

SURFACE MOUNT SILICON ZENER DIODES

VOLTAGE 2.4 - 39 Volts

POWER 200 mWatts

PACKAGE SOT-323

FEATURES

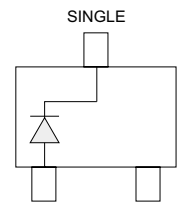
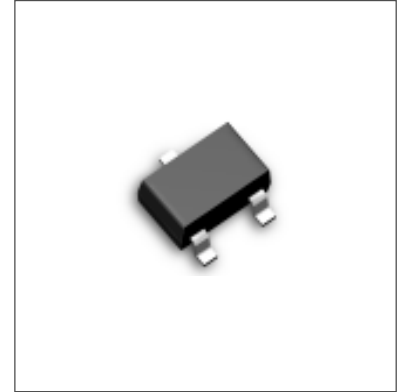
- Planar Die construction
- 200mW Power Dissipation
- Zener Voltages from 2.4V - 39V
- Ideally Suited for Automated Assembly Processes

MECHANICAL DATA

Case: SOT-323, Plastic

Terminals: Solderable per MIL-STD-202, Method 208

Approx. Weight: 0.008 gram



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Power Dissipation (Notes A) at 25°C	P_D	200	mW
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) (Notes B)	I_{FSM}	2.0	Amps
Operating Junction and Storage Temperature Range	T_J	-55 to +150	°C

NOTES:

A. Mounted on 5.0mm2(.013mm thick) land areas.

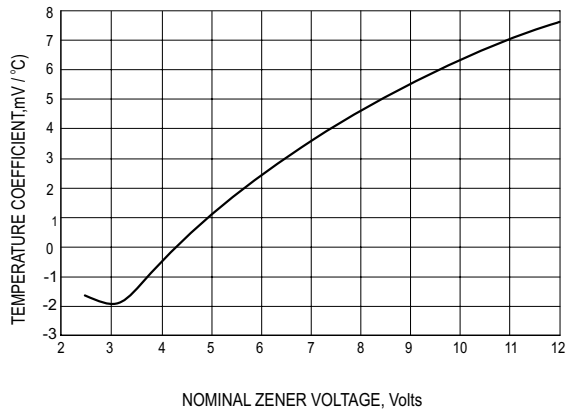
B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted) V_F=1.2V max, I_F=100mA for all types.

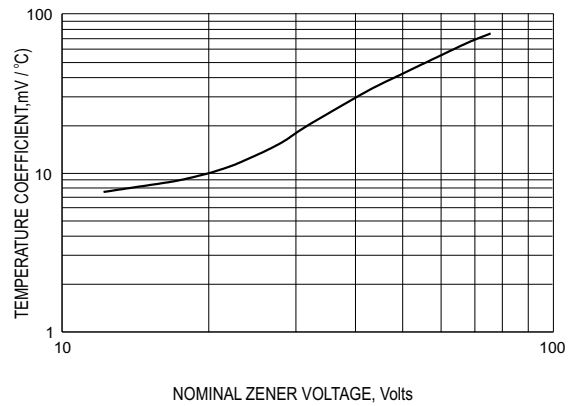
Part Number	Nominal Zener Voltage			Max. Zener Impedance				Max Reverse Leakage Current		Package
	V _Z @ I _{ZT}			Z _{ZT} @ I _{ZT}		Z _{ZK} @ I _{ZK}		I _R @ V _R		
	Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	μA	V	
200 mWatts Zener Diodes										
BZX84C2V4W	2.4	2.28	2.52	85	5	600	1	100	1	SOT-323
BZX84C2V7W	2.7	2.5	2.9	83	5	500	1	75	1	SOT-323
BZX84C3W	3	2.8	3.2	95	5	500	1	50	1	SOT-323
BZX84C3V3W	3.3	3.1	3.5	95	5	500	1	25	1	SOT-323
BZX84C3V6W	3.6	3.4	3.8	95	5	500	1	15	1	SOT-323
BZX84C3V9W	3.9	3.7	4.1	95	5	500	1	10	1	SOT-323
BZX84C4V3W	4.3	4	4.6	95	5	500	1	5.0	1	SOT-323
BZX84C4V7W	4.7	4.4	5	78	5	500	1	5.0	2	SOT-323
BZX84C5V1W	5.1	4.8	5.4	60	5	480	1	0.1	0.8	SOT-323
BZX84C5V6W	5.6	5.2	6	40	5	400	1	0.1	1	SOT-323
BZX84C6V2W	6.2	5.8	6.6	10	5	200	1	0.1	2	SOT-323
BZX84C6V8W	6.8	6.4	7.2	8	5	150	1	0.1	3	SOT-323
BZX84C7V5W	7.5	7	7.9	7	5	50	1	0.1	5	SOT-323
BZX84C8V2W	8.2	7.7	8.7	7	5	50	1	0.1	6	SOT-323
BZX84C9V1W	9.1	8.5	9.6	10	5	50	1	0.1	7	SOT-323
BZX84C10W	10	9.4	10.6	15	5	70	1	0.1	7.5	SOT-323
BZX84C11W	11	10.4	11.6	20	5	70	1	0.1	8.5	SOT-323
BZX84C12W	12	11.4	12.7	20	5	90	1	0.1	9	SOT-323
BZX84C13W	13	12.4	14.1	25	5	110	1	0.1	10	SOT-323
BZX84C15W	15	13.8	15.6	30	5	110	1	0.1	11	SOT-323
BZX84C16W	16	15.3	17.1	40	5	170	1	0.1	12	SOT-323
BZX84C18W	18	16.8	19.1	50	5	170	1	0.1	14	SOT-323
BZX84C20W	20	18.8	21.2	50	5	220	1	0.1	15	SOT-323
BZX84C22W	22	20.8	23.3	55	5	220	1	0.1	17	SOT-323
BZX84C24W	24	22.8	25.6	80	5	220	1	0.1	18	SOT-323
BZX84C27W	27	25.1	28.9	80	5	250	1	0.1	20	SOT-323
BZX84C30W	30	28	32	80	5	250	1	0.1	22.5	SOT-323
BZX84C33W	33	31	35	80	5	250	1	0.1	25	SOT-323
BZX84C36W	36	34	38	90	5	250	1	0.1	27	SOT-323
BZX84C39W	39	37	41	90	5	300	1	0.1	29	SOT-323

NOTE:

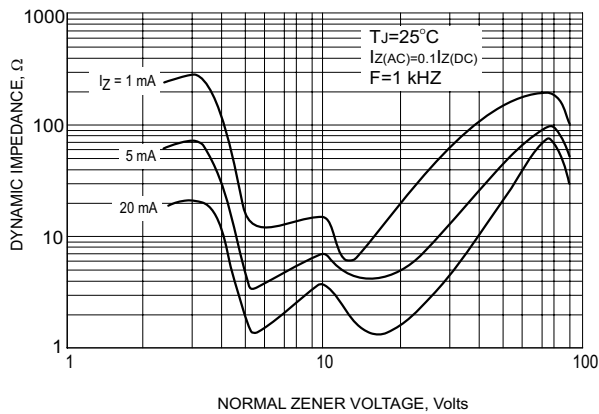
1. Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of ±5%.
2. Specials Available Include:
 - A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
 - B. Matched sets.
3. Zener Voltage (V_Z) Measurement. Guarantees the zener voltage when measured at 90 seconds while maintaining the lead temperature (T_L) at 30°C, from the diode body.
4. Zener Impedance (Z_Z) Derivation. The zener impedance is derived from the 60 cycle ac voltage, which results when an AC current having an rms value equal to 10% of the dc zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK}.
5. Surge Current (I_R) Non-Repetitive. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current, I_{ZT}, per JEDEC registration; however, actual device capability is as described in Figure 5.



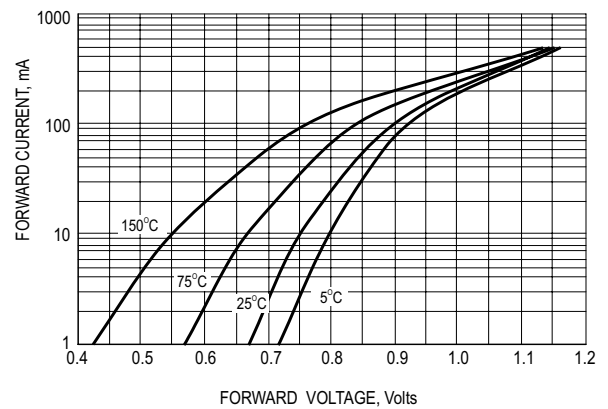
TYPICAL REVERSE CURRENT



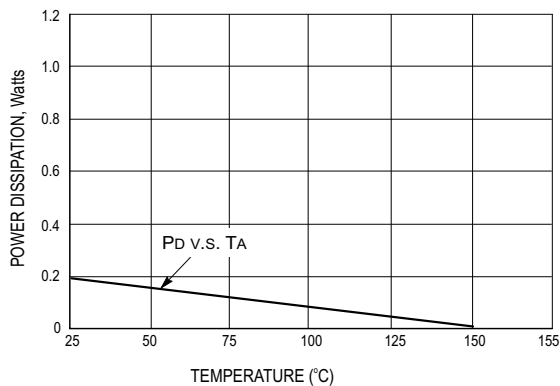
STEADY STATE POWER DERATING



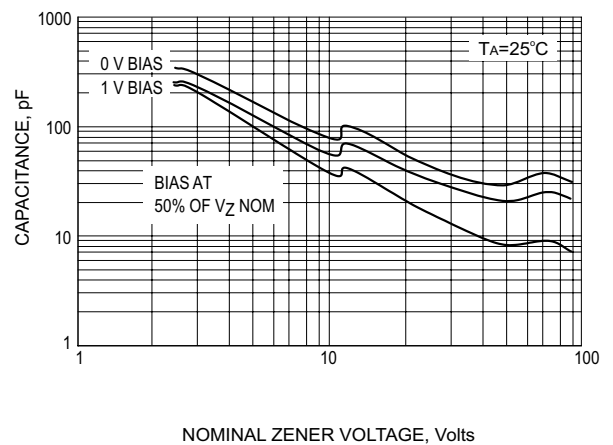
EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE



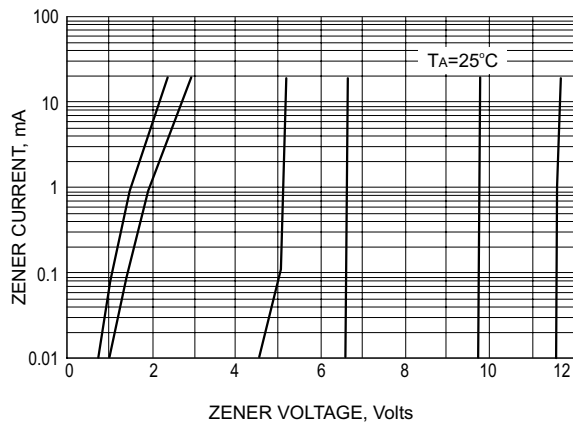
TYPICAL FORWARD VOLTAGE



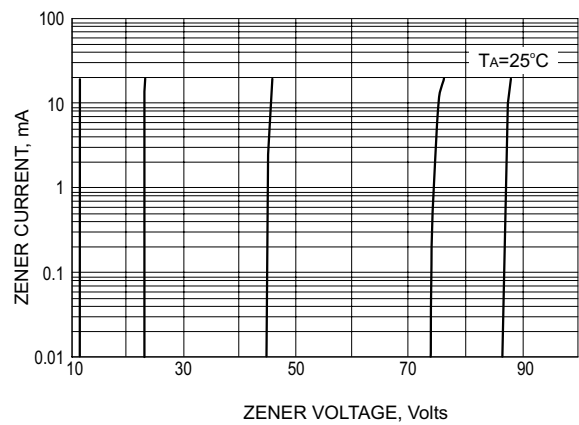
STEADY STATE POWER DERATING



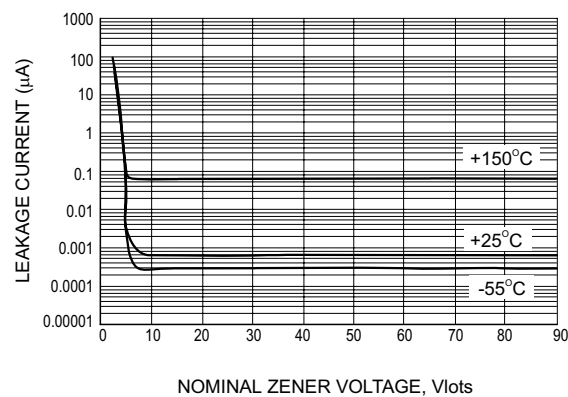
TYPICAL CAPACITANCE



ZENER VOLTAGE V.S. ZENER CURRENT

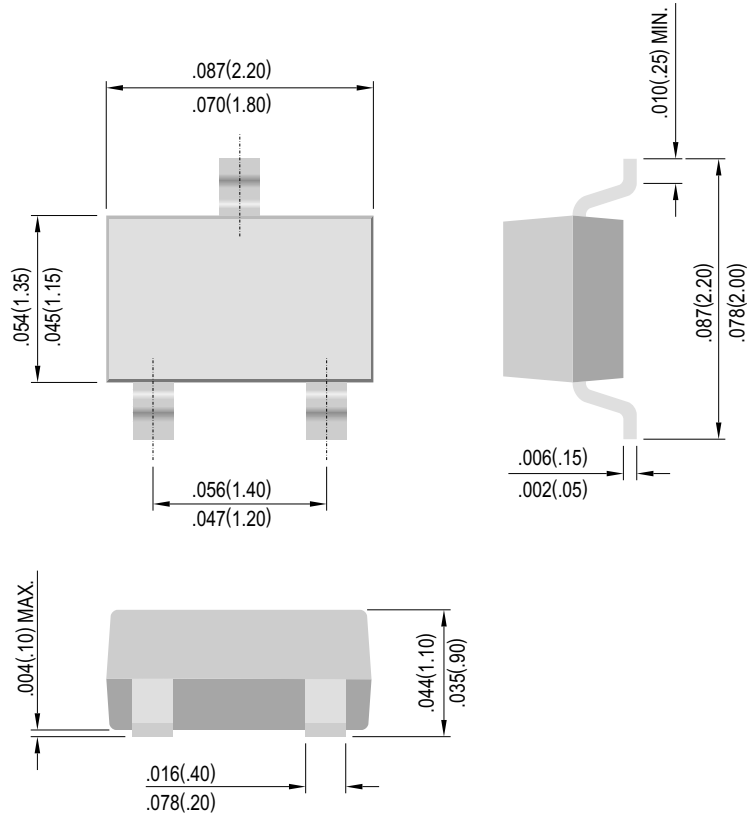


ZENER VOLTAGE V.S. ZENER CURRENT



TYPICAL LEAKAGE CURRENT

SOT-323



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