

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

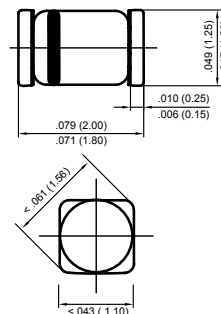
- * Case: MicroMELF
- * Weight: approx. 12mg

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

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

RATING AND CHARACTERISTICS CURVES (BZM55C2V4-BZM55C47)

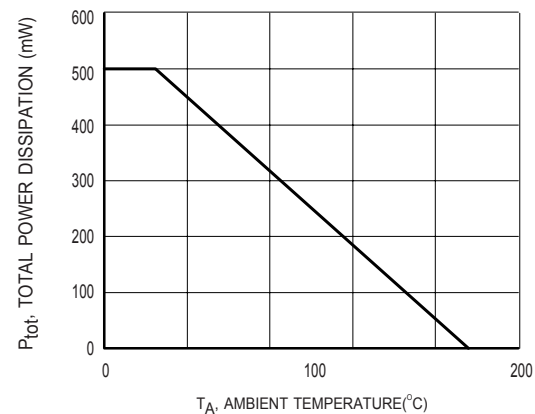


Figure1 Total Power Dissipation vs. Ambient Temperature

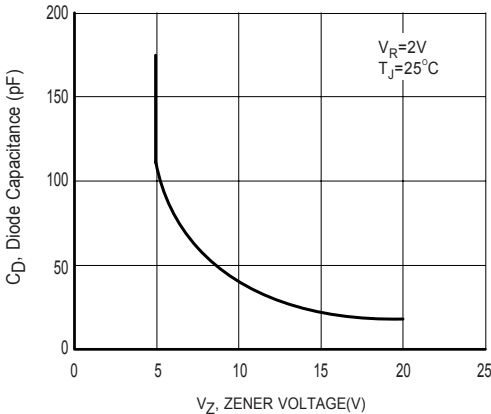


Figure2 Diode Capacitance vs. Zener Voltage

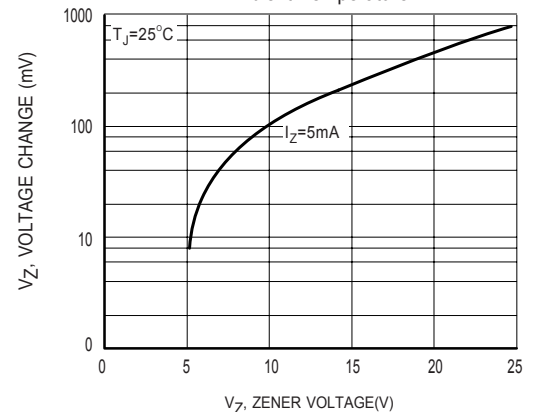


Figure3 Typical Change of Working Voltage under Operating Conditions at $T_A=25^\circ C$

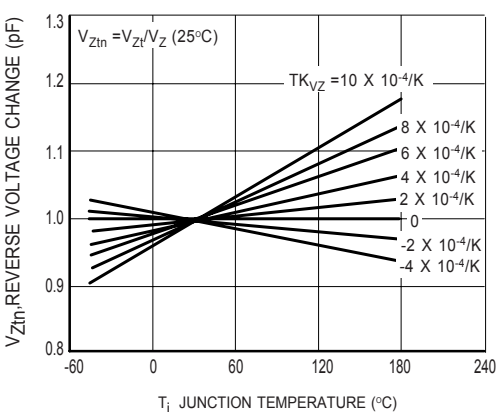


Figure4 Typical Change of Working Voltage vs. Junction Temperature

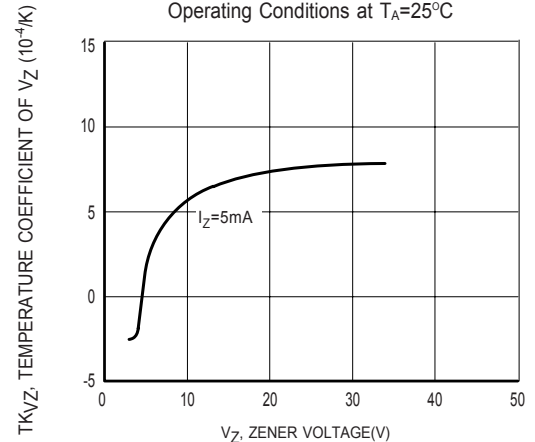


Figure5 Temperature Coefficient of V_Z vs. Zener Voltage

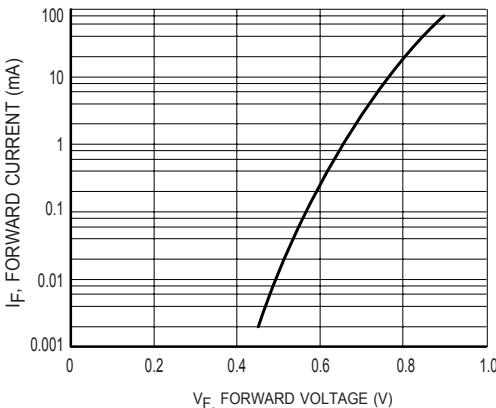


Figure6 Forward Current vs. Forward Voltage

RATING AND CHARACTERISTICS CURVES (BZM55C2V4-BZM55C47)

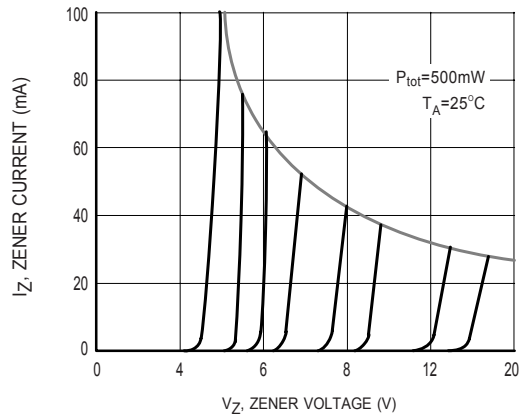


Figure7 Zener Current vs. Zener Voltage

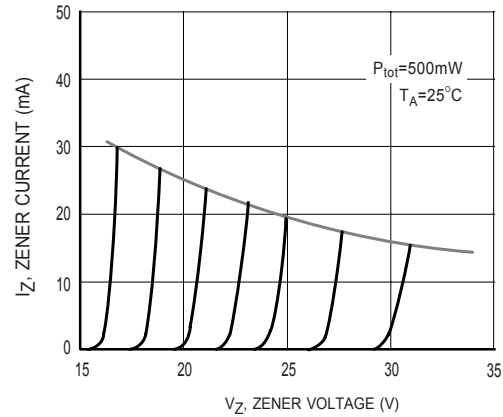


Figure8 Zener Current vs. Zener Voltage

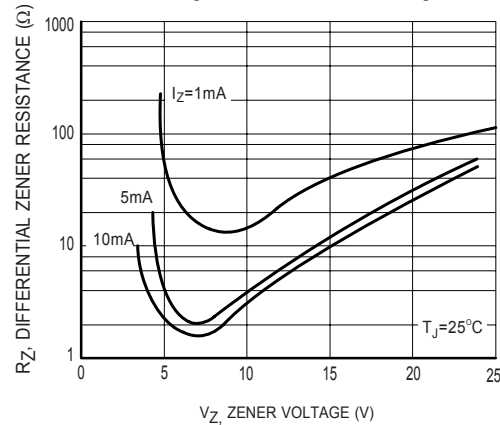


Figure9 Differential Zener Resistance vs. Zener Voltage

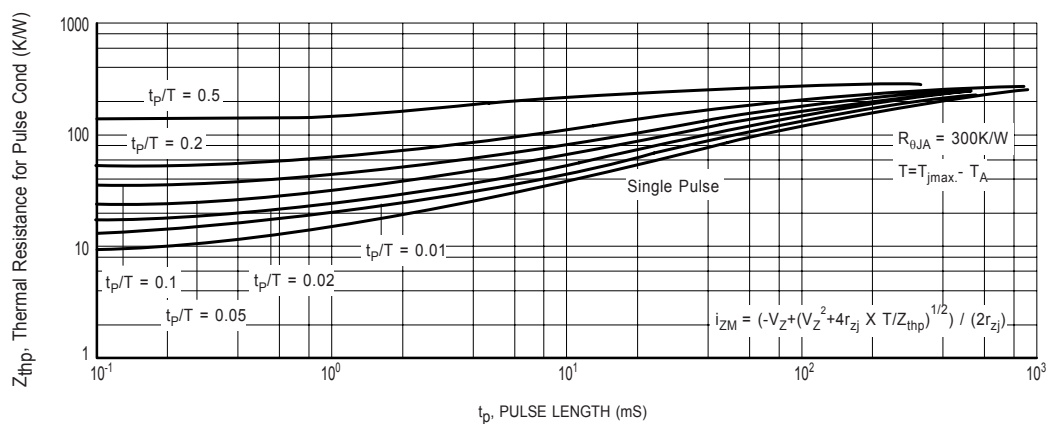


Figure10 Thermal Response

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