Zener Voltage Regulators

200 mW SOD-323 Surface Mount

LUDZS2.4BT1G Series
S-LUDZS2.4BT1G Series

This series of Zener diodes is packaged in a SOD–323 surface mount package that has a power dissipation of 200 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, and high density PC boards.

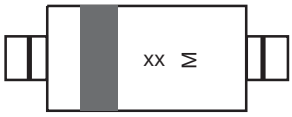


SOD– 323

Specification Features:

- High demand voltage range (3.6V-36V)
- Steady State Power Rating of 200 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 per Human Body Model
- Pb-Free package is available.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.
- We declare that the material of product compliance with RoHS requirements.

MARKING DIAGRAM



xx=Device Marking Code
M =Date Code



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

ORDERING INFORMATION

Device	Package	Shipping
LUDZS2.4BT1G Series	SOD-323	3000/Tape&Reel
LUDZS2.4BT3G Series	SOD-323	10000/Tape&Reel

*See specific marking table.

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

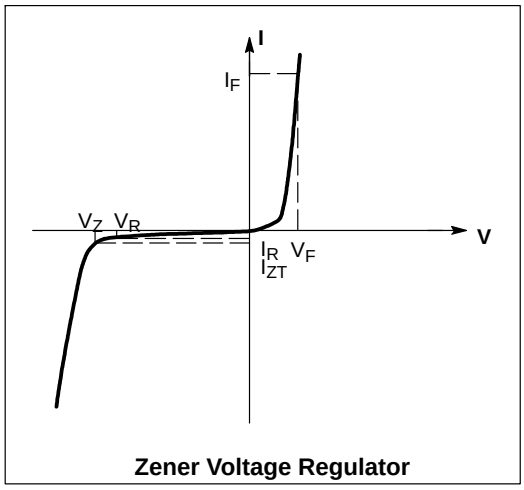
Parameter	Symbol	Limits	Unit
Power dissipation	P	200	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	635	°C/W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C
Operating temperature	Topr	–55 to +150	°C

LUDZS2.4BT1G Series , S-LUDZS2.4BT1G Series

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

LUDZS2.4BT1G Series , S-LUDZS2.4BT1G Series

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Device	Device Marking	Zener voltage			Operating resistance		Rising operating resistance		Reverse current	
		V_Z(V)			Z_Z(Ω)		Z_{zk}(Ω)		I_R(μA)	
		Min.	Max.	I_Z (mA)	Max.	I_Z (mA)	Max.	I_Z (mA)	Max.	V_R (V)
LUDZS2.4BT1G	22	2.430	2.630	5	100	5	1000	0.5	100	1.0
LUDZS2.7BT1G	32	2.690	2.910	5	110	5	1000	0.5	100	1.0
LUDZS3.0BT1G	42	3.010	3.220	5	120	5	1000	0.5	50	1.0
LUDZS3.3BT1G	52	3.320	3.530	5	120	5	1000	0.5	20	1.0
LUDZS3.6BT1G	62	3.600	3.845	5	100	5	1000	1.0	10	1.0
LUDZS3.9BT1G	72	3.890	4.160	5	100	5	1000	1.0	5	1.0
LUDZS4.3BT1G	82	4.170	4.430	5	100	5	1000	1.0	5	1.0
LUDZS4.7BT1G	92	4.550	4.750	5	100	5	800	0.5	2	1.0
LUDZS5.1BT1G	A2	4.980	5.200	5	80	5	500	0.5	2	1.5
LUDZS5.6BT1G	C2	5.490	5.730	5	60	5	200	0.5	1	2.5
LUDZS6.2BT1G	E2	6.060	6.330	5	60	5	100	0.5	1	3.0
LUDZS6.8BT1G	F2	6.650	6.930	5	40	5	60	0.5	0.5	3.5
LUDZS7.5BT1G	H2	7.280	7.600	5	30	5	60	0.5	0.5	4.0
LUDZS8.2BT1G	J2	8.020	8.360	5	30	5	60	0.5	0.5	5.0
LUDZS9.1BT1G	L2	8.850	9.230	5	30	5	60	0.5	0.5	6.0
LUDZS10BT1G	05	9.770	10.210	5	30	5	60	0.5	0.1	7.0
LUDZS11BT1G	15	10.760	11.220	5	30	5	60	0.5	0.1	8.0
LUDZS12BT1G	25	11.740	12.240	5	30	5	80	0.5	0.1	9.0
LUDZS13BT1G	35	12.910	13.490	5	37	5	80	0.5	0.1	10.0
LUDZS15BT1G	45	14.340	14.980	5	42	5	80	0.5	0.1	11.0
LUDZS16BT1G	55	15.850	16.510	5	50	5	80	0.5	0.1	12.0
LUDZS18BT1G	65	17.560	18.350	5	65	5	80	0.5	0.1	13.0
LUDZS20BT1G	75	19.520	20.390	5	85	5	100	0.5	0.1	15.0
LUDZS22BT1G	85	21.540	22.470	5	100	5	100	0.5	0.1	17.0
LUDZS24BT1G	95	23.720	24.780	5	120	5	120	0.5	0.1	19.0
LUDZS27BT1G	A5	26.190	27.530	5	150	5	150	0.5	0.1	21.0
LUDZS30BT1G	C5	29.190	30.690	5	200	5	200	0.5	0.1	23.0
LUDZS33BT1G	E5	32.150	33.790	5	250	5	250	0.5	0.1	25.0
LUDZS36BT1G	F5	35.070	36.870	5	300	5	300	0.5	0.1	27.0

Notes) 1. The Zener voltage (V_Z) is measured 40ms after power is supplied.
2. The operating resistances (Z_Z, Z_{zk}) are measured by superimposing a minute alternating current on the regulated current (I_Z).

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ELECTRICAL CHARACTERISTIC CURVES (Ta=25°C)

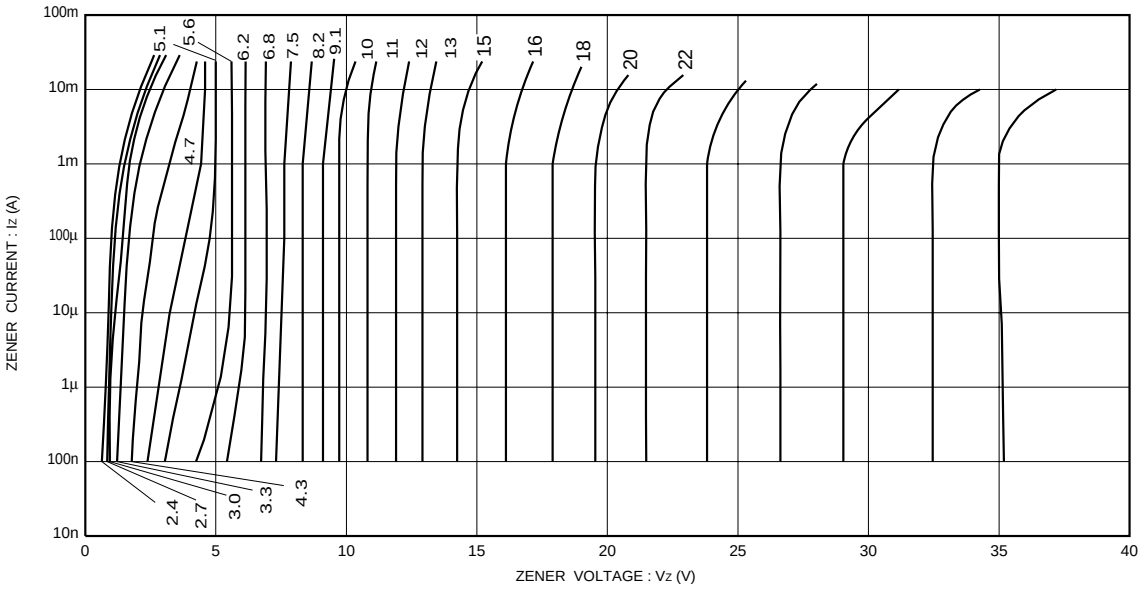


Fig.1 Zener voltage characteristics

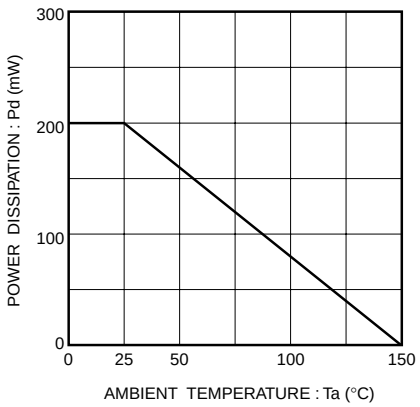


Fig.2 Derating curve

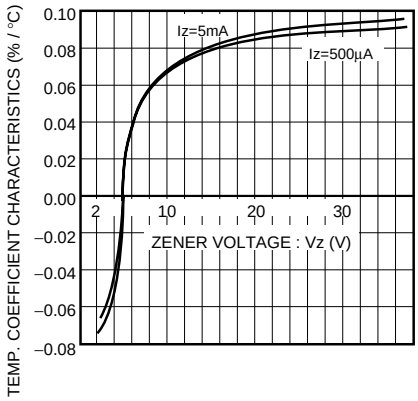
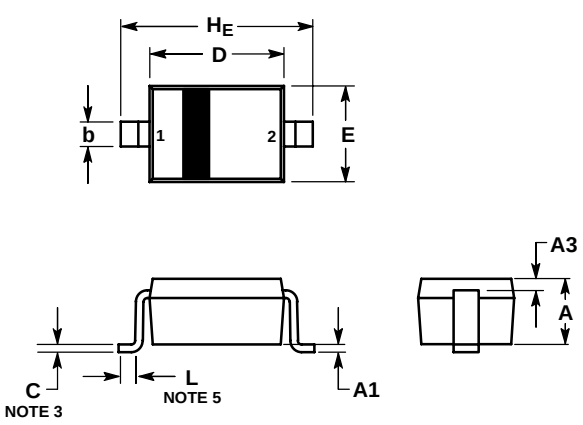


Fig.3 Zener voltage-temp. coefficient characteristics

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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*

