BZT52-C2V4 thru BZT52-C39

SURFACE MOUNT SILICON ZENER DIODES

VOLTAGE 2.4 to 39 Volts **POWER** 410 mWatts

FEATURES

- Planar Die construction
- 410mW Power Dissipation
- Zener Voltages from 2.4V - 39V
- Ideally Suited for Automated Assembly Processes

SOD-123

MECHANICAL DATA

- Case: SOD-123, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram Below
- Approx. Weight: 0.008 grams
- Mounting Position: Any

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Power Dissipation (Notes A) at 25°C	P_D	410	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 StorageTemperature Range	T_J	-55 to +150	°C

NOTES:

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

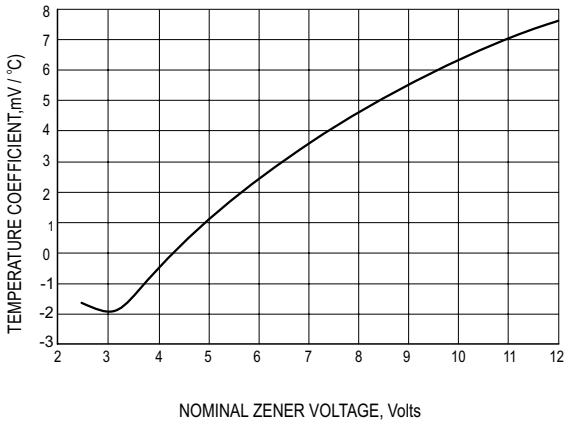
B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

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

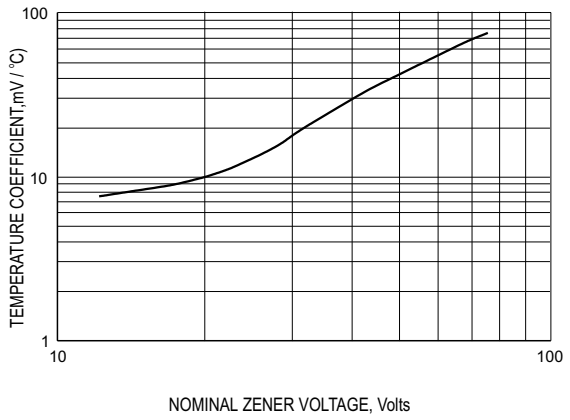
Part Number	Nominal Zener Voltage @ Iz =5mA			Dynamic Resistance Impedance				Max Reverse Leakage Current		Max. Zener Current	Package
	V_Z @ I_{ZT}			Z_{ZT} @ I_{ZT}		Z_{ZK} @ I_{ZK}		I_R @ V_R		I_{ZM}@T_A	
	Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	nA	V	mA	
BZT52-C2V4	2.4	2.28	2.56	85	5	600	1	100000	1	-	SOD-123
BZT52-C2V7	2.7	2.5	2.9	83	5	500	1	75000	1	134	SOD-123
BZT52-C3	3	2.8	3.2	95	5	500	1	50000	1	118	SOD-123
BZT52-C3V3	3.3	3.1	3.5	95	5	500	1	25000	1	109	SOD-123
BZT52-C3V6	3.6	3.4	3.8	95	5	500	1	15000	1	100	SOD-123
BZT52-C3V9	3.9	3.7	4.1	95	5	500	1	10000	1	92	SOD-123
BZT52-C4V3	4.3	4	4.6	95	5	500	1	5000	1	84	SOD-123
BZT52-C4V7	4.7	4.4	5	78	5	500	1	5000	1	76	SOD-123
BZT52-C5V1	5.1	4.8	5.4	60	5	480	1	100	0.8	67	SOD-123
BZT52-C5V6	5.6	5.2	6	40	5	400	1	100	1	59	SOD-123
BZT52-C6V2	6.2	5.8	6.6	10	5	200	1	100	2	54	SOD-123
BZT52-C6V8	6.8	6.4	7.2	8	5	150	1	100	3	49	SOD-123
BZT52-C7V5	7.5	7	7.9	7	5	50	1	100	5	44	SOD-123
BZT52-C8V2	8.2	7.7	8.7	7	5	50	1	100	6	40	SOD-123
BZT52-C9V1	9.1	8.5	9.6	10	5	50	1	100	7	36	SOD-123
BZT52-C10	10	9.4	10.6	15	5	70	1	100	7.5	33	SOD-123
BZT52-C11	11	10.4	11.6	20	5	70	1	100	8.5	30	SOD-123
BZT52-C12	12	11.4	12.7	20	5	90	1	100	9	28	SOD-123
BZT52-C13	13	12.4	14.1	25	5	110	1	100	10	25	SOD-123
BZT52-C15	15	13.8	15.6	30	5	110	1	100	11	23	SOD-123
BZT52-C16	16	15.3	17.1	40	5	170	1	100	12	20	SOD-123
BZT52-C18	18	16.8	19.1	50	5	170	1	100	14	18	SOD-123
BZT52-C20	20	18.8	21.2	50	5	220	1	100	15	17	SOD-123
BZT52-C22	22	20.8	23.3	55	5	220	1	100	17	16	SOD-123
BZT52-C24	24	22.8	25.6	80	5	220	1	100	18	13	SOD-123
BZT52-C27	27	25.1	28.9	80	5	250	1	100	20	12	SOD-123
BZT52-C30	30	28	32	80	5	250	1	100	22.5	10	SOD-123
BZT52-C33	33	31	35	80	5	250	1	100	25	9	SOD-123
BZT52-C36	36	34	38	90	5	250	1	100	27	9	SOD-123
BZT52-C39	39	37	41	90	5	300	1	100	29	8	SOD-123

NOTE:

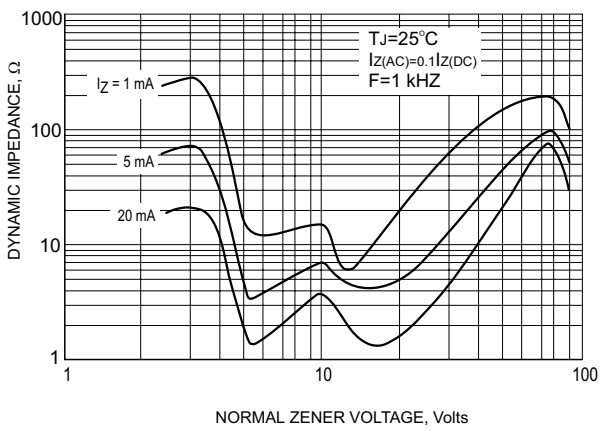
1. Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of ±5%.
2. Specials Available Include:
   A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
   B. Matched sets.
3. Zener Voltage (V_Z) Measurement.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



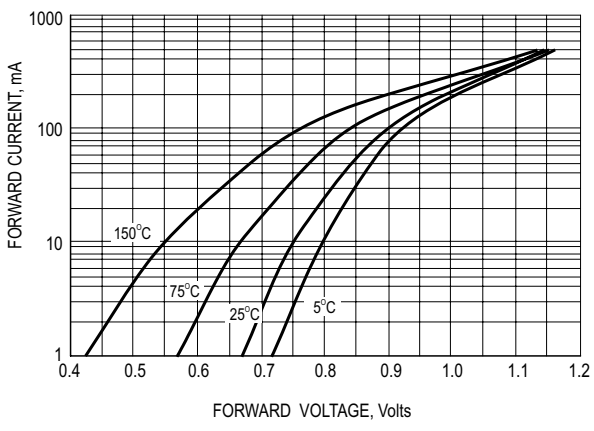
TYPICAL REVERSE CURRENT



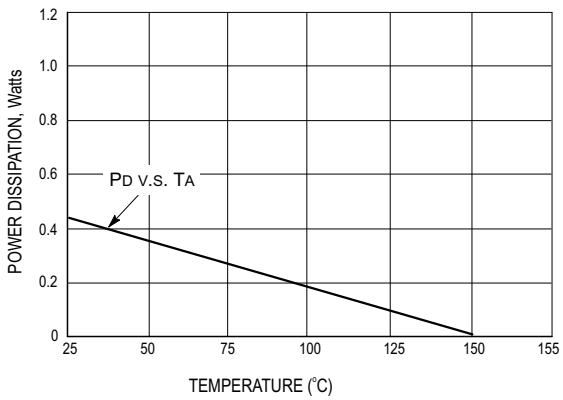
STEADY STATE POWER DERATING



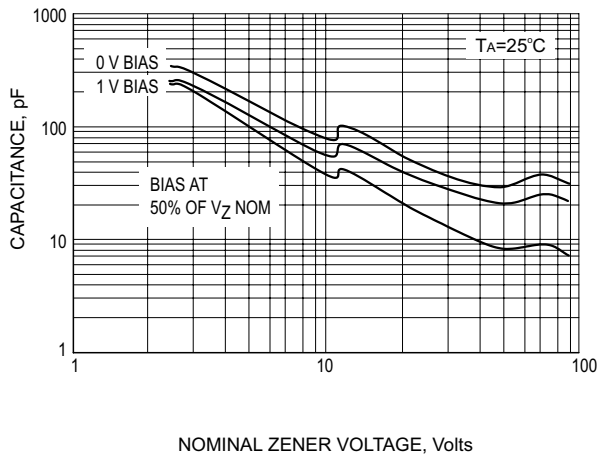
EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE



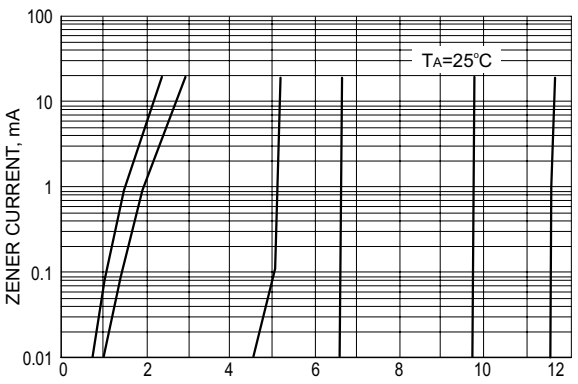
TYPICAL FORWARD VOLTAGE



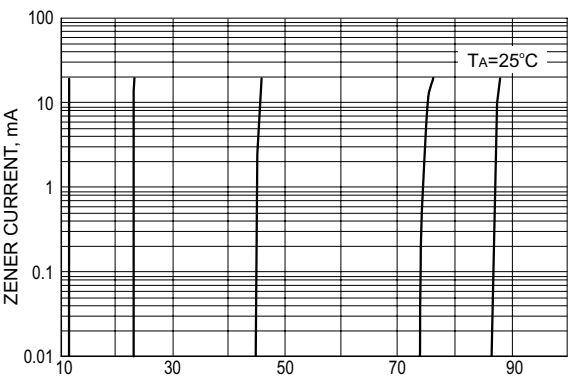
STEADY STATE POWER DERATING



TYPICAL CAPACITANCE



ZENER VOLTAGE V.S. ZENER CURRENT



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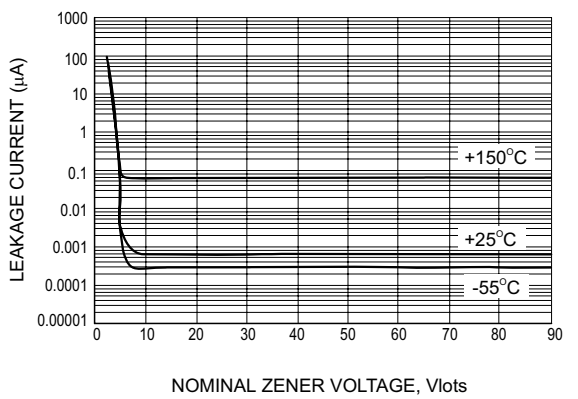
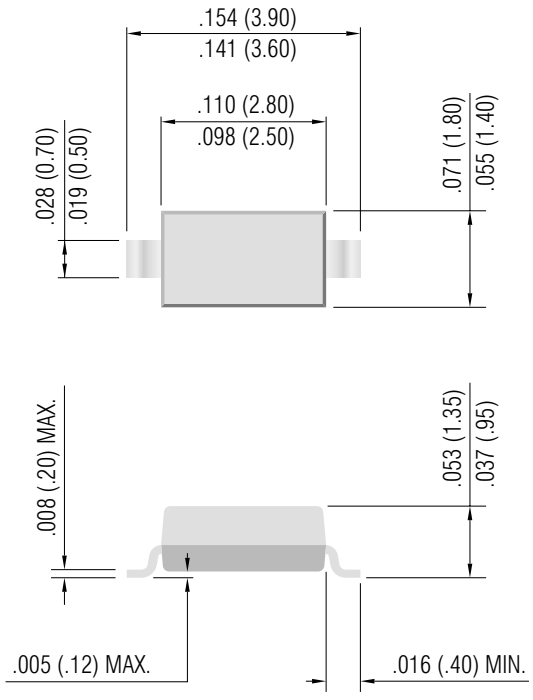


TYPICAL LEAKGE CURRENT

SOD-123



Dimensions in inches and (millimeters)

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