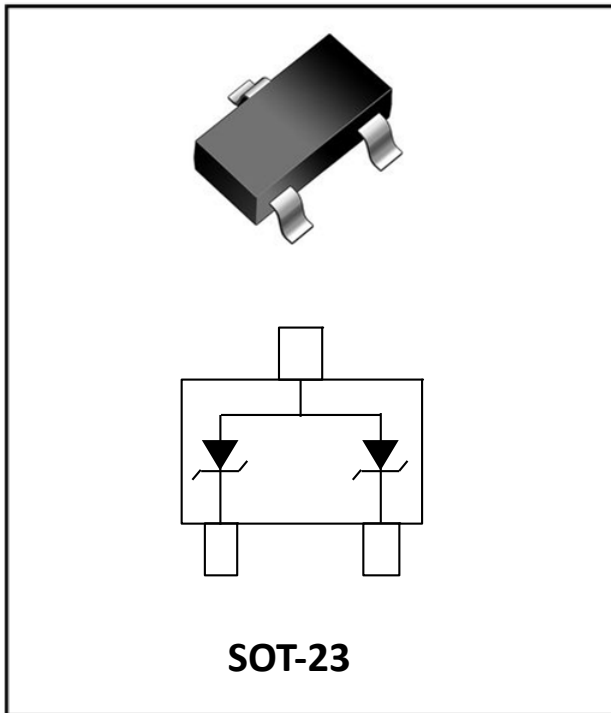


## Zener Diodes, 40 Watt Peak Power Dual Common Anode Zeners



### 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

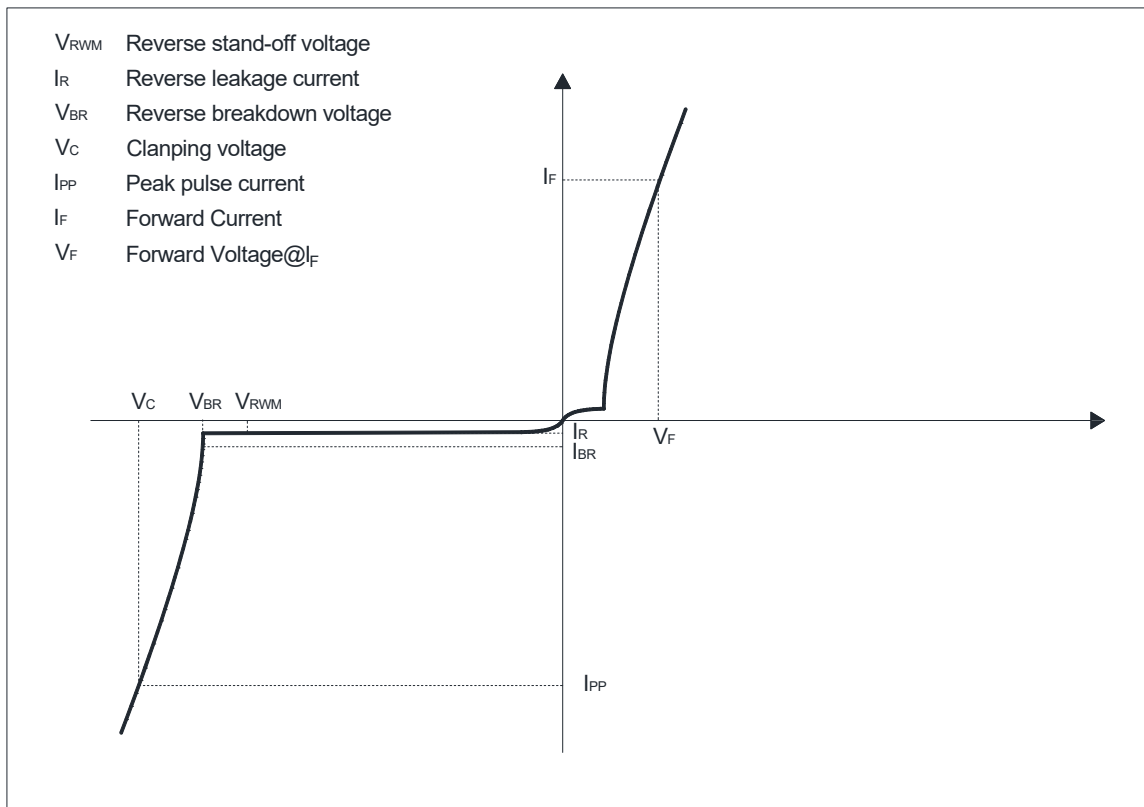
### Applications

- 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





# MMBZ15VAHQ

## ■ 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	$V_{ESD}$	$\pm 30$	KV
ESD according to IEC61000-4-2 contact discharge		$\pm 30$	
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.

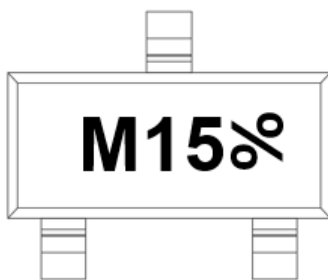
## ■ Electrical Characteristics ( $T_J=25^{\circ}C$ )

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse Standoff Voltage	$V_{RWM}$	V				12
Reverse breakdown voltage	$V_{BR}$	V	$I_{BR} = 1mA$	14.25	15	15.75
Reverse leakage current	$I_R$	nA	$V_{RWM} = 12V$			50
Forward Voltage	$V_F$	V	$I_F = 10mA$			0.9
Clamping voltage	$V_C$	V	$I_{PP} = 1.9A, t_p = 10/1000\mu s$			21
Junction capacitance	$C_J$	pF	$V_R = 0V, f = 1MHz$		95	

## ■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMBZ15VAHQ	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. M15% is Marking Code (%=placeholder for date code)

\*Date Code vary depending upon production date.



# MMBZ15VAHQ

## ■ Characteristics (Typical)

Fig.1:  $P_D-T_A$

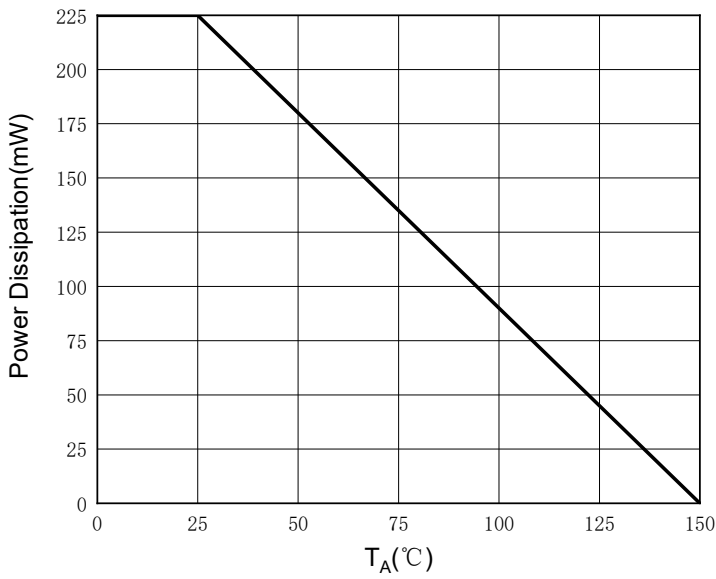


Fig.2: Typical Breakdown Voltage VS Temperature

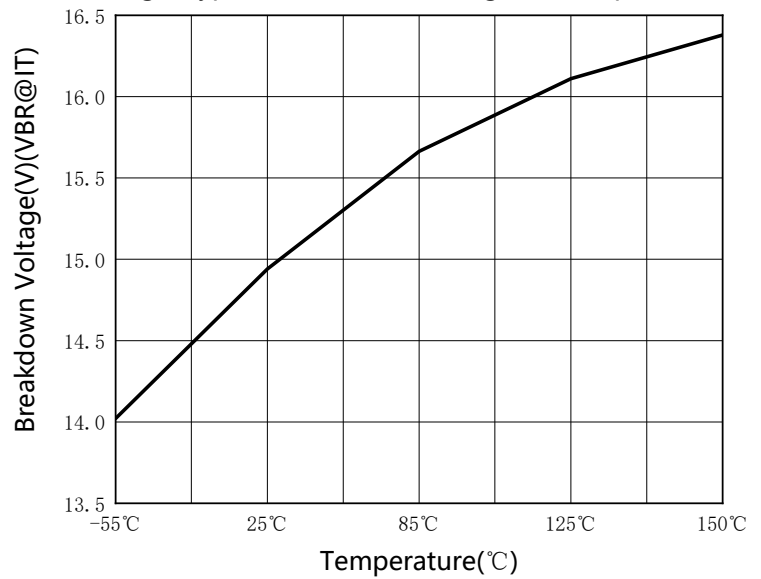


Fig.3: Reverse Characteristics

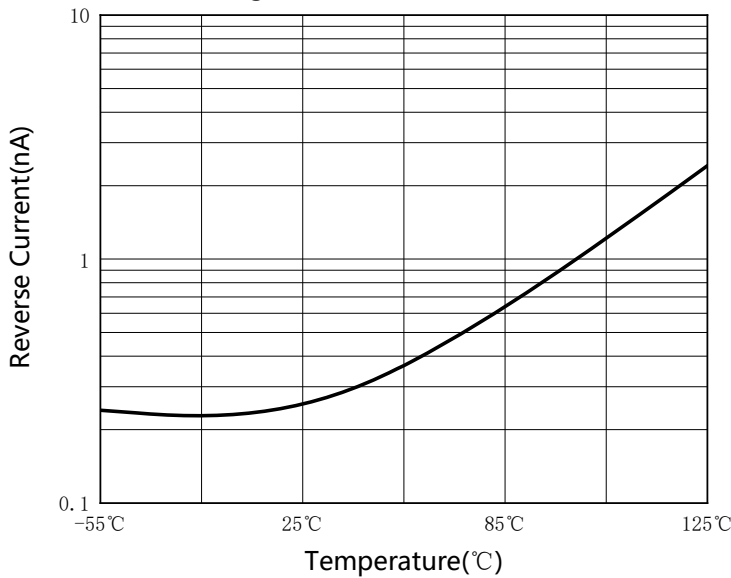


Fig.4 Pulse Waveform

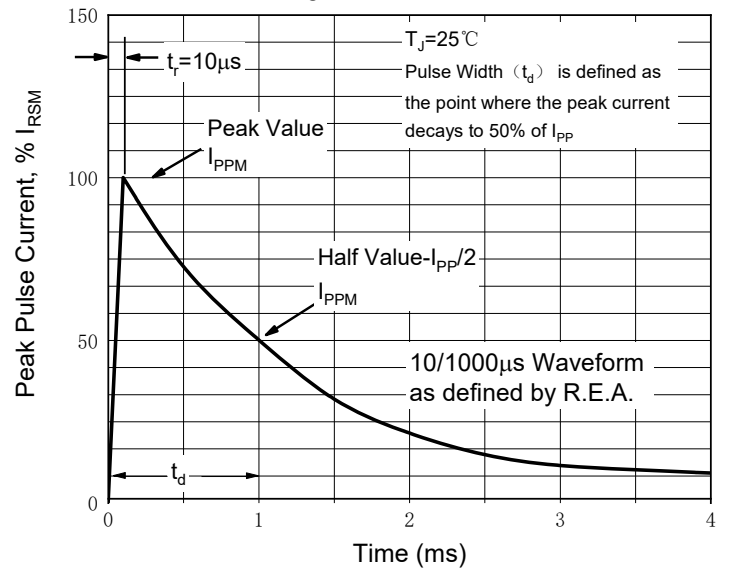


Fig.5: Power Derating Curve

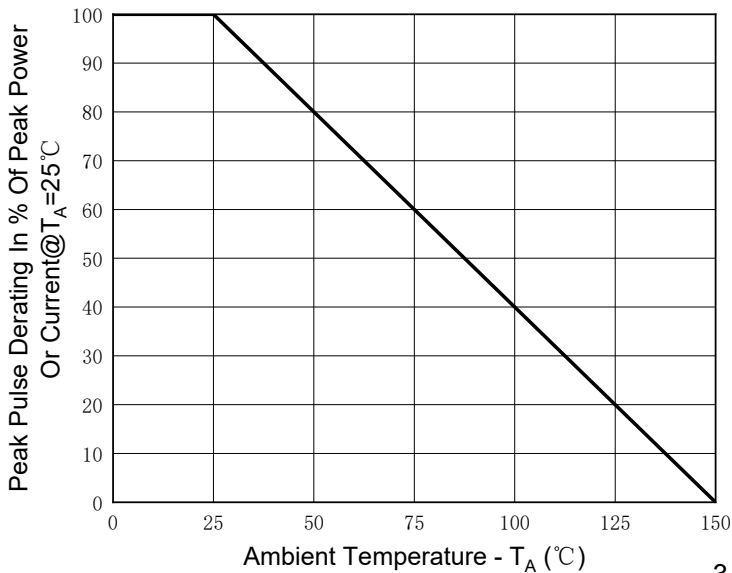
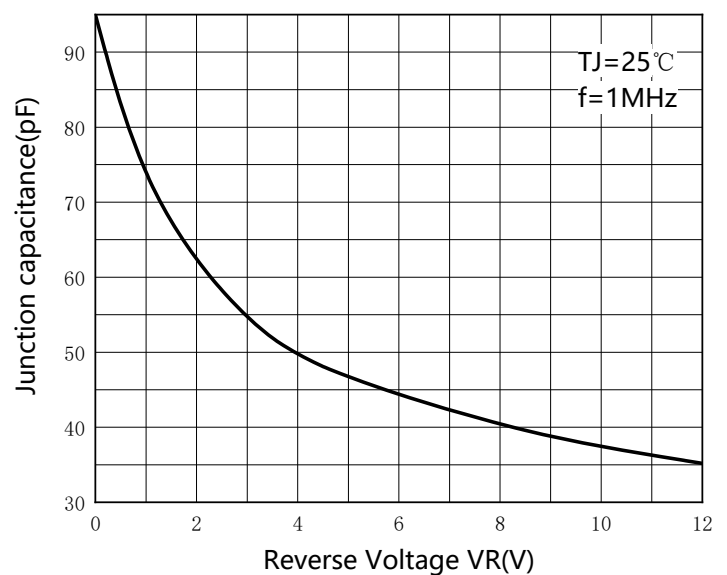


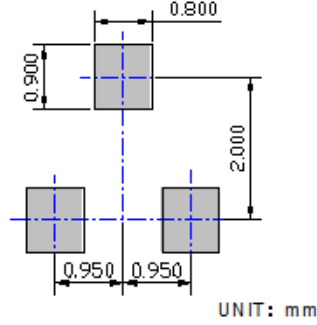
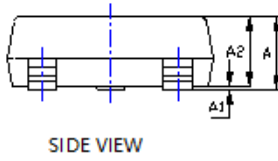
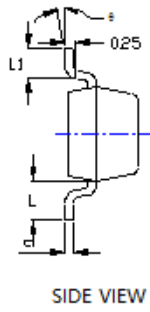
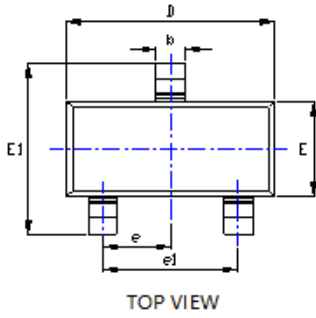
Fig.6: Capacitance Characteristics





# MMBZ15VAHQ

## ■ Outline Dimensions



UNIT: mm

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.



## MMBZ15VAHQ

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