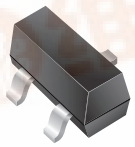
MMBZ6V8DC/A thru MMBZ27VDC/A

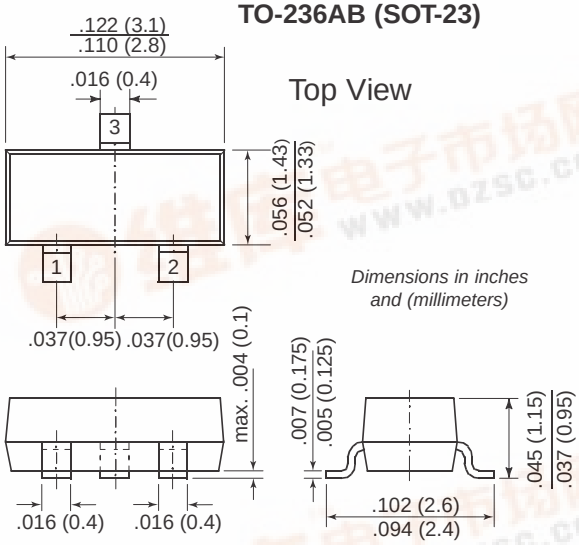
New Product

Vishay Semiconductors
formerly General Semiconductor

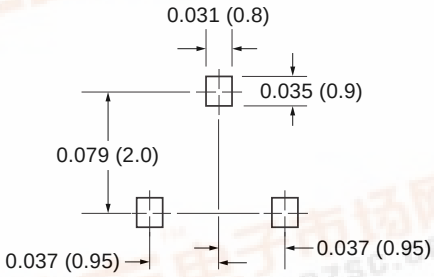


Dual Zener Transient Voltage Suppressor Diodes for ESD Protection

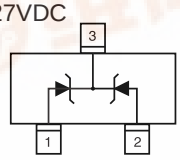
TO-236AB (SOT-23)



Mounting Pad Layout



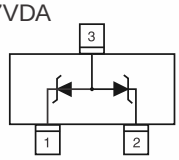
MMBZ15VDC
MMBZ27VDC



Common Cathode

Top View

MMBZ15VDA
MMBZ27VDA



Common Anode

Marking:

MMBZ15VDC = TC5	MMBZ15VDA = TA5
MMBZ27VDC = TC7	MMBZ27VDA = TA7
MMBZ6V8DC = ?	MMBZ6V8DA = ?

Mechanical Data

Case: SOT-23 Plastic Package

Weight: approx. 0.008g

Terminals: Solderable per MIL-STD-750, method 2026

Packaging Codes/Options:

E8/10K per 13” reel (8mm tape)
E9/3K per 7” reel (8mm tape)

Features

- Dual Silicon Planar Zener Diodes with Common Cathode or Common Anode configurations.
- Dual package provides for Bidirectional or separate unidirectional configurations.
- The dual configurations protect two separate lines with only one device.
- Peak Power: 40 watts @1ms (Bidirectional) .
- High temperature Soldering Guaranteed: 230˚C for 10 seconds.
- Ideal for ESD Protection.
- For bidirectional operation, circuit connected to pins 1 and 2. For unidirectional operation, circuit connected to pins 1 and 3 or pins 2 and 3.

Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise noted)

Parameter		Symbol	Value	Unit
Peak Power Dissipation(1) @ $T_A \leq 25^\circ C$		P_{pk}	40(4)	W
Total Power Dissipation on FR-5 Board(2)	at T_A = 25°C Derate above 25˚C	P_D	225 1.8	mW mW/˚C
Total Power Dissipation on Alumina Substrate(3)	at T_A = 25°C Derate above 25˚C	P_D	300 2.4	mW mW/˚C
Thermal Resistance Junction to Ambient Air		$R_{\Theta JA}$	556	°C/W
Operating and Storage Temperature Range		T_J, T_{stg}	–55 to +150	°C

Notes:
(1) Nonrepetitive current pulse per Figure 2 and derate above TA = 25°C per Figure 3.
(2) FR-5 = 1.0 x 0.75 x 0.62 in.
(3) Alumina = 0.4 x 0.3 x 0.024 in., 99.5% alumina.
(4) The MMBZ6V8DC/A is rated at 24V

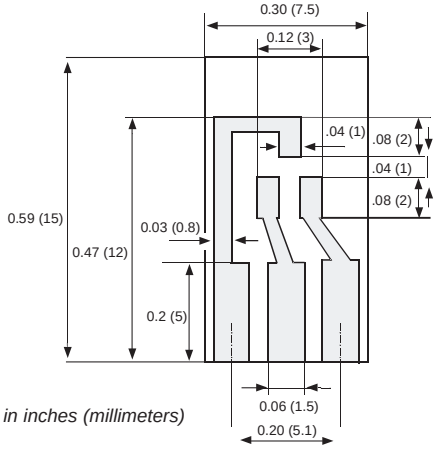
Electrical Characteristics (T_J = 25°C unless otherwise noted)

Type	Breakdown Voltage V_{BR} (Volts)(1) Min	Nom	Max	@I_T mA	Working Peak Reverse Voltage V_{RWM} (Volts)	Max Reverse Leakage Current I_R (nA)	Max Reverse Surge Current I_{PP} (Amps)	Max Reverse Voltage @ I_{RSM}(2) (Clamping Voltage) V_C (Volts)	Max Temperature Coefficient of V_{BR} (mV/°C)	Max Forward Voltage V_F (Volts)	@I_F (mA)
MMBZ6V8D	6.48	6.8	7.14	1.0	4.5	500	2.5	9.6	3.4	1.1	200
MMBZ15VD	14.30	15.00	15.80	1.0	12.8	100	1.9	21.2	16	0.9	200
MMBZ27VD	25.65	27.00	28.35	1.0	22.0	80	1.0	38.0	30	1.1	200

Notes: (1) V_{BR} measured at pulse test current IT at an ambient temperature of 25°C
(2) Surge current waveform per Figure 2 and derate per Figure 3

Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

Layout for $R_{\Theta JA}$ test
Thickness: Fiberglass 0.059 in (1.5 mm)
Copper leads 0.012 in. (0.3mm)



Dimensions in inches (millimeters)

FIG. 1 - STEADY STATE POWER DERATING CURVE

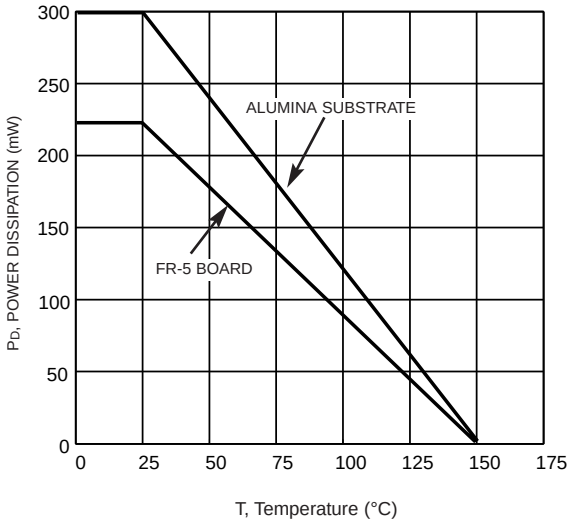


FIG. 2 - PULSE WAVEFORM

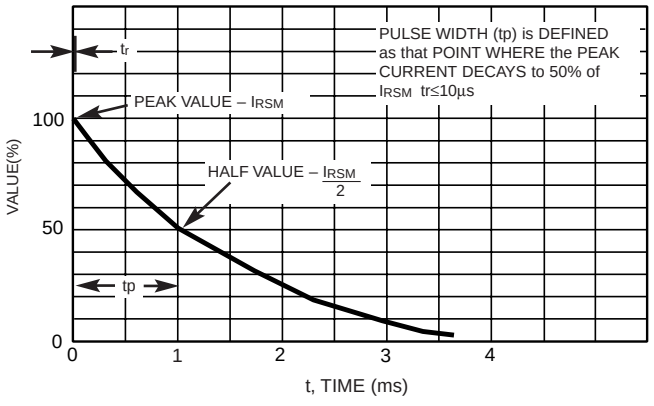


FIG. 3 - PULSE DERATING CURVE