



Zener diode

Features

- 1. Silicon planar power zener diodes
- 2. 500mW power dissipation on ceramic PCB
- 3. SOD-123 surface mount package



Applications

Voltage stabilization

Absolute Maximum Ratings

T_j=25

Parameter	Symbol	Value	Unit
Power dissipation ¹⁾	P _d	500	mW
Junction temperature	T _j	150	
Storage temperature range	T _{stg}	-65~+150	

¹⁾ Device mounted on ceramic PCB: 7.6mm×9.4mm×0.87mm with pad areas 25mm²

Maximum Thermal Resistance

T_j=25

Parameter	Symbol	Value	Unit
Thermal resistance junction to ambient air ¹⁾	R _{θJA}	300	/W

¹⁾ Device mounted on ceramic PCB: 7.6mm×9.4mm×0.87mm with pad areas 25mm²

Stresses exceeding maximum ratings may damage the device. Maximum ratings are stress ratings only. Functional operation above the recommended operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect device reliability.

Electrical Characteristics

T_j=25

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	I _F =10mA		V _F		0.9		V



Type	Marking (²)	V _{Znom}	I _{ZT}	for V _{ZT} ⁽¹⁾ &		Z _{ZT}	Z _{ZK} at	I _{ZK}	I _R at	V _R	mV/ @ I _{ZT}
BZT52C		V	mA	V	Ω	Ω	mA	μA	V		
2V4	WX	2.4	5	2.2~2.6	100	600	1	50	1	-3.5~0	
2V7	W1	2.7	5	2.5~2.9	100	600	1	20	1	-3.5~0	
3V0	W2	3.0	5	2.8~3.2	95	600	1	10	1	-3.5~0	
3V3	W3	3.3	5	3.1~3.5	95	600	1	5	1	-3.5~0	
3V6	W4	3.6	5	3.4~3.8	90	600	1	5	1	-3.5~0	
3V9	W5	3.9	5	3.7~4.1	90	600	1	3	1	-3.5~0	
4V3	W6	4.3	5	4.0~4.6	90	600	1	3	1	-3.5~0	
4V7	W7	4.7	5	4.4~5.0	80	500	1	3	2	-3.5~0.2	
5V1	W8	5.1	5	4.8~5.4	60	480	1	2	2	-2.7~1.2	
5V6	W9	5.6	5	5.2~6.0	40	400	1	1	2	-2.0~2.5	
6V2	WA	6.2	5	5.8~6.6	10	150	1	3	4	0.4~3.7	
6V8	WB	6.8	5	6.4~7.2	15	80	1	2	4	1.2~4.5	
7V5	WC	7.5	5	7.0~7.9	15	80	1	1	5	2.5~5.3	
8V2	WD	8.2	5	7.7~8.7	15	80	1	0.7	5	3.2~6.2	
9V1	WE	9.1	5	8.5~9.6	15	100	1	0.5	6	3.8~7.0	
10	WF	10	5	9.4~10.6	20	150	1	0.2	7	4.5~8.0	
11	WG	11	5	10.4~11.6	20	150	1	0.1	8	5.4~9.0	
12	WH	12	5	11.4~12.7	25	150	1	0.1	8	6.0~10.0	
13	WI	13	5	12.4~14.1	30	170	1	0.1	8	7.0~11.0	
15	WJ	15	5	13.8~15.6	30	200	1	0.1	10.5	9.2~13.0	
16	WK	16	5	15.3~17.1	40	200	1	0.1	11.2	10.4~14.0	
18	WL	18	5	16.8~19.1	45	225	1	0.1	12.6	12.4~16.0	
20	WM	20	5	18.8~21.2	55	225	1	0.1	14	14.4~18.0	
22	WN	22	5	20.8~23.3	55	250	1	0.1	15.4	16.4~20.0	
24	WO	24	5	22.8~25.6	70	250	1	0.1	16.8	18.4~22.0	
27	WP	27	2	25.1~28.9	80	300	0.5	0.1	18.9	21.4~25.3	
30	WQ	30	2	28~32	80	300	0.5	0.1	21	24.4~29.4	
33	WR	33	2	31~35	80	325	0.5	0.1	23.1	27.4~33.4	
36	WS	36	2	34~38	90	350	0.5	0.1	25.2	30.4~37.4	
39	WT	39	2	37~41	130	350	0.5	0.1	27.3	33.4~41.2	
43	WU	43	5	40~46	100	700	1	0.1	32	10.0~12.0	
47	WV	47	5	44~50	100	750	1	0.1	35	10.0~12.0	
51	WW	51	5	48~54	100	750	1	0.1	38	10.0~12.0	

¹⁾ Measured with pulses T_p=5ms

²⁾ When provided, otherwise, parts are provided with data code only, and type number identification appears on reel only.



Characteristics ($T_{amb}=25$, unless otherwise specified)

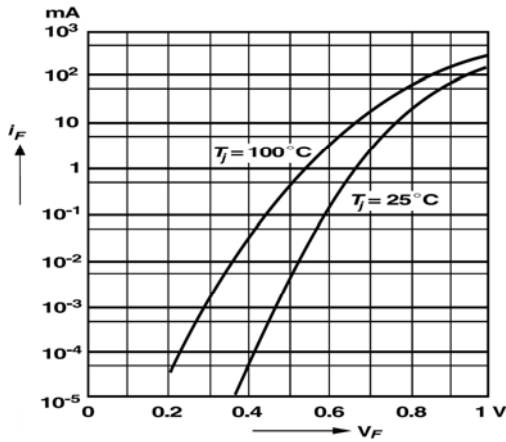


Figure 1. Forward Characteristics

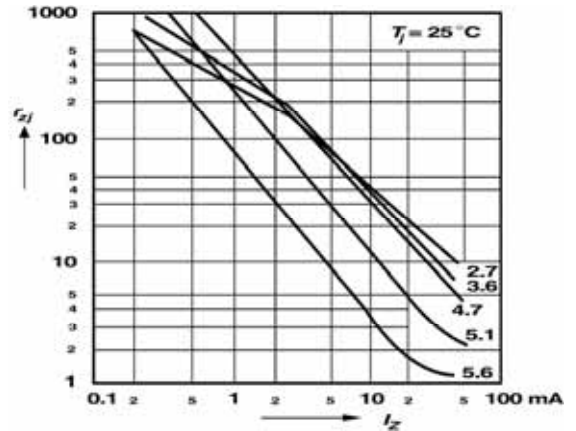


Figure 2. Dynamic Resistance vs. Zener Current

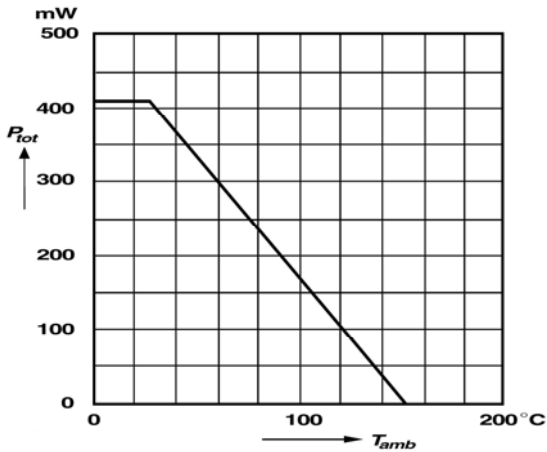


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

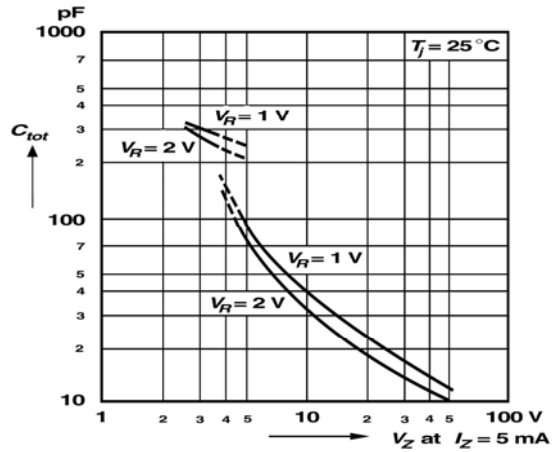


Figure 4. Capacitance vs. Zener Voltage

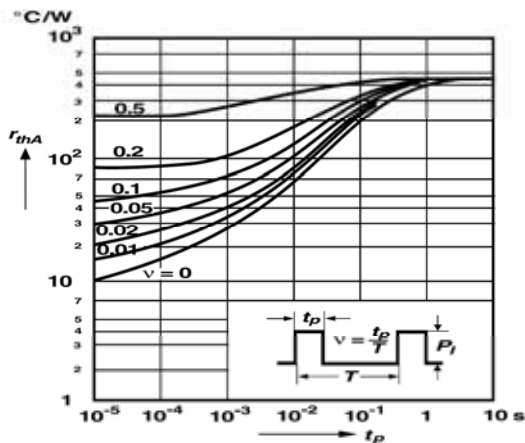


Figure 5. Pulse Thermal Resistance vs. Pulse Duration

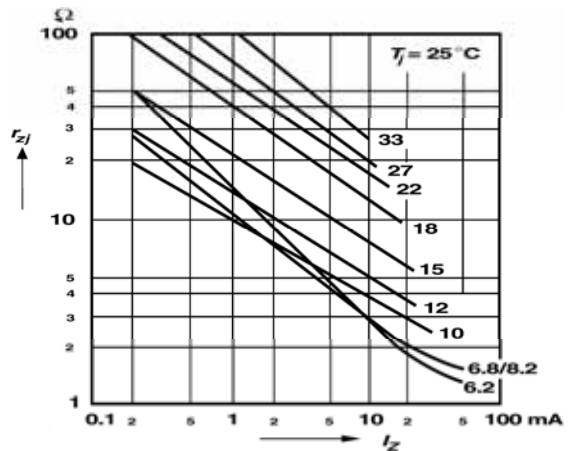


Figure 6. Dynamic Resistance vs. Zener Current

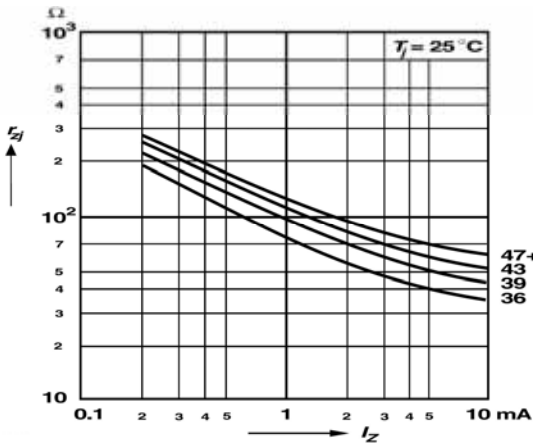


Figure 7. Dynamic Resistance vs. Zener Current

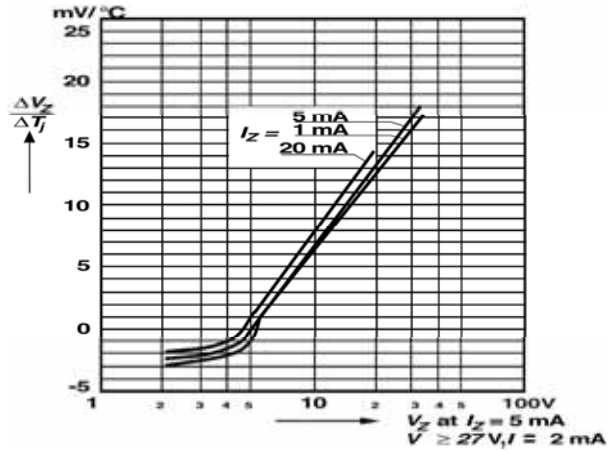


Figure 8. Temperature Dependence of Zener Voltage vs. Zener Voltage

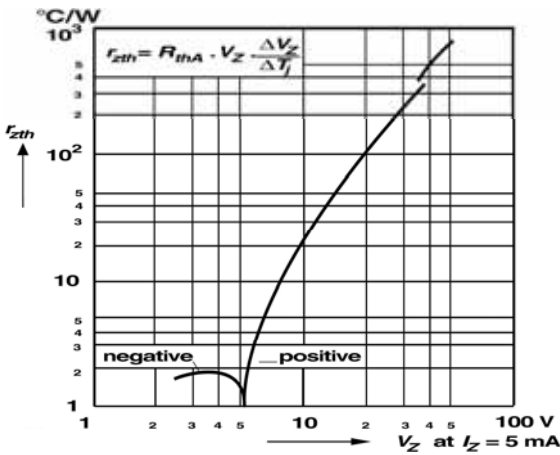


Figure 9. Thermal Differential Resistance vs. Zener Voltage

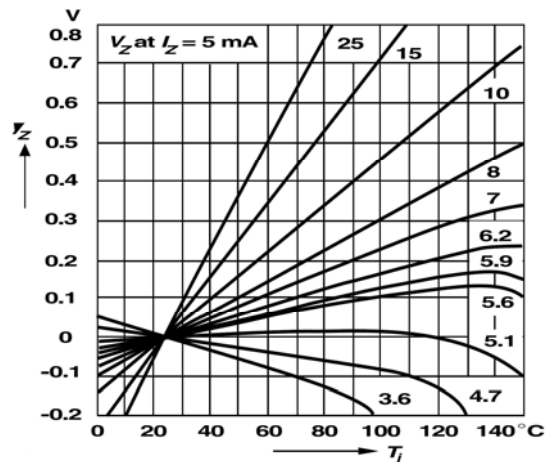


Figure 10. Change of Zener Voltage vs. Junction Temperature

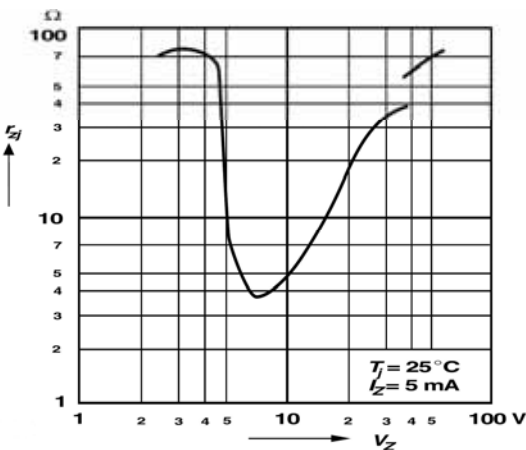


Figure 11. Dynamic Resistance vs. Zener Voltage

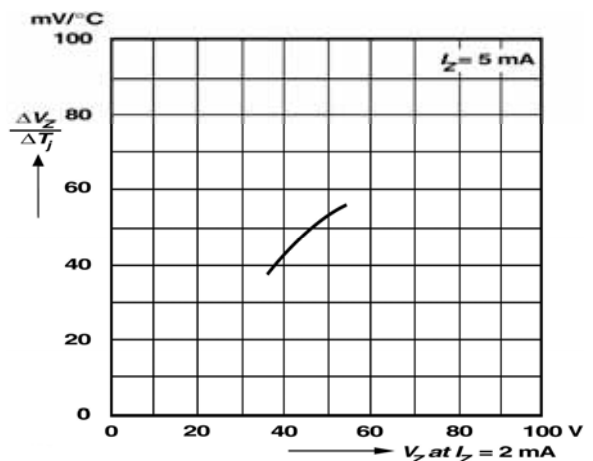


Figure 12. Temperature Dependence of Zener Voltage vs. Zener Voltage

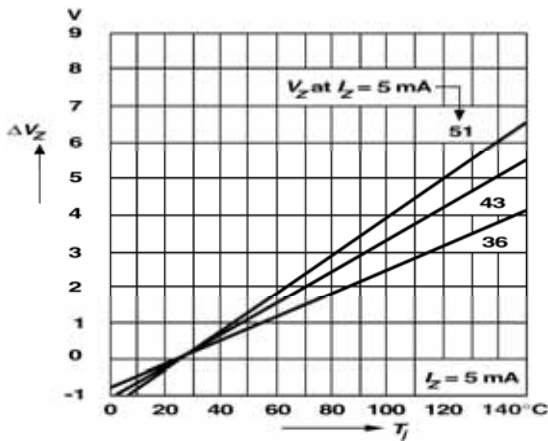


Figure 13. Change of Zener Voltage vs. Junction Temperature

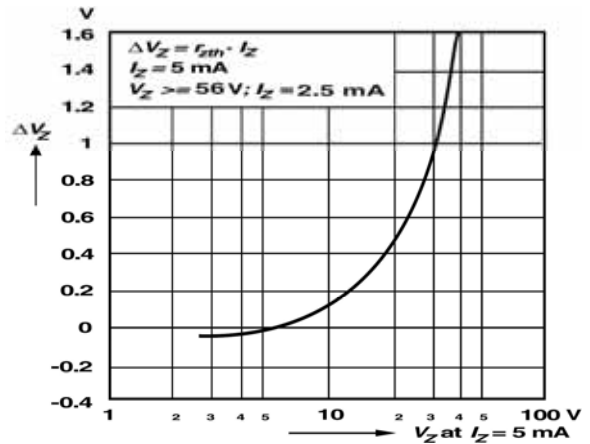


Figure 14. Change of Zener Voltage from turn-on up to the point of thermal equilibrium vs. Zener voltage

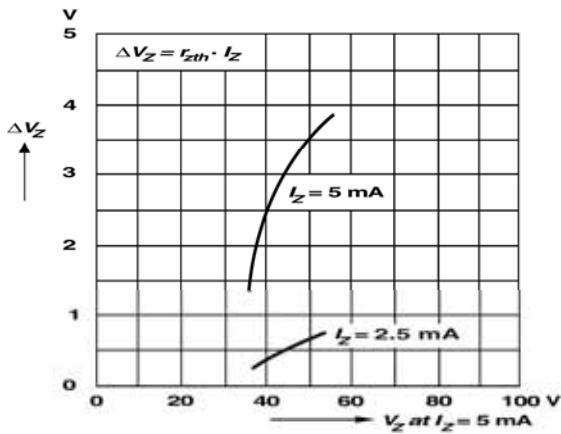


Figure 15. Change of Zener Voltage from turn-on up to the point of thermal equilibrium vs. Zener Voltage

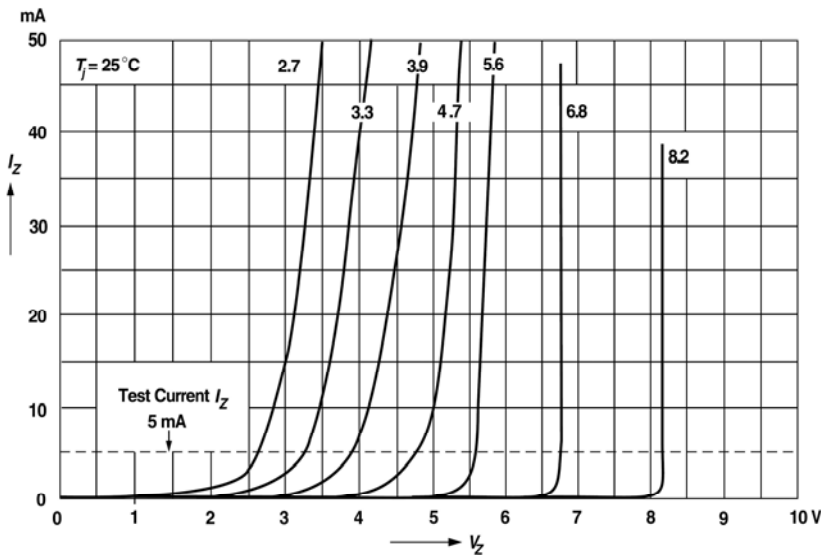


Figure 16. Breakdown Characteristics

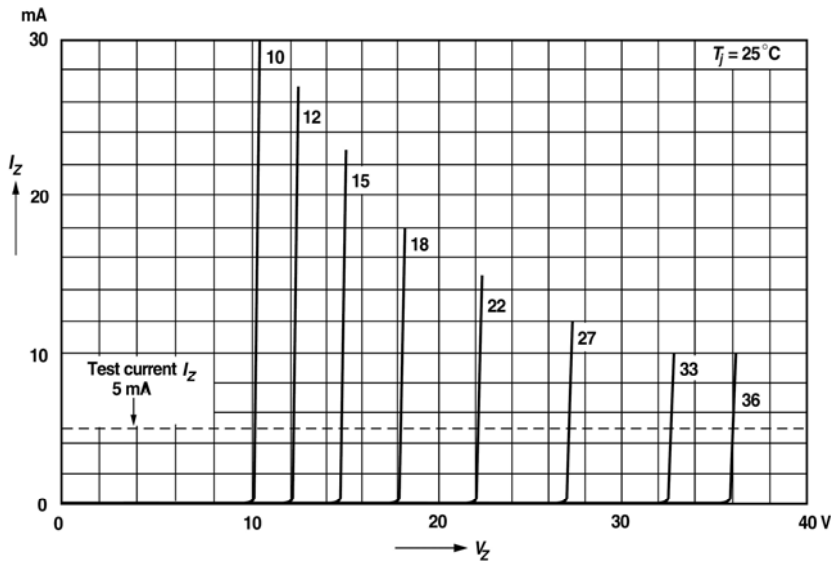


Figure 17. Breakdown Characteristics

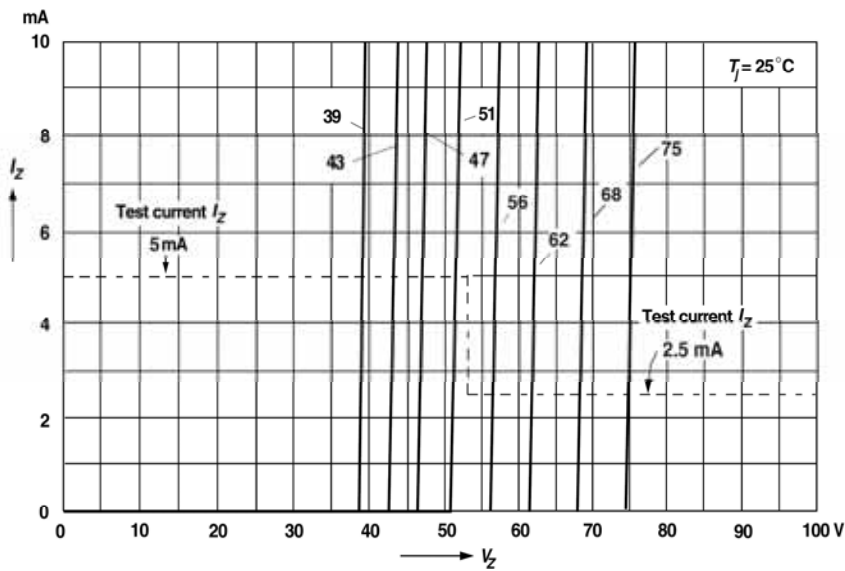
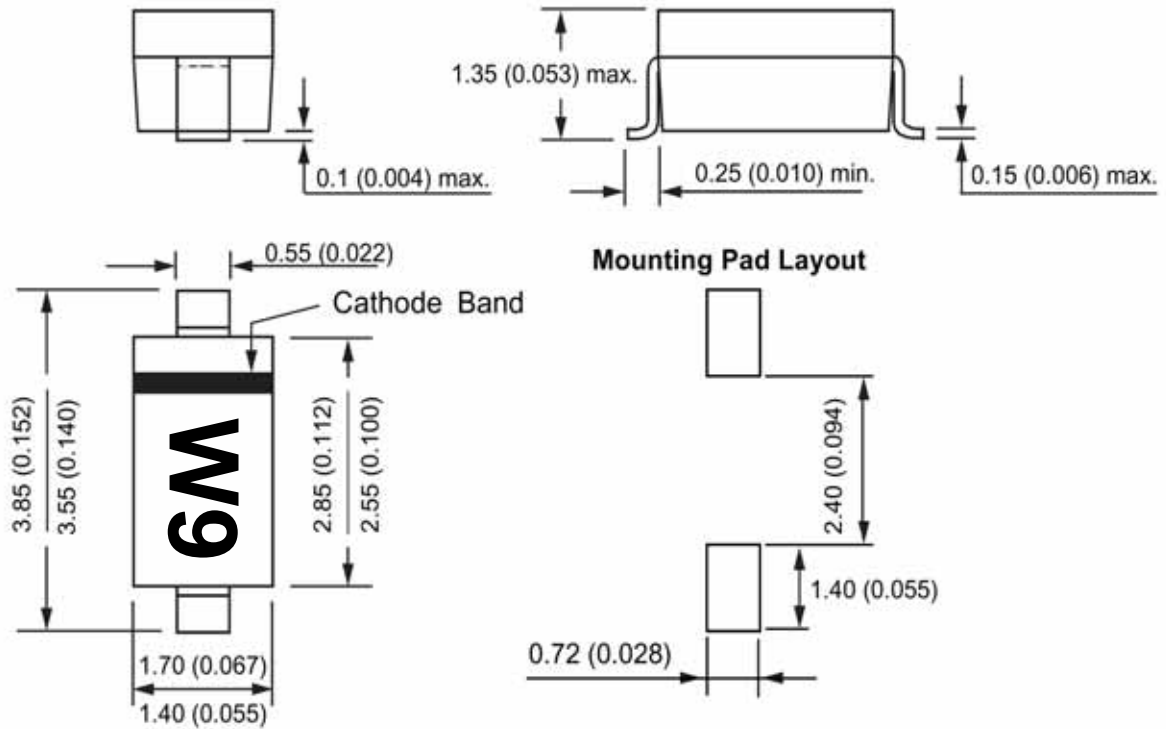


Figure 18. Breakdown Characteristics



Dimensions in mm (Inches)



SOD-123