

SURFACE MOUNT ZENER DIODE

VOLTAGE RANGE 2.4 to 47 Volts POWER RATING 500 mWatts

FEATURES

- * Saving space
- * Hermetic sealed parts
- * Electrical data identical with the devices BZT55 Series / TSM Series
- * Fits onto SOD323/SOD110 footprints
- * Very sharp reverse characteristic
- * Very high stability
- * Low noise
- * Available with tighter tolerances
- * Low reverse current level
- * Lead (Pb)-free component
- * Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

MECHANICAL DATA

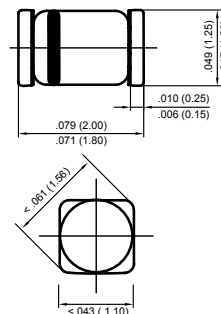
- * Case: MicroMELF
- * Weight: approx. 12mg

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.



Micro-MELF



Dimensions in inches and (millimeters)

MAXIMUM RATINGS (@ TA = 25°C unless otherwise noted)

RATINGS	SYMBOL	VALUE	UNITS
Power Dissipation @R _{θJA} ≤300 K/W	P _V	500	mW
Terminal resistance (Mounted on epoxy-glass hard tissue, Fig.1)	R _{θJA}	500	K/W
Terminal resistance (35um copper clad, 0.9mm ² copper area per electrode)	R _{θJL}	300	K/W
Max. Operating Temperature Range	T _J	175	°C
Storage Temperature Range	T _{STG}	-65 to +175	°C

ELECTRICAL CHARACTERISTICS (@ TA = 25°C unless otherwise noted)

CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Forward Voltage at I _F = 200mA	V _F	-	-	1.5	Volts

ELECTRICAL CHARACTERISTICS (@T_A=25°C unless otherwise specified)

Partnumber	Zener Voltage Range ¹⁾		Dynamic Resistance		Test Current	Temperature Coefficient		Test Current	Reverse Leakage Current		
	V _Z at I _{ZT}		r _{zjT} at I _{ZT} , f = 1kHz	r _{zjK} at I _{ZK} , f = 1kHz	I _{ZT}	TK _{VZ}		I _{ZK}	I _R at T _{amb} = 25 °C	I _R at T _{amb} = 150 °C	at V _R
	V				mA	% / K		mA	µA		V
	min	max				min	max				
BZM55C2V4	2.28	2.56	< 85	< 600	5	- 0.09	- 0.06	1	< 50	< 100	1
BZM55C2V7	2.5	2.9	< 85	< 600	5	- 0.09	- 0.06	1	< 10	< 50	1
BZM55C3V0	2.8	3.2	< 90	< 600	5	- 0.08	- 0.05	1	< 4	< 40	1
BZM55C3V3	3.1	3.5	< 90	< 600	5	- 0.08	- 0.05	1	< 2	< 40	1
BZM55C3V6	3.4	3.8	< 90	< 600	5	- 0.08	- 0.05	1	< 2	< 40	1
BZM55C3V9	3.7	4.1	< 90	< 600	5	- 0.08	- 0.05	1	< 2	< 40	1
BZM55C4V3	4	4.6	< 90	< 600	5	- 0.06	- 0.03	1	< 1	< 20	1
BZM55C4V7	4.4	5	< 80	< 600	5	- 0.05	0.02	1	< 0.5	< 10	1
BZM55C5V1	4.8	5.4	< 60	< 550	5	- 0.02	0.02	1	< 0.1	< 2	1
BZM55C5V6	5.2	6	< 40	< 450	5	- 0.05	0.05	1	< 0.1	< 2	1
BZM55C6V2	5.8	6.6	< 10	< 200	5	0.03	0.06	1	< 0.1	< 2	2
BZM55C6V8	6.4	7.2	< 8	< 150	5	0.03	0.07	1	< 0.1	< 2	3
BZM55C7V5	7	7.9	< 7	< 50	5	0.03	0.07	1	< 0.1	< 2	5
BZM55C8V2	7.7	8.7	< 7	< 50	5	0.03	0.08	1	< 0.1	< 2	6.2
BZM55C9V1 *	8.5	9.6	< 10	< 50	5	0.03	0.09	1	< 0.1	< 2	6.8
BZM55C10 *	9.4	10.6	< 15	< 70	5	0.03	0.1	1	< 0.1	< 2	7.5
BZM55C11 *	10.4	11.6	< 20	< 70	5	0.03	0.11	1	< 0.1	< 2	8.2
BZM55C12 *	11.4	12.7	< 20	< 90	5	0.03	0.11	1	< 0.1	< 2	9.1
BZM55C13 *	12.4	14.1	< 26	< 110	5	0.03	0.11	1	< 0.1	< 2	10
BZM55C15 *	13.8	15.6	< 30	< 110	5	0.03	0.11	1	< 0.1	< 2	11
BZM55C16 *	15.3	17.1	< 40	< 170	5	0.03	0.11	1	< 0.1	< 2	12
BZM55C18 *	16.8	19.1	< 50	< 170	5	0.03	0.11	1	< 0.1	< 2	13
BZM55C20 *	18.8	21.2	< 55	< 220	5	0.03	0.11	1	< 0.1	< 2	15
BZM55C22 *	20.8	23.3	< 55	< 220	5	0.04	0.12	1	< 0.1	< 2	16
BZM55C24 *	22.8	25.6	< 80	< 220	5	0.04	0.12	1	< 0.1	< 2	18
BZM55C27 *	25.1	28.9	< 80	< 220	5	0.04	0.12	1	< 0.1	< 2	20
BZM55C30 *	28	32	< 80	< 220	5	0.04	0.12	1	< 0.1	< 2	22
BZM55C33 *	31	35	< 80	< 220	5	0.04	0.12	1	< 0.1	< 2	24
BZM55C36 *	34	38	< 80	< 220	5	0.04	0.12	1	< 0.1	< 2	27
BZM55C39 *	37	41	< 90	< 500	2.5	0.04	0.12	0.5	< 0.1	< 5	30
BZM55C43 *	40	46	< 90	< 600	2.5	0.04	0.12	0.5	< 0.1	< 5	33
BZM55C47 *	44	50	110	< 700	2.5	0.04	0.12	0.5	< 0.1	< 5	36

¹⁾ t_p ≤ 10 ms, T/t_p > 1000

^{*)} Additional measurement of Voltage group 9V1 to 47 at 95 % V_{zmin} ≤ 35 nA at T_j 25 °C

RATING AND CHARACTERISTICS CURVES (BZM55C2V4-BZM55C47)

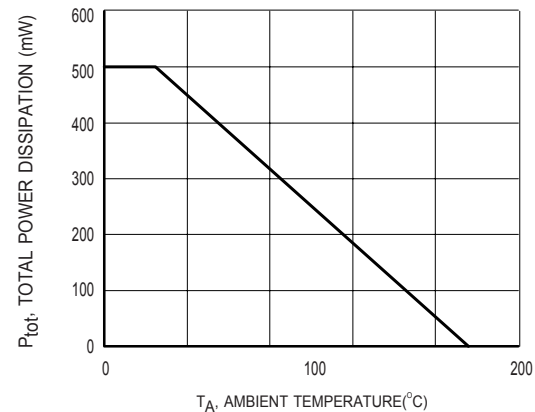


Figure1 Total Power Dissipation vs. Ambient Temperature

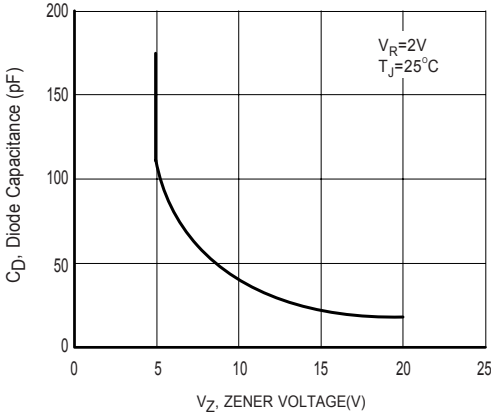


Figure2 Diode Capacitance vs. Zener Voltage

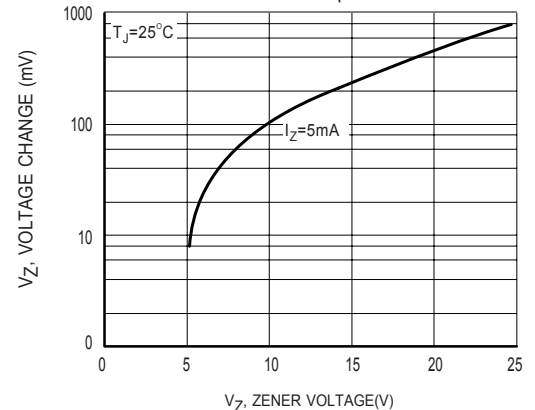


Figure3 Typical Change of Working Voltage under Operating Conditions at $T_A=25^\circ C$

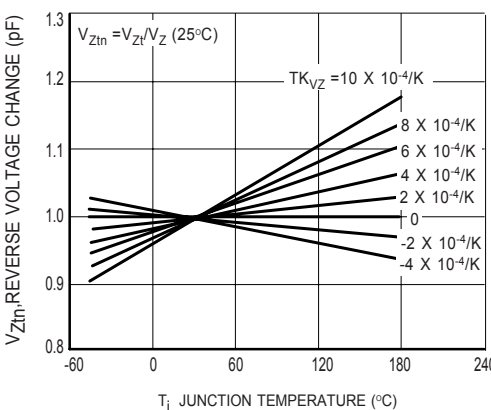


Figure4 Typical Change of Working Voltage vs. Junction Temperature

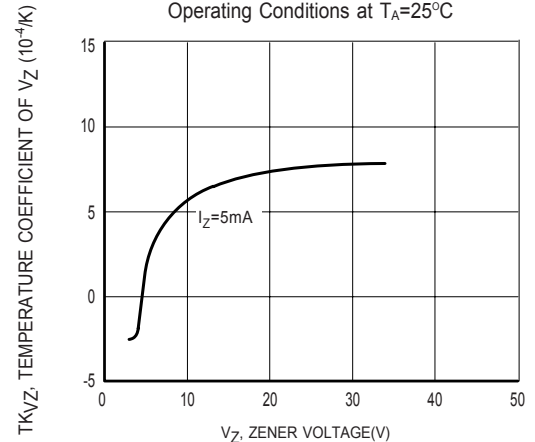


Figure5 Temperature Coefficient of V_Z vs. Zener Voltage

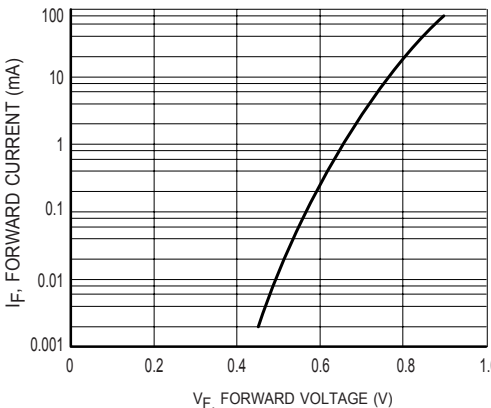


Figure6 Forward Current vs. Forward Voltage

RATING AND CHARACTERISTICS CURVES (BZM55C2V4-BZM55C47)

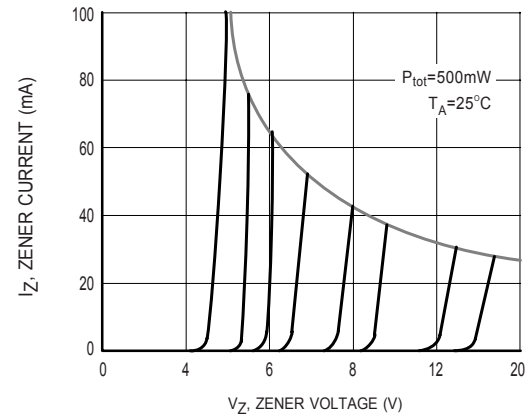


Figure7 Zener Current vs. Zener Voltage

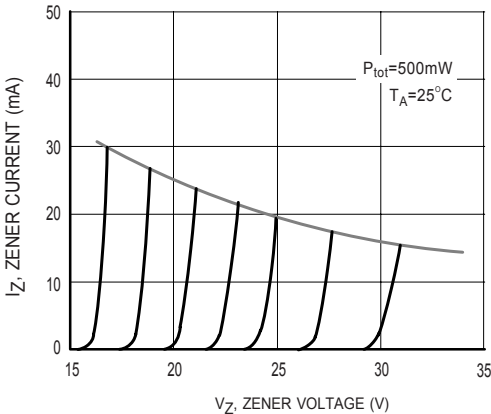


Figure8 Zener Current vs. Zener Voltage

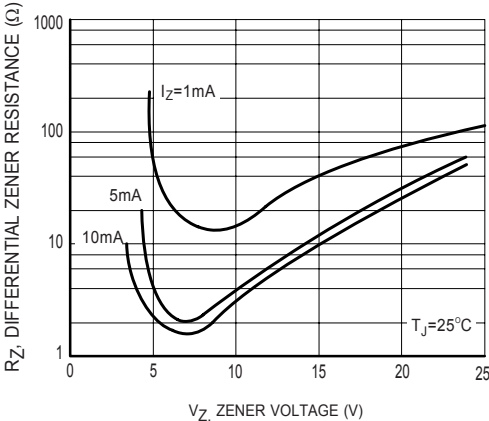


Figure9 Differential Zener Resistance vs. Zener Voltage

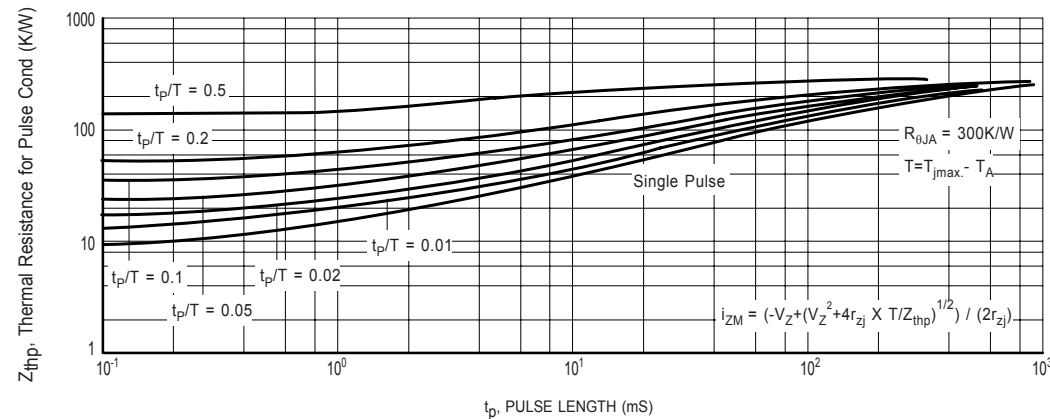


Figure10 Thermal Response

DISCLAIMER NOTICE

Rectron Inc reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. Rectron Inc or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on RECTRON data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. Rectron Inc does not assume any liability arising out of the application or use of any product or circuit.

Rectron products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of Rectron Inc. Customers using or selling Rectron components for use in such applications do so at their own risk and shall agree to fully indemnify Rectron Inc and its subsidiaries harmless against all claims, damages and expenditures.