

SURFACE MOUNT SILICON ZENER DIODES

VOLTAGE 2.4 - 39 Volts

POWER 200 mWatts

PACKAGE SOT-323

FEATURES

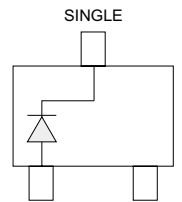
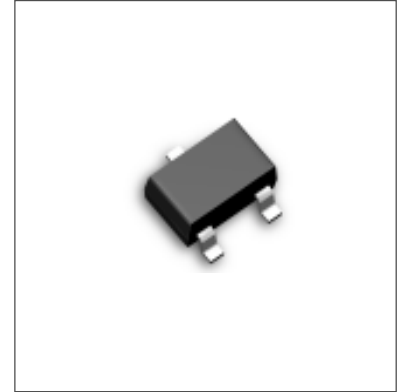
- Planar Die construction
- 200mW Power Dissipation
- Zener Voltages from 2.4V - 39V
- Ideally Suited for Automated Assembly Processes

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.

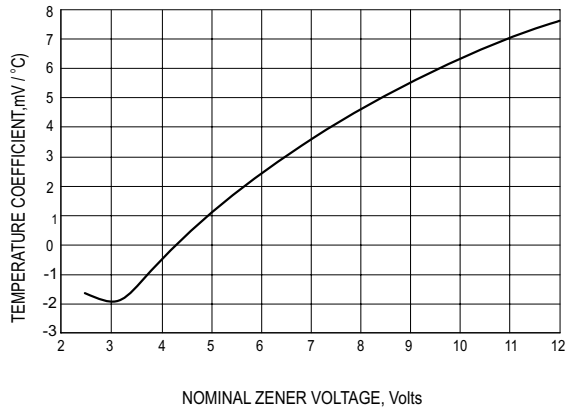
B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

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

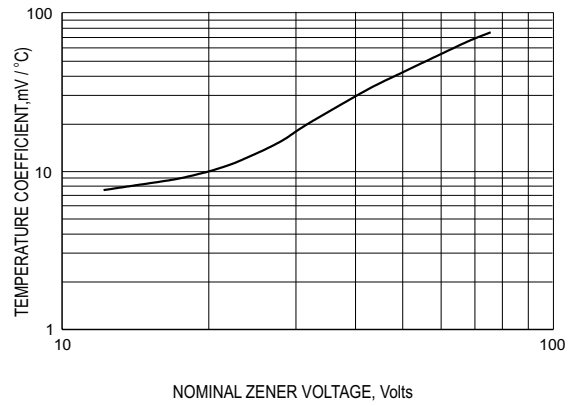
Part Number	Nominal Zener Voltage			Max. Zener Impedance				Max Reverse Leakage Current		Package
	V _Z @ I _{ZT}			Z _{zT} @ I _{ZT}		Z _{zK} @ I _{zK}		I _R @ V _R		
	Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	μA	V	
200 mWatts Zener Diodes										
MMBZ5221BW	2.4	2.28	2.52	30	20	1200	0.25	100	1	SOT-323
MMBZ5222BW	2.5	2.38	2.63	30	20	1250	0.25	100	1	SOT-323
MMBZ5223BW	2.7	2.57	2.84	30	20	1300	0.25	75	1	SOT-323
MMBZ5225BW	3	2.85	3.15	30	20	1600	0.25	50	1	SOT-323
MMBZ5226BW	3.3	3.14	3.47	28	20	1600	0.25	25	1	SOT-323
MMBZ5227BW	3.6	3.42	3.78	24	20	1700	0.25	15	1	SOT-323
MMBZ5228BW	3.9	3.71	4.1	23	20	1900	0.25	10	1	SOT-323
MMBZ5229BW	4.3	4.09	4.52	22	20	2000	0.25	5	1	SOT-323
MMBZ5230BW	4.7	4.47	4.94	19	20	1900	0.25	5	2	SOT-323
MMBZ5231BW	5.1	4.85	5.36	17	20	1600	0.25	5	2	SOT-323
MMBZ5232BW	5.6	5.32	5.88	11	20	1600	0.25	5	3	SOT-323
MMBZ5234BW	6.2	5.89	6.51	7	20	1000	0.25	5	4	SOT-323
MMBZ5235BW	6.8	6.46	7.14	5	20	750	0.25	3	5	SOT-323
MMBZ5236BW	7.5	7.13	7.88	6	20	500	0.25	3	6	SOT-323
MMBZ5237BW	8.2	7.79	8.61	8	20	500	0.25	3	6	SOT-323
MMBZ5239BW	9.1	8.65	9.56	10	20	600	0.25	3	6.5	SOT-323
MMBZ5240BW	10	9.5	10.5	17	20	600	0.25	3	8	SOT-323
MMBZ5241BW	11	10.45	11.55	22	20	600	0.25	3	8.4	SOT-323
MMBZ5242BW	12	11.4	12.6	30	20	600	0.25	2	9.1	SOT-323
MMBZ5243BW	13	12.35	13.65	13	9.5	600	0.25	1	9.9	SOT-323
MMBZ5245BW	15	14.25	15.75	16	8.5	600	0.25	0.5	11	SOT-323
MMBZ5246BW	16	15.2	16.8	17	7.8	600	0.25	0.1	12	SOT-323
MMBZ5248BW	18	17.1	18.9	21	7	600	0.25	0.1	14	SOT-323
MMBZ5250BW	20	19	21	25	6.2	600	0.25	0.1	15	SOT-323
MMBZ5251BW	22	20.9	23.1	29	5.6	600	0.25	0.1	17	SOT-323
MMBZ5252BW	24	22.8	25.2	33	5.2	600	0.25	0.1	18	SOT-323
MMBZ5254BW	27	25.65	28.35	41	5	600	0.25	0.1	21	SOT-323
MMBZ5255BW	28	26.6	29.4	44	4.5	600	0.25	0.1	21	SOT-323
MMBZ5256BW	30	28.5	31.5	49	4.2	600	0.25	0.1	23	SOT-323
MMBZ5257BW	33	31.35	34.65	58	3.8	700	0.25	0.1	25	SOT-323
MMBZ5258BW	36	34.2	37.8	70	3.4	700	0.25	0.1	27	SOT-323
MMBZ5259BW	39	37.05	40.95	80	3.2	800	0.25	0.1	30	SOT-323

NOTE:

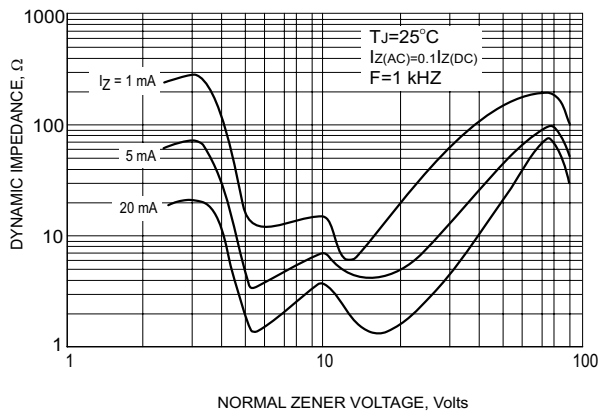
1. Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of ±5%.
2. Specials Available Include:
 - A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
 - B. Matched sets.
3. Zener Voltage (V_Z) Measurement. 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.



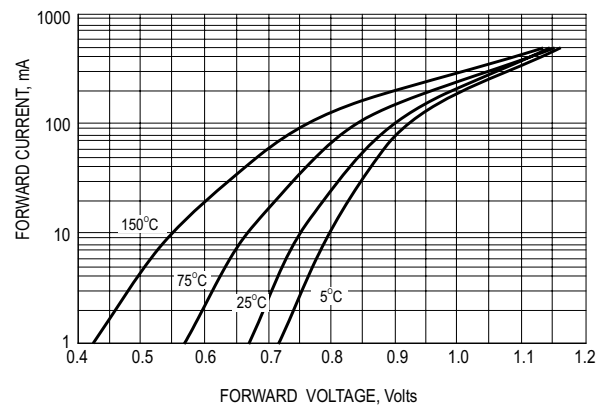
TYPICAL REVERSE CURRENT



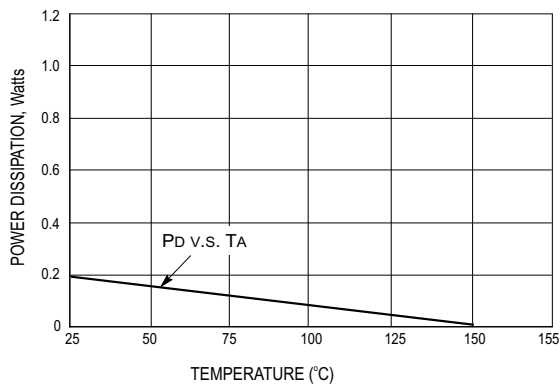
STEADY STATE POWER DERATING



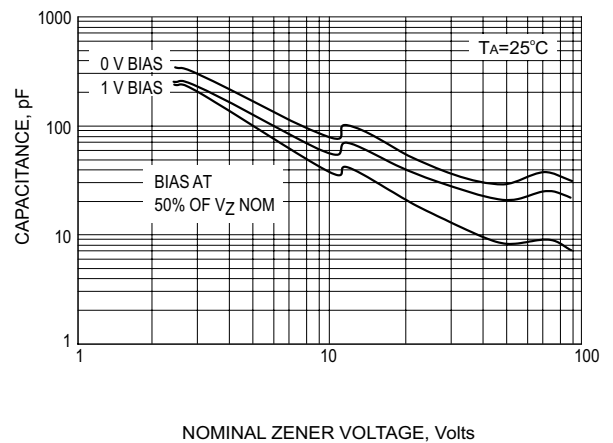
EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE



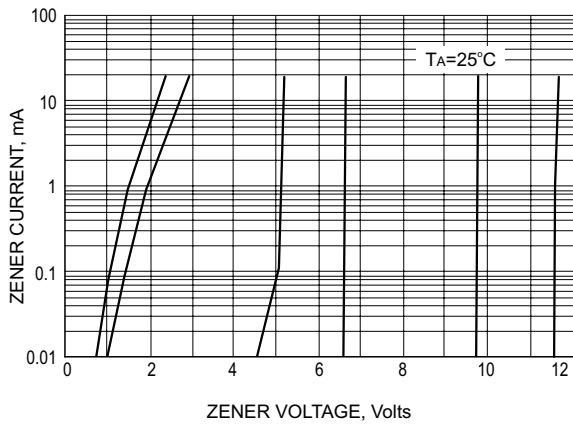
TYPICAL FORWARD VOLTAGE



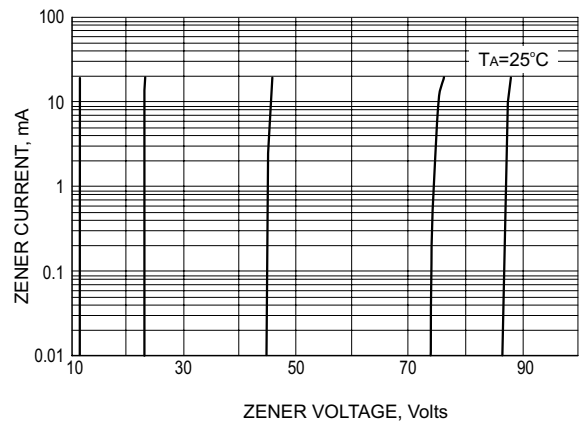
STEADY STATE POWER DERATING



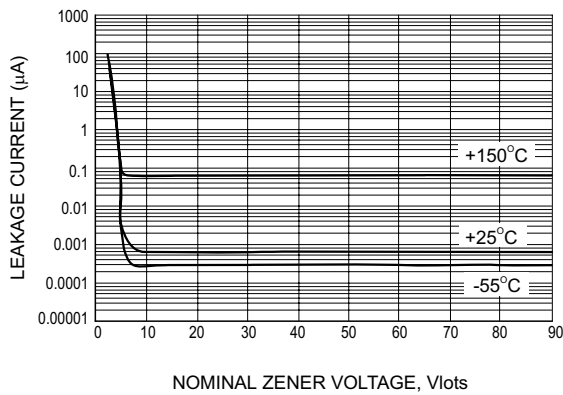
TYPICAL CAPACITANCE



ZENER VOLTAGE V.S. ZENER CURRENT

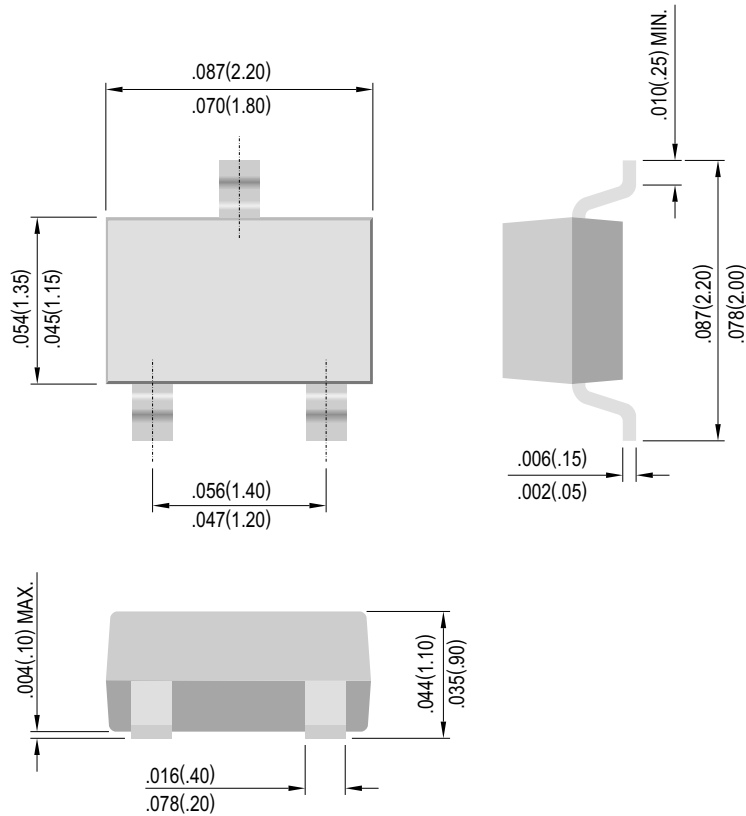


ZENER VOLTAGE V.S. ZENER CURRENT



TYPICAL LEAKGE CURRENT

SOT-323



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