

# DATA SHEET

## GMZJ2.0~GMZJ56

### SURFACE MOUNT ZENER DIODES

**VOLTAGE** 2.0 to 56 Volts      **POWER** 500 mWatts

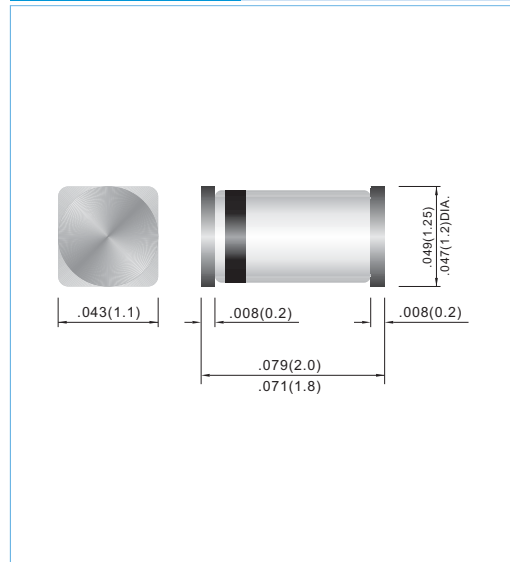
**MICRO-MELF**      Unit : inch (mm)

#### FEATURES

- Planar Die construction
- 500mW Power Dissipation
- Ideally Suited for Automated Assembly Processes
- Both normal and Pb free product are available :  
Normal : 80~95% Sn, 5~20% Pb  
Pb free: 98.5% Sn above

#### MECHANICAL DATA

- Case: Molded Glass MICRO-MELF
- Terminals: Solderable per MIL-STD-202E, Method 208
- Polarity: See Diagram Below
- Approx. Weight: 0.01 grams
- Mounting Position: Any
- Packing information  
T/R - 2.5K per 7" plastic Reel



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Power Dissipation at Tamb = 25 °C	P <sub>TOT</sub>	500	mW
Junction Temperature	T <sub>J</sub>	175	°C
Storage Temperature Range	T <sub>S</sub>	-65 to +175	°C

Valid provided that leads at a distance of 10mm from case are kept at ambient temperature.

Parameter	Symbol	Min.	Typ.	Max.	Units
Thermal Resistance Junction to Ambient Air	R <sub>thA</sub>	--	--	0.3	K/mW
Forward Voltage at I <sub>F</sub> = 100mA	V <sub>F</sub>	--	--	1	V

Valid provided that leads at a distance of 10mm from case are kept at ambient temperature.

Part Number	CLASS	Vz @ IZT		IZ (mA)	VR (V)	IR(μA) MAX	Izt (mA)	ZzT(Ω) MAX	Izk (mA)	ZzK(Ω) MAX
		Min. V	Max. V							
GMZJ 2.0	A	1.88	2.10	5	0.5	120	5	100	0.5	1000
	B	2.02	2.20							
GMZJ 2.2	A	2.12	2.30	5	0.7	100	5	100	0.5	1000
	B	2.22	2.41							
GMZJ 2.4	A	2.33	2.52	5	1.0	120	5	100	0.5	1000
	B	2.43	2.63							
GMZJ 2.7	A	2.54	2.75	5	1.0	100	5	110	0.5	1000
	B	2.69	2.91							
GMZJ 3.0	A	2.85	3.07	5	1.0	50	5	120	0.5	1000
	B	3.01	3.22							
GMZJ 3.3	A	3.16	3.38	5	1.0	20	5	120	0.5	1000
	B	3.32	3.53							
GMZJ 3.6	A	3.455	3.695	5	1.0	10	5	100	1	1000
	B	3.60	3.845							
GMZJ 3.9	A	3.74	4.01	5	1.0	5	5	100	1	1000
	B	3.89	4.16							
GMZJ 4.3	A	4.04	4.29	5	1.0	5	5	100	1	1000
	B	4.17	4.43							
	C	4.30	4.57							
GMZJ 4.7	A	4.44	4.68	5	1.0	5	5	90	1	900
	B	4.55	4.80							
	C	4.68	4.93							
GMZJ 5.1	A	4.81	5.07	5	1.5	5	5	80	1	800
	B	4.94	5.20							
	C	5.09	5.37							
GMZJ 5.6	A	5.28	5.55	5	2.5	5	5	60	1	500
	B	5.45	5.73							
	C	5.61	5.91							
GMZJ 6.2	A	5.78	6.09	5	3.0	5	5	60	1	300
	B	5.96	6.27							
	C	6.12	6.44							
GMZJ 6.8	A	6.29	6.63	5	3.5	2	5	20	0.5	150
	B	6.49	6.83							
	C	6.66	7.01							
GMZJ 7.5	A	6.85	7.22	5	4.0	0.5	5	20	0.5	120
	B	7.07	7.45							
	C	7.29	7.67							
GMZJ 8.2	A	7.53	7.92	5	5.0	0.5	5	20	0.5	120
	B	7.78	8.19							
	C	8.03	8.45							
GMZJ 9.1	A	8.29	8.73	5	6.0	0.5	5	25	0.5	120
	B	8.57	9.01							
	C	8.83	9.30							
GMZJ 10	A	9.12	9.59	5	7.0	0.2	5	30	0.5	120
	B	9.41	9.90							
	C	9.70	10.20							
	D	9.94	10.44							
GMZJ 11	A	10.18	10.71	5	8.0	0.2	5	30	0.5	120
	B	10.50	11.05							
	C	10.82	11.38							

Part Number	CLASS	Vz @ IZT		IZ (mA)	VR (V)	IR(μA) MAX	Izt (mA)	ZzT(Ω) MAX	Izk (mA)	Zzk(Ω) MAX
		Min. V	Max. V							
GMZJ 12	A	11.13	11.71	5	9.0	0.2	5	30	0.5	110
	B	11.44	12.03							
	C	11.74	12.35							
GMZJ 13	A	12.11	12.75	5	10	0.2	5	35	0.5	110
	B	12.55	13.21							
	C	12.99	13.66							
GMZJ 15	A	13.44	14.13	5	11	0.2	5	40	0.5	110
	B	13.89	14.62							
	C	14.35	15.09							
GMZJ 16	A	14.80	15.57	5	12	0.2	5	40	0.5	150
	B	15.25	16.04							
	C	15.69	16.51							
GMZJ 18	A	16.22	17.06	5	13	0.2	5	45	0.5	150
	B	16.82	17.70							
	C	17.42	18.33							
GMZJ 20	A	18.02	18.96	5	15	0.2	5	55	0.5	200
	B	18.63	19.59							
	C	19.23	20.22							
	D	19.72	20.72							
GMZJ 22	A	20.15	21.20	5	17	0.2	5	30	0.5	200
	B	20.64	21.71							
	C	21.08	22.17							
	D	21.52	22.63							
GMZJ 24	A	22.05	23.18	5	19	0.2	5	35	0.5	200
	B	22.61	23.77							
	C	23.12	24.31							
	D	23.63	24.85							
GMZJ 27	A	24.26	25.52	5	21	0.2	5	45	0.5	250
	B	24.97	26.26							
	C	25.63	26.95							
	D	26.29	27.64							
GMZJ 30	A	26.99	28.39	5	23	0.2	5	55	0.5	250
	B	27.70	29.13							
	C	28.36	29.82							
	D	29.02	30.51							
GMZJ 33	A	29.68	31.22	5	25	0.2	5	65	0.5	250
	B	30.32	31.88							
	C	30.90	32.50							
	D	31.49	33.11							
GMZJ 36	A	32.14	33.79	5	27	0.2	5	75	0.5	250
	B	32.79	34.49							
	C	33.40	35.13							
	D	34.01	35.77							
GMZJ 39	A	34.68	36.47	5	30	0.2	5	85	0.5	250
	B	35.36	37.19							
	C	36.00	37.85							
	D	36.63	38.52							
GMZJ 43		40.00	45.00	5	33	0.2	5	90	--	--
GMZJ 47		44.00	49.00	5	36	0.2	5	90	--	--
GMZJ 51		48.00	54.00	5	39	0.2	5	110	--	--
GMZJ 56		53.00	60.00	5	43	0.2	5	110	--	--

**Typical Characteristics** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified)

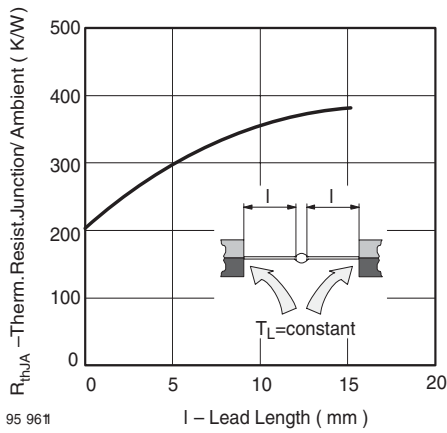


Fig. 1 Thermal Resistance vs. Lead Length

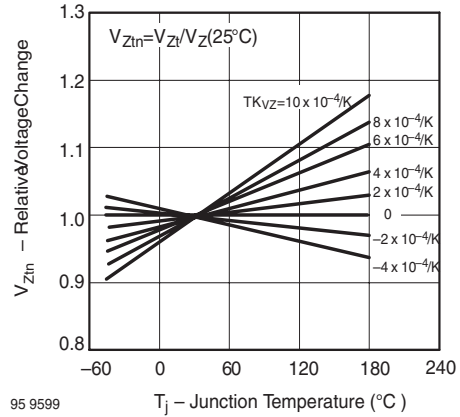


Fig. 4 Typical Change of Working Voltage vs. Junction Temperature

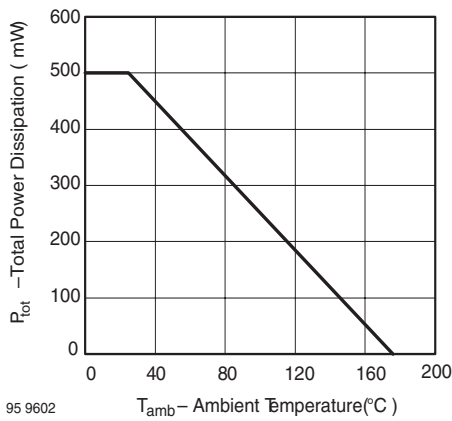


Fig. 2 Total Power Dissipation vs. Ambient Temperature

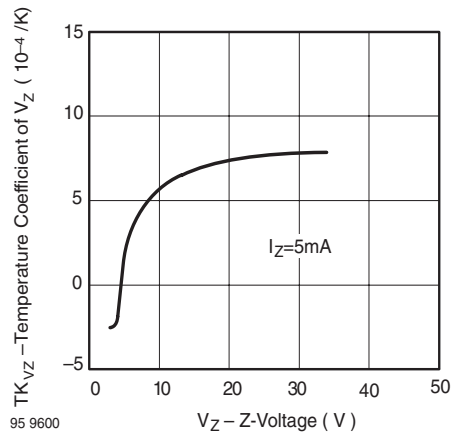


Fig. 5 Temperature Coefficient of  $V_Z$  vs. Z-Voltage

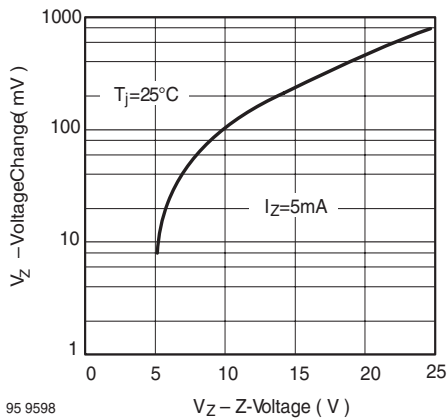


Fig. 3 Typical Change of Working Voltage under Operating Conditions at  $T_{amb}=25\text{ }^{\circ}\text{C}$

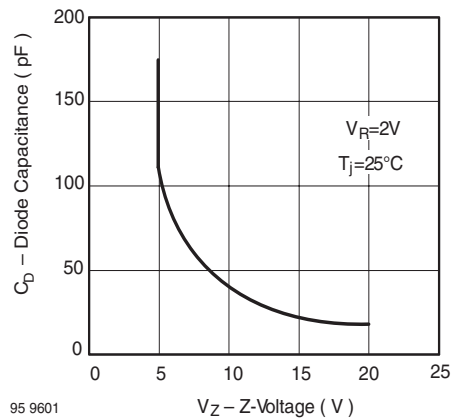


Fig. 6 Diode Capacitance vs. Z-Voltage

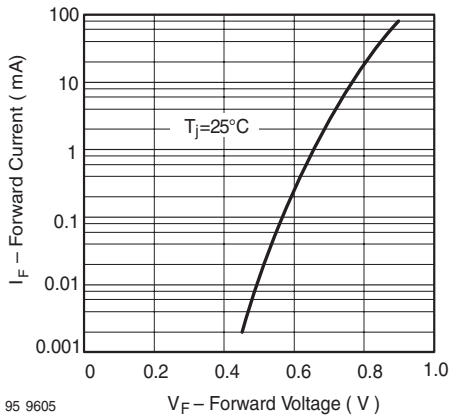


Fig. 7 Forward Current vs. Forward Voltage

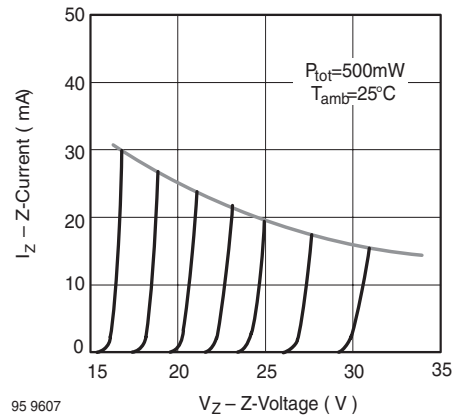


Fig. 9 Z-Current vs. Z-Voltage

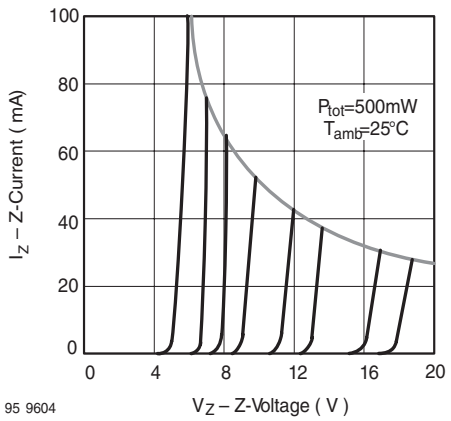


Fig. 8 Z-Current vs. Z-Voltage

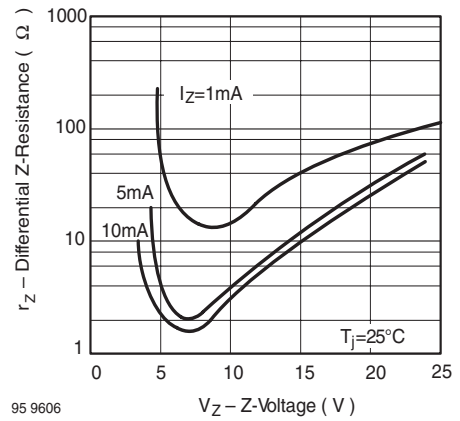


Fig. 10 Differential Z-Resistance vs. Z-Voltage

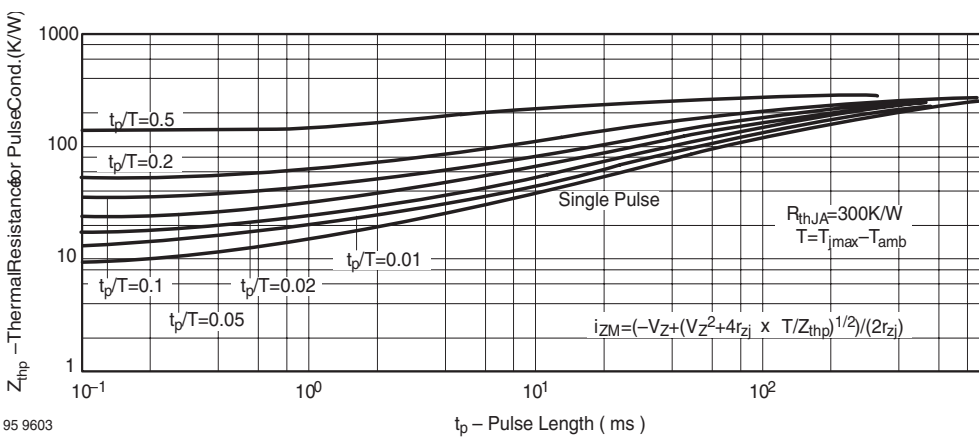


Fig. 11 Thermal Response