Zener diode



Features

1. Small surface mounting type
2. High reliability

Applications

Voltage stabilization

Construction

Silicon epitaxial planar

Absolute Maximum Ratings

T_j=25 °C

Parameter	Test Conditions	Type	Symbol	Value	Unit
Power dissipation	R_{thJA}≤300K/W		P_V	500	mW
Z-current			I_Z	P_V/V_Z	mA
Junction temperature			T_j	175	°C
Storage temperature range			T_{stg}	-65~+175	°C

Maximum Thermal Resistance

T_j=25 °C

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	on PC board 50mm×50mm×1.6mm	R_{thJA}	500	K/W

Electrical Characteristics

T_j=25 °C

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	I_F=200mA		V_F			1.5	V

Type	V_{Znom}	I_{ZT}	for V_{ZT} and	r_{ziT}	r_{ziK} at	I_{ZK}	I_R and	I_R at	V_R	TK_{VZ}
ZMM55C.	V	mA	V[1)]	Ω	Ω	mA	uA	mA[2)]	V	%/K
2V4	2.4	5	2.28~2.56	<85	<600	1	<50	<100	1	-0.09~-0.06
2V7	2.7	5	2.5~2.9	<85	<600	1	<10	<50	1	-0.09~-0.06
3V0	3.0	5	2.8~3.2	<90	<600	1	<4	<40	1	-0.08~-0.05
3V3	3.3	5	3.1~3.5	<90	<600	1	<2	<40	1	-0.08~-0.05
3V6	3.6	5	3.4~3.8	<90	<600	1	<2	<40	1	-0.08~-0.05
3V9	3.9	5	3.7~4.1	<90	<600	1	<2	<40	1	-0.08~-0.05
4V3	4.3	5	4.0~4.6	<90	<600	1	<1	<20	1	-0.06~-0.03
4V7	4.7	5	4.4~5.0	<80	<600	1	<0.5	<10	1	-0.05~+0.02
5V1	5.1	5	4.8~5.4	<60	<550	1	<0.1	<2	1	-0.02~+0.02
5V6	5.6	5	5.2~6.0	<40	<450	1	<0.1	<2	1	-0.05~+0.05
6V2	6.2	5	5.8~6.6	<10	<200	1	<0.1	<2	2	0.03~0.06
6V8	6.8	5	6.4~7.2	<8	<150	1	<0.1	<2	3	0.03~0.07
7V5	7.5	5	7.0~7.9	<7	<50	1	<0.1	<2	5	0.03~0.07
8V2	8.2	5	7.7~8.7	<7	<50	1	<0.1	<2	6.2	0.03~0.08
9V1	9.1	5	8.5~9.6	<10	<50	1	<0.1	<2	6.8	0.03~0.09
10	10	5	9.4~10.6	<15	<70	1	<0.1	<2	7.5	0.03~0.1
11	11	5	10.4~11.6	<20	<70	1	<0.1	<2	8.2	0.03~0.11
12	12	5	11.4~12.7	<20	<90	1	<0.1	<2	9.1	0.03~0.11
13	13	5	12.4~14.1	<26	<110	1	<0.1	<2	10	0.03~0.11
15	15	5	13.8~15.6	<30	<110	1	<0.1	<2	11	0.03~0.11
16	16	5	15.3~17.1	<40	<170	1	<0.1	<2	12	0.03~0.11
18	18	5	16.8~19.1	<50	<170	1	<0.1	<2	13	0.03~0.11
20	20	5	18.8~21.2	<55	<220	1	<0.1	<2	15	0.03~0.11
22	22	5	20.8~23.3	<55	<220	1	<0.1	<2	16	0.04~0.12
24	24	5	22.8~25.6	<80	<220	1	<0.1	<2	18	0.04~0.12
27	27	5	25.1~28.9	<80	<220	1	<0.1	<2	20	0.04~0.12
30	30	5	28~32	<80	<220	1	<0.1	<2	22	0.04~0.12
33	33	5	31~35	<80	<220	1	<0.1	<2	24	0.04~0.12
36	36	5	34~38	<80	<220	1	<0.1	<2	27	0.04~0.12
39	39	2.5	37~41	<90	<500	0.5	<0.1	<5	30	0.04~0.12
43	43	2.5	40~46	<90	<600	0.5	<0.1	<5	33	0.04~0.12
47	47	2.5	44~50	<110	<700	0.5	<0.1	<5	36	0.04~0.12
51	51	2.5	48~54	<125	<700	0.5	<0.1	<10	39	0.04~0.12
56	56	2.5	52~60	<135	<1000	0.5	<0.1	<10	43	0.04~0.12
62	62	2.5	58~66	<150	<1000	0.5	<0.1	<10	47	0.04~0.12
68	68	2.5	64~72	<200	<1000	0.5	<0.1	<10	51	0.04~0.12
75	75	2.5	70~79	<250	<1500	0.5	<0.1	<10	56	0.04~0.12

[1)] Tighter tolerances available request:

ZMM55A… ±1% of V_{Znom}

ZMM55B… ±2% of V_{Znom}

ZMM55F… ±3% of V_{Znom}

ZMM55C… ±5% of V_{Znom}

[2)] at T_j=150 °C

Characteristics (T_j=25°C unless otherwise specified)

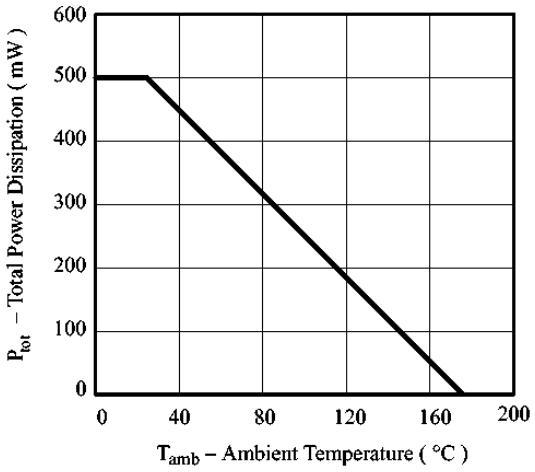


Figure 1. Total Power Dissipation vs. Ambient Temperature

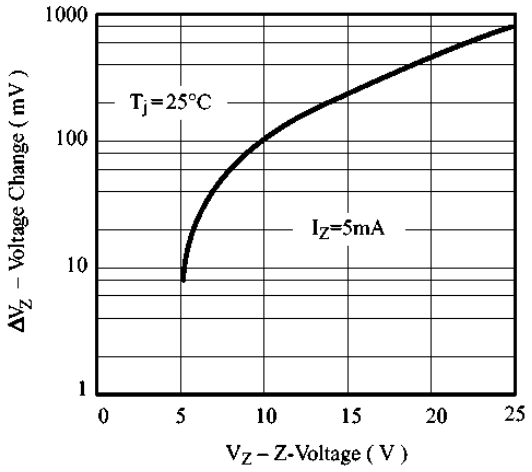


Figure 2. Typical Change of Working Voltage under Operating Conditions at T_{amb}=25_C

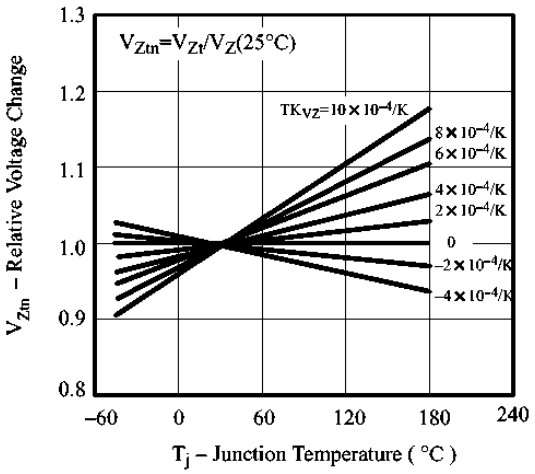


Figure 3. Typical Change of Working Voltage vs. Junction Temperature

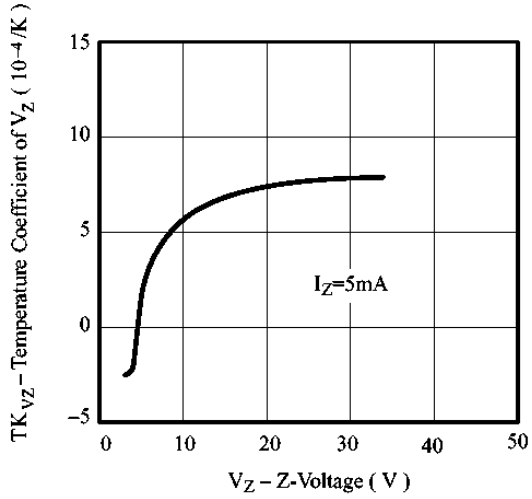


Figure 4. Temperature Coefficient of Vz vs. Z–Voltage

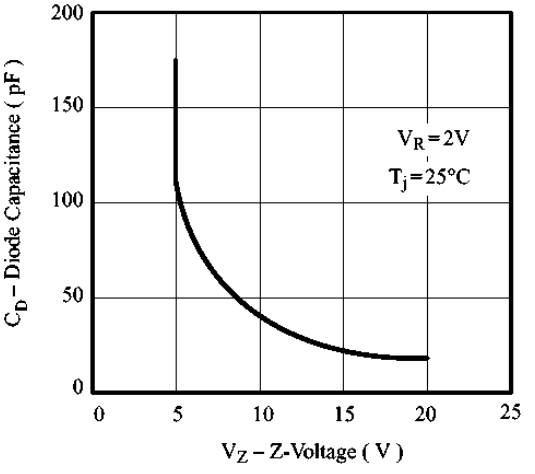


Figure 5. Diode Capacitance vs. Z–Voltage

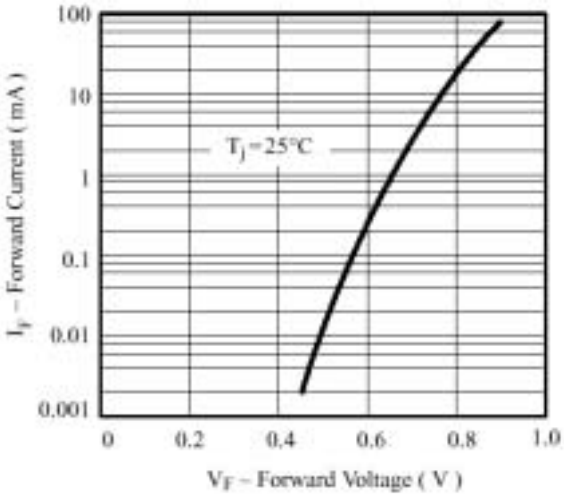


Figure 6. Forward Current vs. Forward Voltage

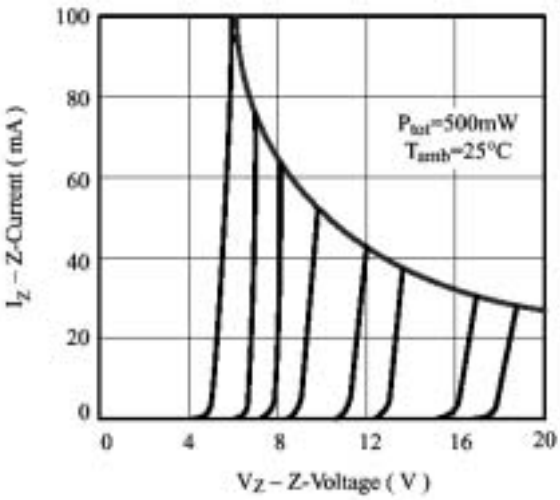


Figure 7. Z–Current vs. Z–Voltage

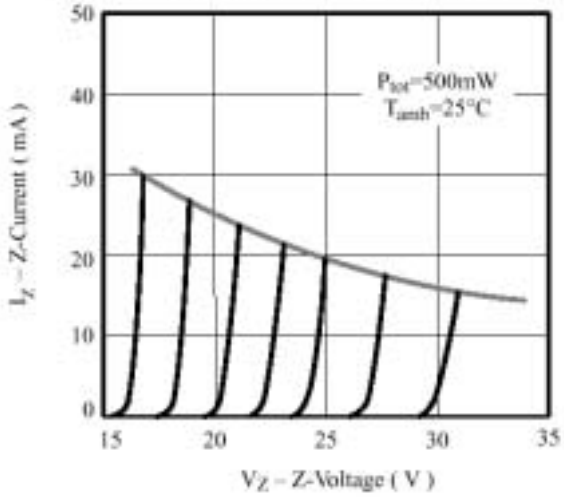


Figure 8. Z–Current vs. Z–Voltage

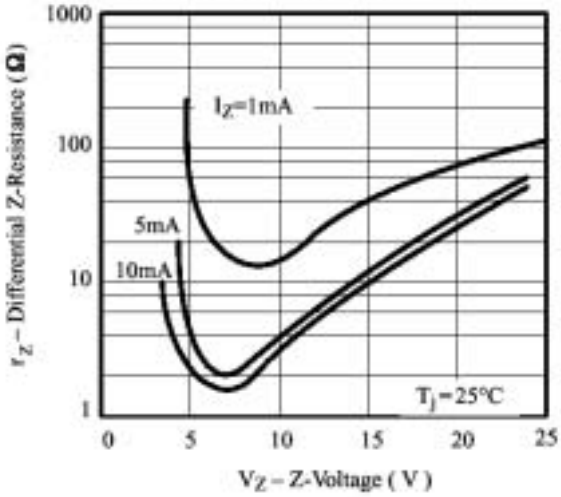


Figure 9. Differential Z–Resistance vs. Z–Voltage

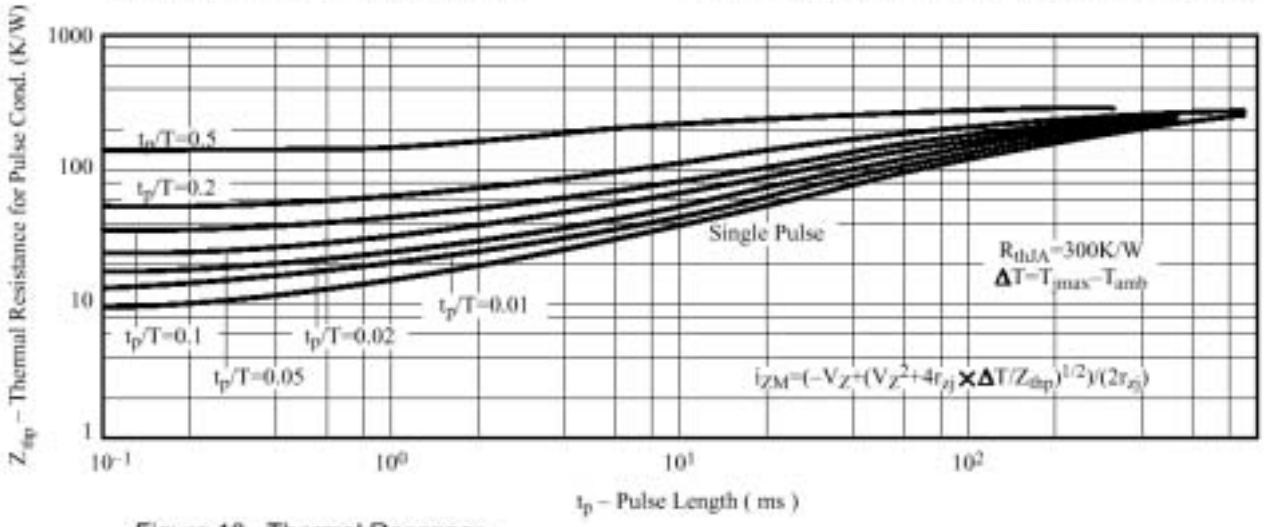
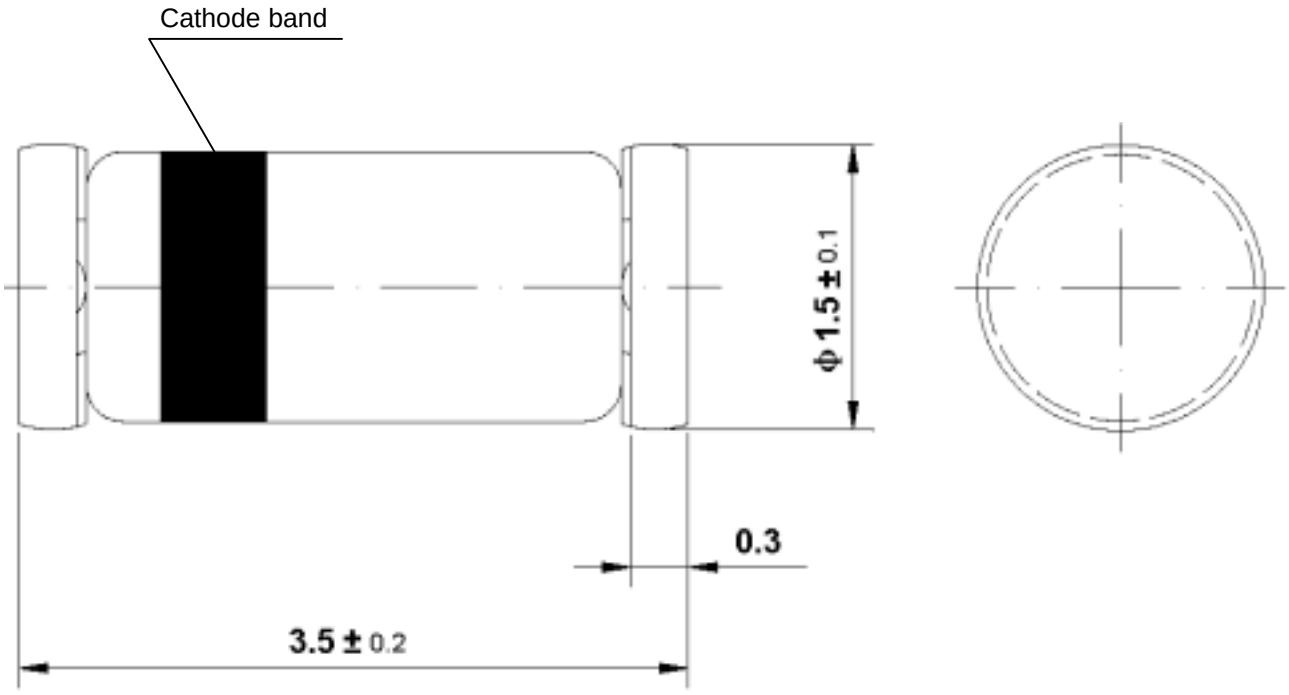


Figure 10. Thermal Response

Dimensions in mm



Glass Case
Mini Melf / SOD 80
JEDEC DO 213 AA