2W, 6.8V - 200V Zener Diode

FEATURES

- AEC-Q101 qualified available
- Glass passivated chip junction
- Typical I_R less than 1μA
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- For general purpose regulation and protection applications

MECHANICAL DATA

- Case: DO-204AC (DO-15)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.400g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
V_Z	6.8 - 200	V
Test current I_{ZT}	2.5 - 100	mA
P_D	2	W
$T_{J\ MAX}$	175	°C
Package	DO-204AC (DO-15)	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

DO-204AC (DO-15)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Steady state power dissipation at T_L = 75°C Lead lengths .375", 9.55mm(1)	P_D	2	W
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	15	A
Operating junction temperature range	T_J	-55 to +175	°C
Storage temperature range	T_{STG}	-55 to +175	°C

Notes:

1. Mounted on Cu-Pad size 10mm x 10mm PCB

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)								
Device[1]	**Zener voltage**	**Test current**	**Maximum Zener Impedance**			**Leakage current**		**Maximum Zener Current**
	V_Z @ I_{ZT}	I_{ZT}	Z_{ZT}@I_{ZT}	Z_{ZK}@I_{ZK}	I_{ZK}	I_R@V_R		I_{ZM}
	V	mA	Ω	Ω	mA	μA	V	mA
2M6.8Z	6.8	100	1.5	200	1.00	1000	5.5	246
2M11Z	11	45.5	4.0	700	0.25	1.0	8.4	166
2M12Z	12	41.5	4.5	700	0.25	1.0	9.1	152
2M13Z	13	38.5	5.0	700	0.25	0.5	9.9	138
2M14Z	14	35.7	5.5	700	0.25	0.5	10.6	130
2M15Z	15	33.4	7.0	700	0.25	0.5	11.4	122
2M16Z	16	31.2	8.0	700	0.25	0.5	12.2	114
2M17Z	17	29.4	9.0	750	0.25	0.5	13.0	107
2M18Z	18	27.8	10	750	0.25	0.5	13.7	100
2M19Z	19	26.3	11	750	0.25	0.5	14.4	95
2M20Z	20	25.0	11	750	0.25	0.5	15.2	90
2M22Z	22	22.8	12	750	0.25	0.5	16.7	82
2M24Z	24	20.8	13	750	0.25	0.5	18.2	76
2M27Z	27	18.5	18	750	0.25	0.5	20.6	68
2M30Z	30	16.6	20	1000	0.25	0.5	22.8	60
2M33Z	33	15.1	23	1000	0.25	0.5	25.1	55
2M36Z	36	13.9	25	1000	0.25	0.5	27.4	50
2M39Z	39	12.8	30	1000	0.25	0.5	29.7	47
2M43Z	43	11.6	35	1500	0.25	0.5	32.7	43
2M47Z	47	10.6	40	1500	0.25	0.5	35.8	39
2M51Z	51	9.8	48	1500	0.25	0.5	38.8	36
2M56Z	56	9.0	55	2000	0.25	0.5	42.6	32
2M62Z	62	8.1	60	2000	0.25	0.5	47.1	29
2M68Z	68	7.4	75	2000	0.25	0.5	51.7	27
2M75Z	75	6.7	90	2000	0.25	0.5	56.0	24
2M82Z	82	6.1	100	3000	0.25	0.5	62.2	22
2M91Z	91	5.5	125	3000	0.25	0.5	69.2	20
2M100Z	100	5.0	175	3000	0.25	0.5	76.0	18
2M110Z	110	4.5	250	4000	0.25	0.5	83.6	17
2M120Z	120	4.2	325	4500	0.25	0.5	91.2	15
2M130Z	130	3.8	400	5000	0.25	0.5	98.8	14
2M140Z	140	3.6	500	5500	0.25	0.5	106.4	13
2M150Z	150	3.3	575	6000	0.25	0.5	114.0	12
2M160Z	160	3.1	650	6500	0.25	0.5	121.6	11
2M170Z	170	2.9	675	7000	0.25	0.5	130.4	11
2M180Z	180	2.8	725	7000	0.25	0.5	136.8	10

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)								
Device[1]	**Zener voltage**	**Test current**	**Maximum Zener Impedance**			**Leakage current**		**Maximum Zener Current**
	V_Z @ I_{ZT}	I_{ZT}	Z_{ZT}@I_{ZT}	Z_{ZK}@I_{ZK}	I_{ZK}	I_R@V_R		I_{ZM}
	V	mA	Ω	Ω	mA	μA	V	mA
2M190Z	190	2.6	825	8000	0.25	0.5	144.8	10
2M200Z	200	2.5	900	8000	0.25	0.5	152.0	9

Notes :

1. Tolerance - Standard Voltage tolerance = ±5%, tolerances may be considered as a special device
2. ZENER VOLTAGE(V_Z) MEASUREMENT - Zener voltage guaranteed when measured at 0.375"(9.5mm) from the body under 40ms ±10ms current pulse and ambient temperature of 25°C
3. ZENER IMPEDANCE (Z_Z) DERIVATION - The zener impedance is derived from 60 cycles AC voltage, which results when an current having an rms value eqal to 10% of the DC zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK}
4. MAXIMUM ZENER CURRENT (I_{ZM}) NON-REPETITIVE - The rating listed in the electrical characteristics table is maximum peak non - repetitive reverse surge current of 1/2 sine wave of 1/120 second duration or equivalent square wave, superimposed on the test current I_{ZT}, per JEDEC standard.

ORDERING INFORMATION

ORDERING CODE[1][2]	PACKAGE	PACKING
2MxZ	DO-204AC (DO-15)	3,500 / Tape & Reel
2MxZ A0G	DO-204AC (DO-15)	1,500 / Ammo box
2MxZH	DO-204AC (DO-15)	3,500 / Tape & Reel
2MxZHA0G	DO-204AC (DO-15)	1,500 / Ammo box

Notes:

1. "x" defines voltage from 6.8V (2M6.8Z) to 200V (2M200Z)
2. “H” means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Maximum Surge Power

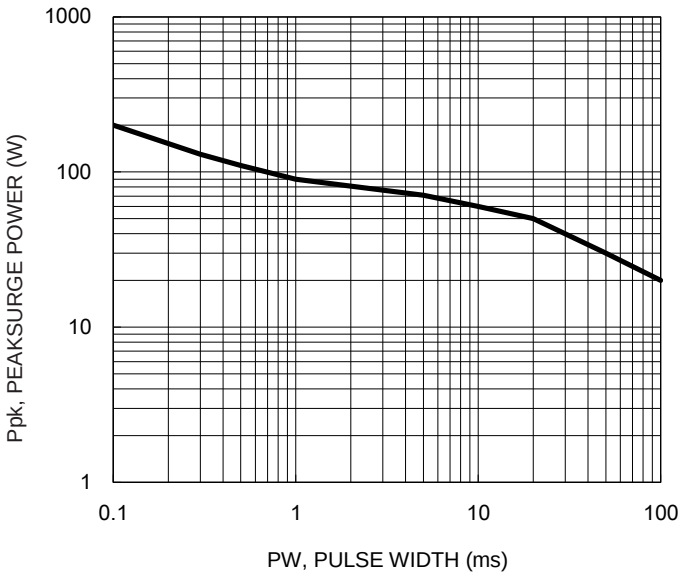


Fig.2 Typical Reverse Leakage

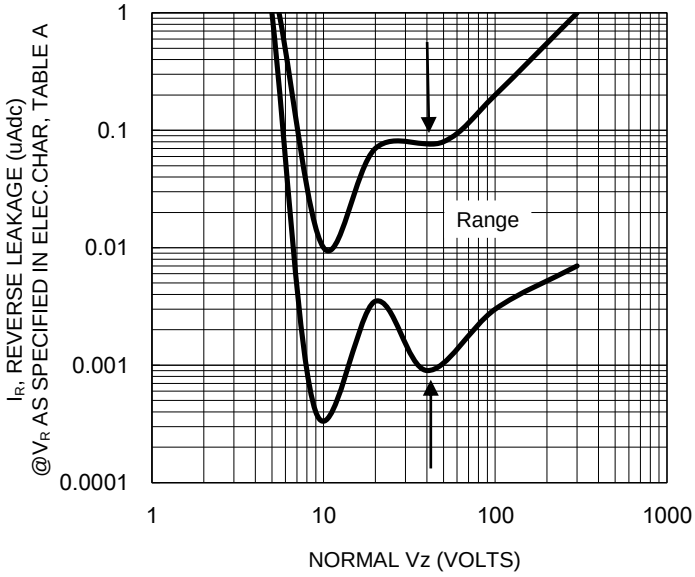


Fig.3 Unit 6.8V - 12V

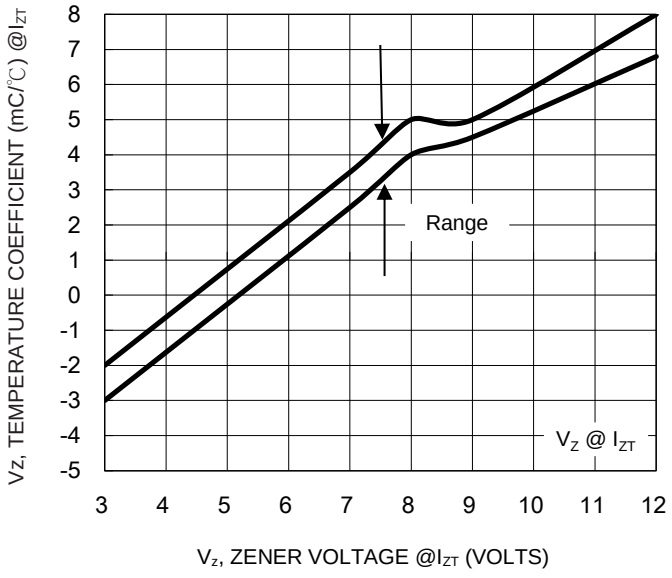
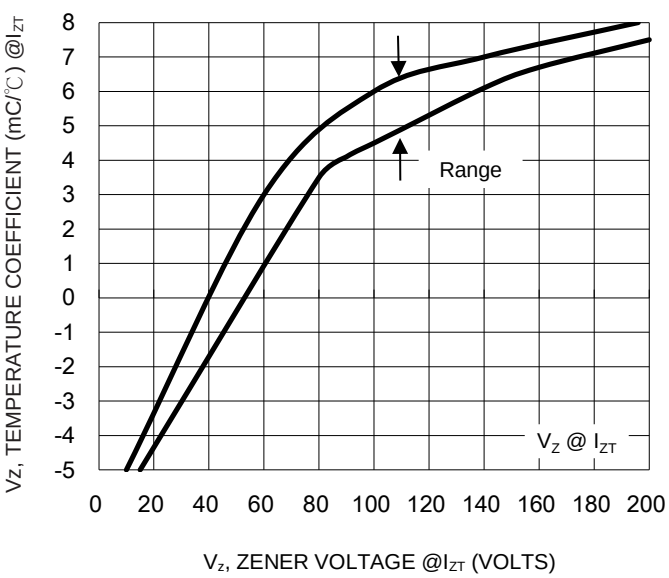


Fig.4 Unit 13V - 200V



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.5 V_Z 6.8V - 10V

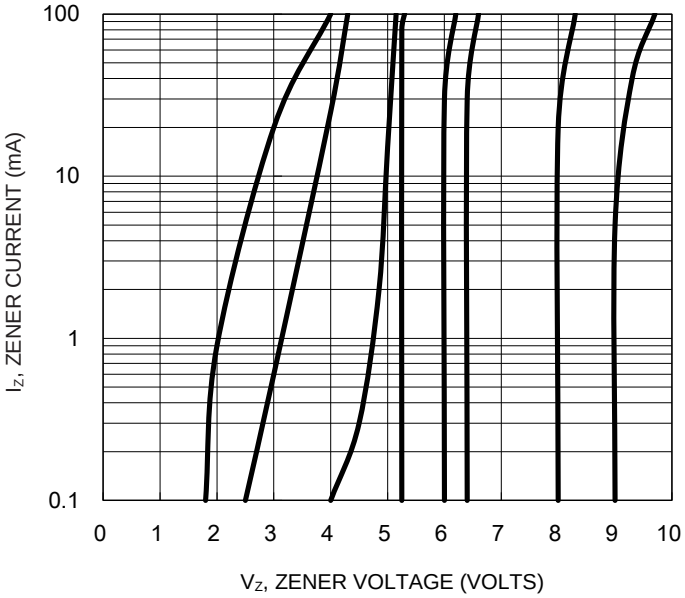


Fig.6 V_Z 11V - 91V

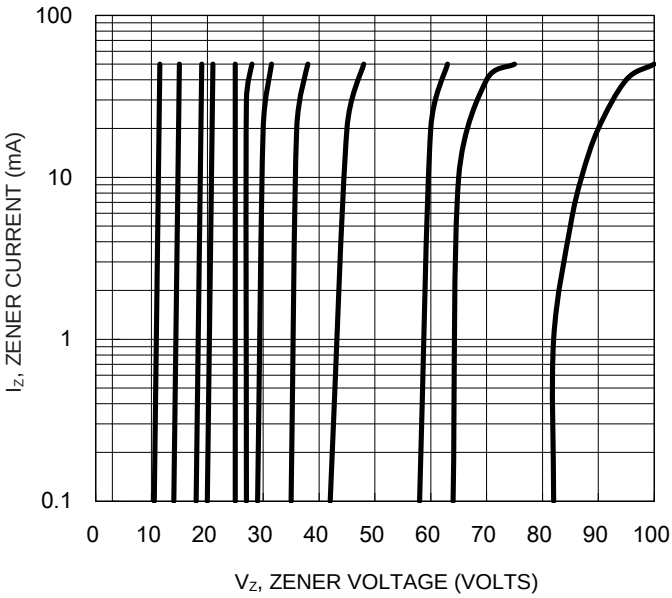


Fig.7 V_Z 100V - 200V

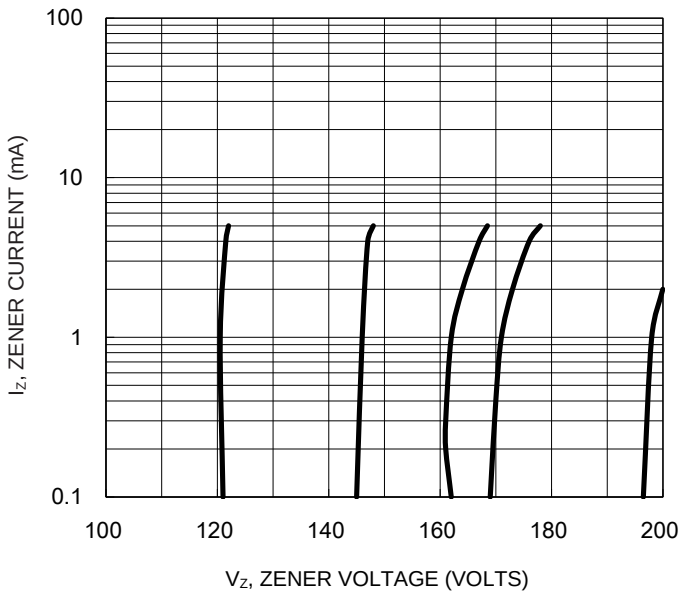
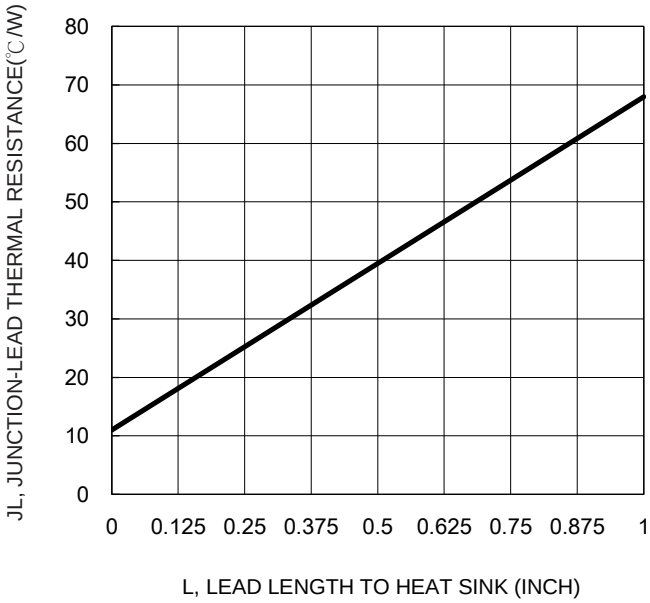


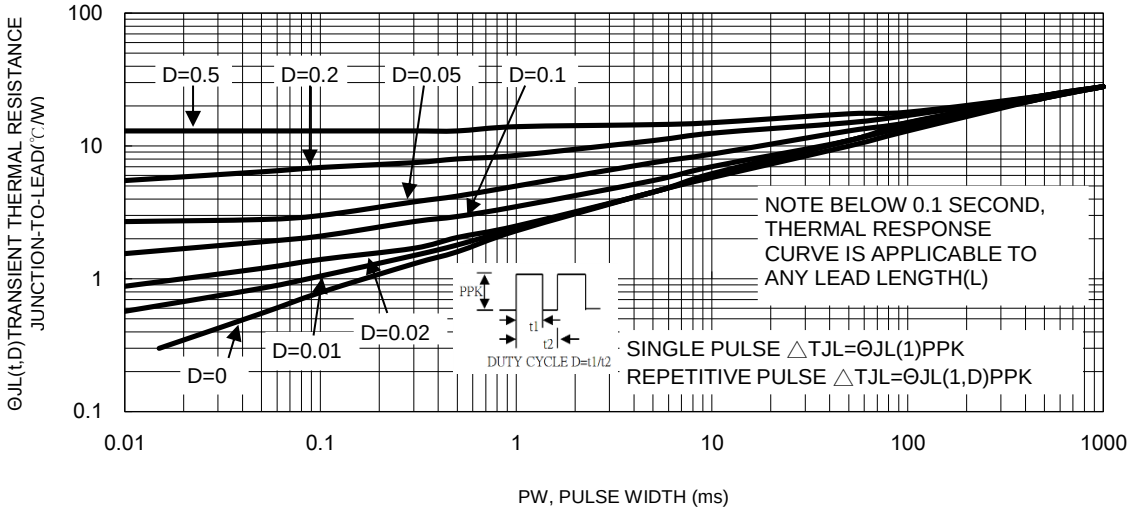
Fig.8 Typical Thermal Resistance



CHARACTERISTICS CURVES

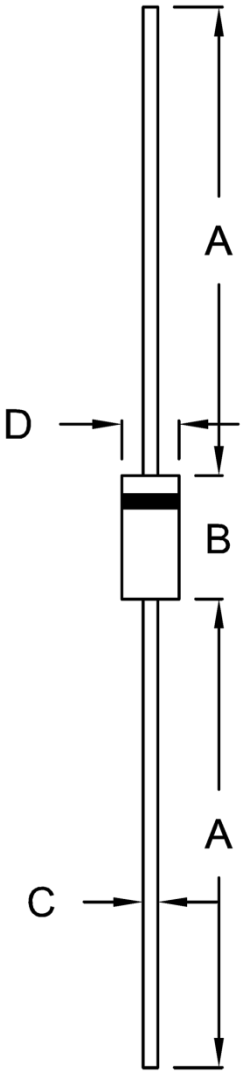
(T_A = 25°C unless otherwise noted)

Fig.9 Typical Thermal Response



PACKAGE OUTLINE DIMENSIONS

DO-204AC (DO-15)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	5.80	7.60	0.228	0.299
C	0.70	0.90	0.028	0.035
D	2.60	3.60	0.102	0.142

MARKING DIAGRAM

P/N = Marking Code
G = Green Compound
YWW = Date Code
F = Factory Code

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