Specific Device Code
M =Date Code



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

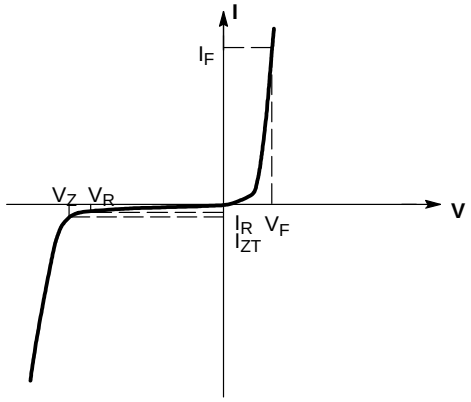
1. FR–4 Minimum Pad

LM3Z5V1PT1G

ELECTRICAL CHARACTERISTICS

(T_A = 25°C unless otherwise noted,
V_F = 0.9 V Max. @ I_F = 10 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 MHz



Zener Voltage Regulator

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted, V_F = 0.9 V Max. @ I_F = 10 mA)

Device	Device Marking	Zener Voltage (Note 2.) V_Z (Volts) Min	Nom	Max	@ I_{ZT} mA	Zener Impedance Z_{ZT} @ I_{ZT} Ω	Z_{ZK} @ I_{ZK} Ω	mA	Leakage Current I_R @ V_R μA	Volts	ΘV_Z (mV/k) @ I_{ZT} Min	Max	C @ V_R = 0 f = 1 MHz pF
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.

Typical Characteristics

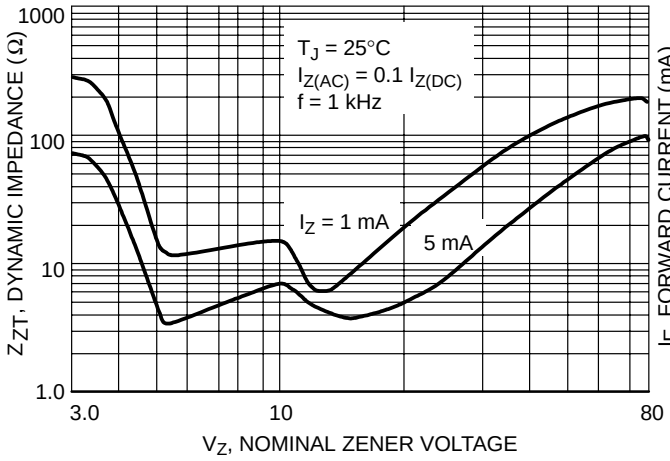


Figure 1. Effect of Zener Voltage on Zener Impedance

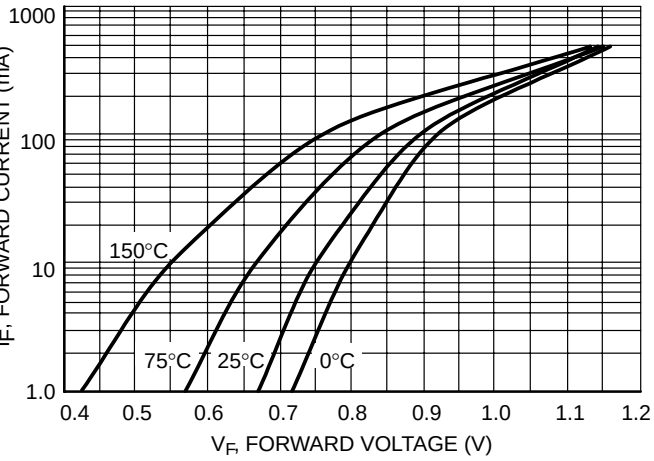


Figure 2. Typical Forward Voltage

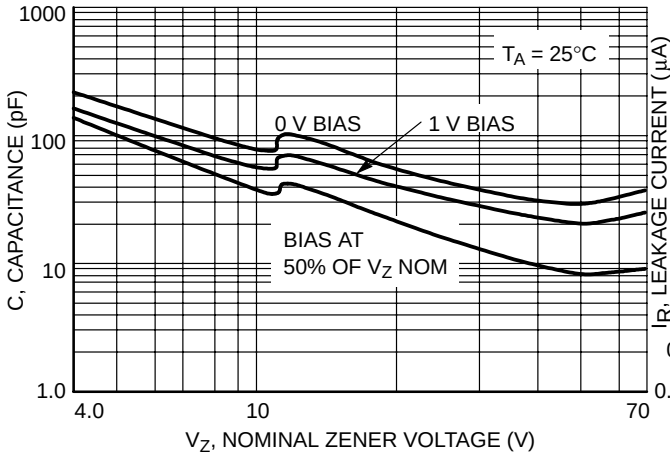


Figure 3. Typical Capacitance

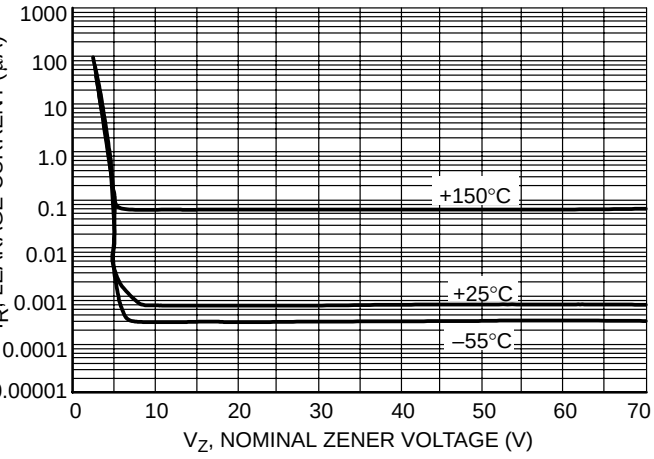


Figure 4. Typical Leakage Current

Typical Characteristics

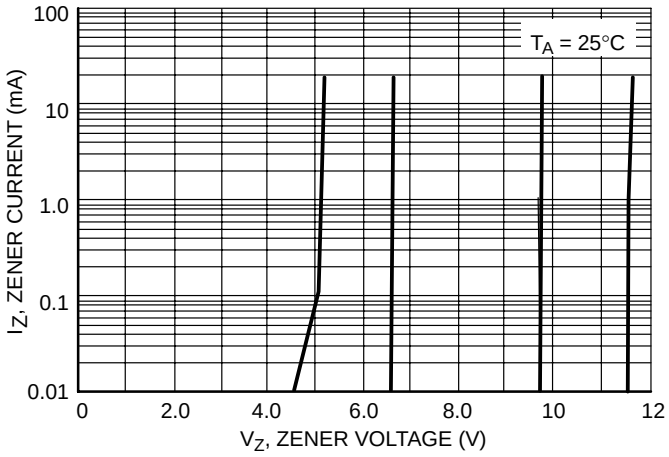
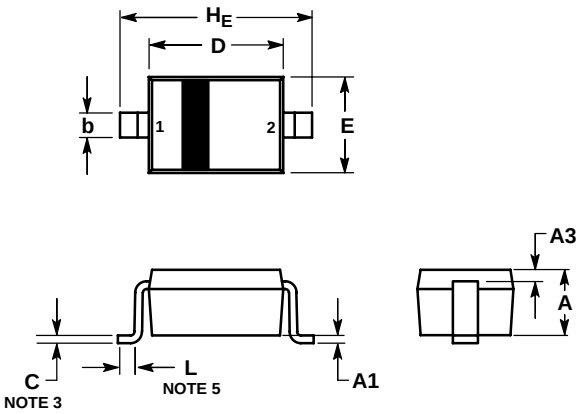


Figure 5. Zener Voltage versus Zener Current (V_Z Up to 12 V)

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.

	MILLIMETERS			INCHES		
DIM	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		
H_E	2.30	2.50	2.70	0.090	0.098	0.105

SOLDERING FOOTPRINT*