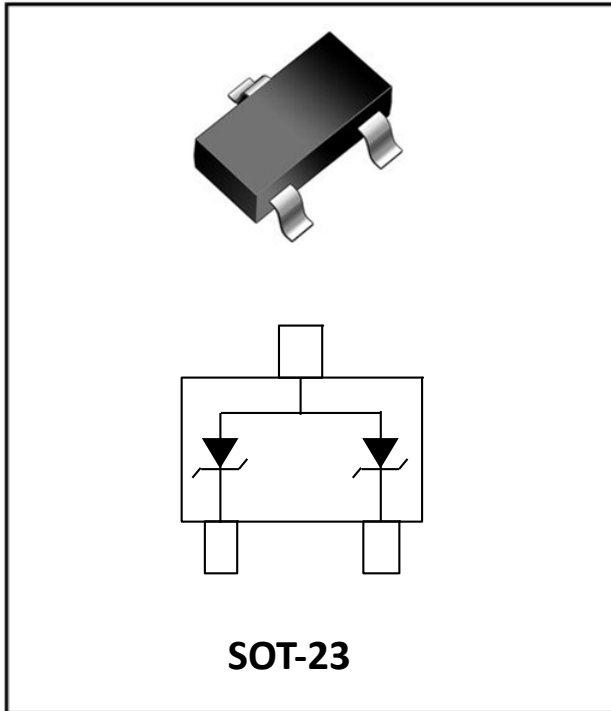


Zener Diodes, 40 Watt Peak Power Dual Common Anode Zeners



Features

- SOT-23 Package Allows Either Two Separate Unidirectional Configurations or a Single Bidirectional Configuration
- Peak Power-40W@1.0ms(Unidirectional)
- Transient protection for each line according to IEC61000-4-2(ESD): $\pm 30\text{kV}$ contact, $\pm 30\text{kV}$ air
- ESD Rating: Class 3B($> 16\text{kV}$)per the HBM
- Maximum Clamping Voltage@Peak Pulse Current
- RoHS Compliant
- Part no. with suffix "Q" means AEC-Q101 qualified

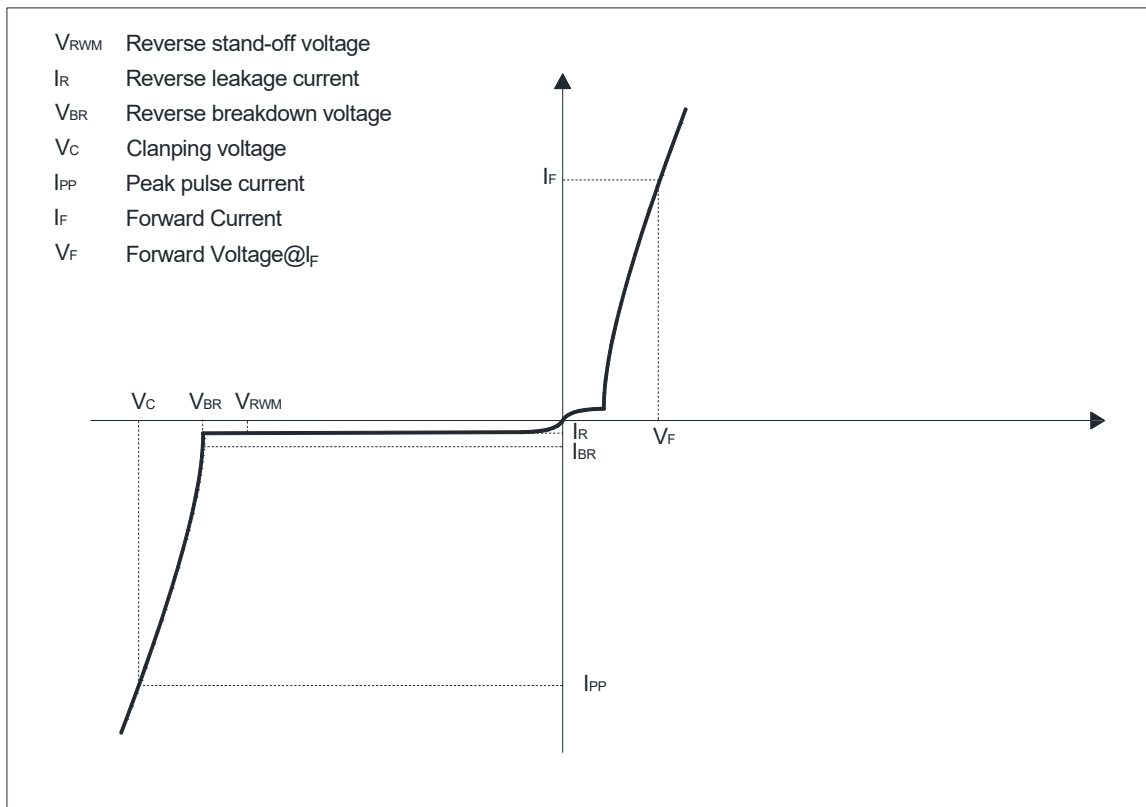
Applications

- Test Equipment/Instrumentation
- Notebooks / Desktops / Servers
- Computer Peripherals
- Automotive applications

Mechanical Data

- Package: SOT-23
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Moisture Sensitivity: Level 1 per J-STD-020

■Definitions of electrical characteristics





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■ Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ($t_p = 10/1000\mu s$)	P_{pk}	40	W
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	KV
ESD according to IEC61000-4-2 contact discharge		± 30	
Power Dissipation	P_D	225	mW
Thermal Resistance Junction to Ambient	R_{thJA}	556	$^{\circ}C/W$
Junction temperature	T_J	-55~150	$^{\circ}C$
Storage temperature	T_{STG}	-55~150	$^{\circ}C$

Notes:

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the component. This is a stress only rating and operation of the component at these or any other conditions above those indicated in the operational sections of this specification is not implied.

■ Electrical Characteristics ($T_J=25^{\circ}C$)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse Standoff Voltage	V_{RWM}	V				8.5
Reverse breakdown voltage	V_{BR}	V	$I_{BR} = 1mA$	11.4	12	12.6
Reverse leakage current	I_R	nA	$V_{RWM} = 8.5V$			200
Forward Voltage	V_F	V	$I_F = 10mA$			0.9
Clamping voltage	V_C	V	$I_{PP} = 2.35A, t_p = 10/1000\mu s$			17
Junction Capacitance	C_j	pF	$V_R=V_F=0V, f=1MHz$		113	

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMBZ12VAHQ	F2	Approximate 10	3000	30000	120000	7 reel

■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. Body color: Black
4. M12% is Marking Code (%=placeholder for date code)

*Date Code vary depending upon production date.



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■ Characteristics (Typical)

Fig.1: P_D - T_A

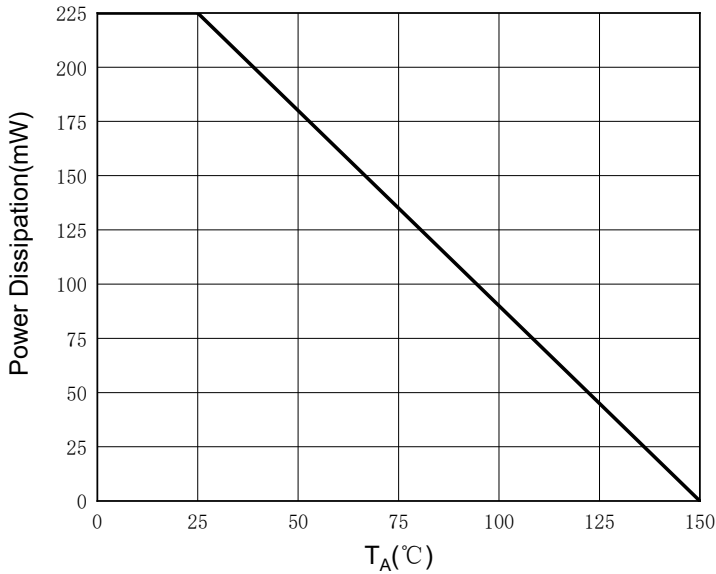


Fig.2: Typical Breakdown Voltage VS Temperature

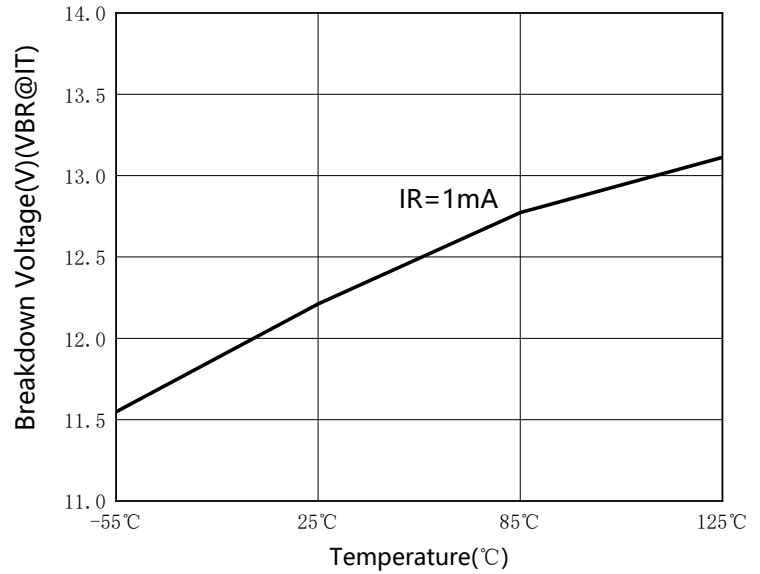


Fig.3: Capacitance Characteristics

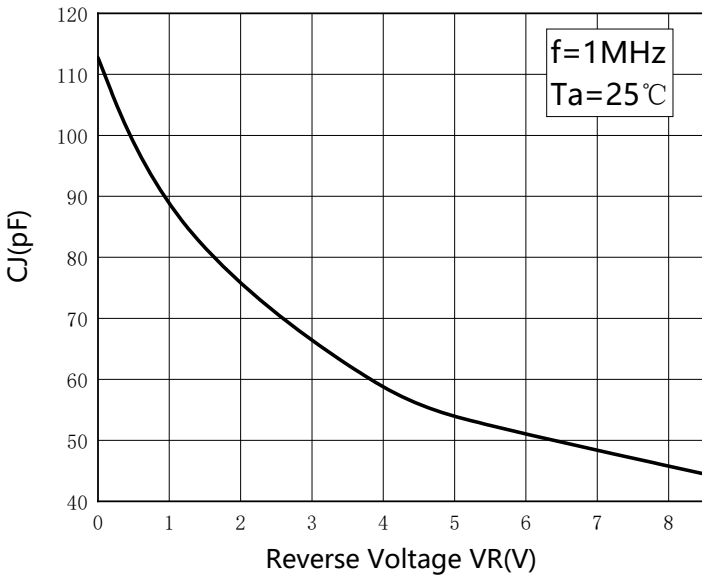


Fig.4 Pulse Waveform

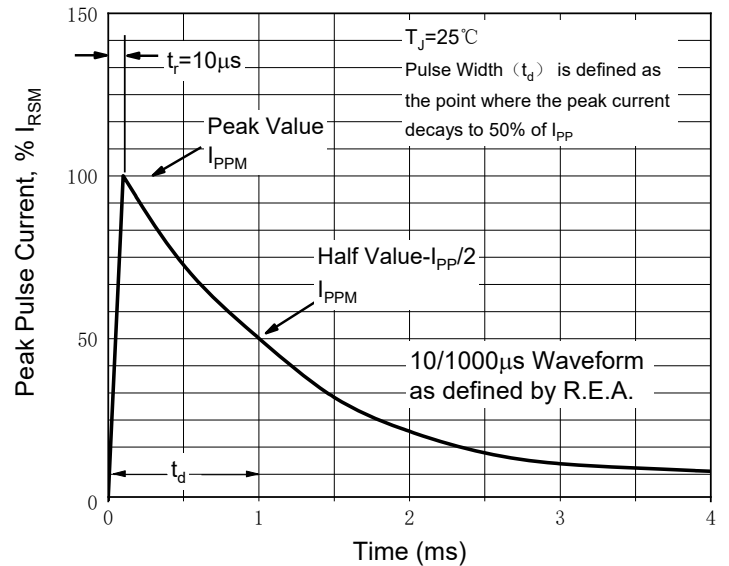
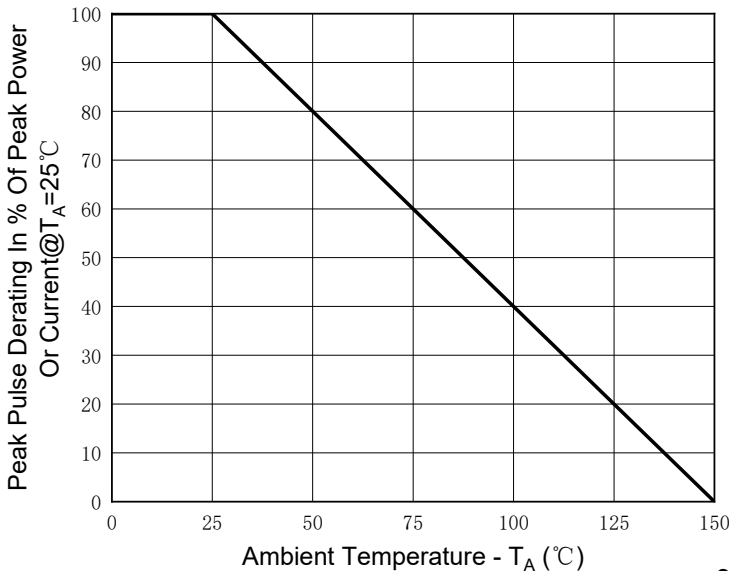


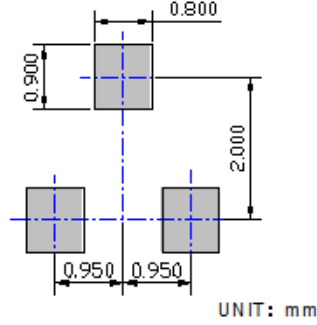
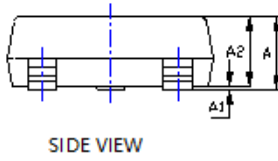
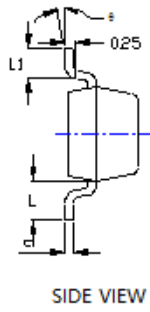
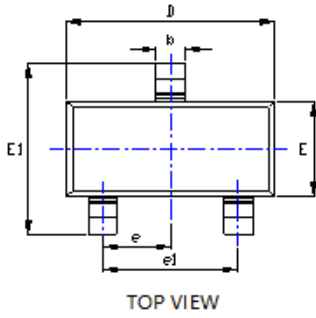
Fig.5: Power Derating Curve





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■ Outline Dimensions



SUGGESTED SOLDER PAD LAYOUT

SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
φ	0°	8°	0°	8°

NOTE:
 1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
 2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
 3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



MMBZ12VAHQ

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