



MMBZ15VDL, MMBZ27VCL

40W PEAK POWER DUAL SURFACE MOUNT TVS

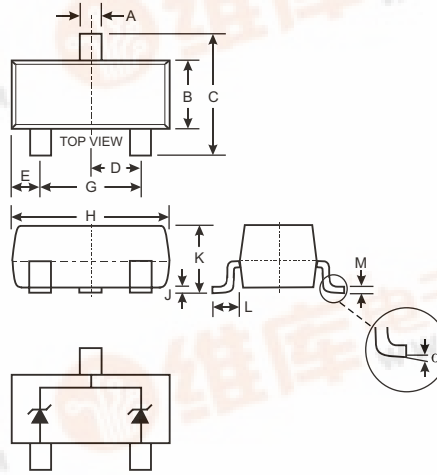
NEW PRODUCT

Features

- Dual TVS in Common Cathode Configuration for ESD Protection
- 40 Watt Peak Power Dissipation @ 1.0ms (Unidirectional)
- 225 mW Power Dissipation
- Ideally Suited for Automatic Insertion
- Low Leakage

Mechanical Data

- Case: SOT-23, Molded Plastic
- Case Material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Marking: Marking Code & Date Code, See Page 2
- Marking Code: See Table Below
- Weight: 0.008 grams (Approx.)
- Ordering Information: See Page 2



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°
All Dimensions in mm		

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	P _d	225	mW
Peak Power Dissipation (Note 2)	P _{PK}	40	W
Thermal Resistance, Junction to Ambient Air (Note 1)	R _{θJA}	420	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise noted

V_F = 0.9V max @ I_F = 10mA (Note 3)

Type Number	Marking Code	V _{RWM}	I _R @ V _{RWM}	Breakdown Voltage				V _C @ I _{PP} (Note 2)		Typical Temperature Coefficient T _C (%/°C)
				V _{BR} (Note 3) (V)			@ I _T	V _C	I _{PP}	
				Min	Nom	Max	mA	V	A	
MMBZ15VDL	KVJ	12.8	100	14.3	15	15.8	1.0	21.2	1.9	+0.080

V_F = 1.1V max @ I_F = 200mA (Note 3)

Type Number	Marking Code	V _{RWM}	I _R @ V _{RWM}	Breakdown Voltage				V _C @ I _{PP} (Note 2)		Typical Temperature Coefficient T _C (%/°C)
				V _{BR} (Note 3) (V)			@ I _T	V _C	I _{PP}	
				Min	Nom	Max	mA	V	A	
MMBZ27VCL	KVP	22	50	25.65	27	28.35	1.0	38	1.0	+0.090



Note: 1. Device mounted on FR-5 PCB 1.0 x 0.75 x 0.062 inch pad layout as shown on Diodes Inc. suggested pad layout AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>. 200mW per element must not be exceeded.

2. Non-repetitive current pulse per Figure 2 and derate above T_A = 25°C per Figure 1.

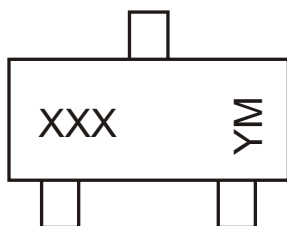
3. Short duration test pulse used to minimize self-heating effect.

Ordering Information (Note 4)

Device	Packaging	Shipping
MMBZ15VDL-7 MMBZ27VCL-7	SOT-23	3000/Tape & Reel

Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



XXX = Product Type Marking Code, ex: KVP = MMBZ27VCL
 YM = Date Code Marking
 Y = Year ex: N = 2002
 M = Month ex: 9 = September

Date Code Key

Year	2001	2002	2003	2004	2005	2006	2007	2008
Code	M	N	P	R	S	T	U	V

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

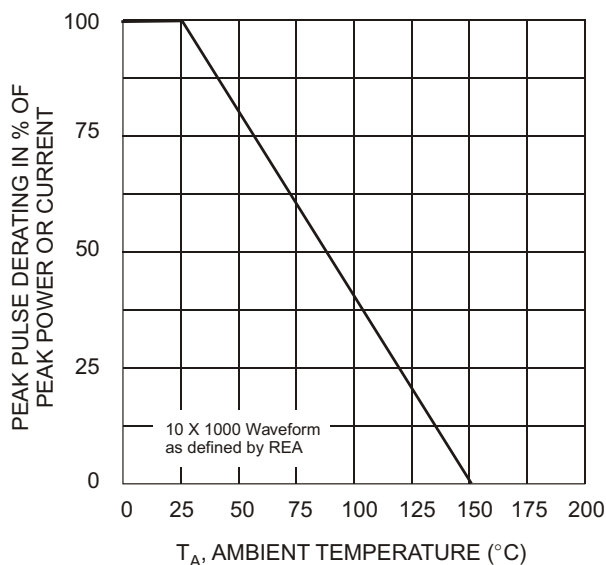


Fig. 1 Pulse Derating Curve

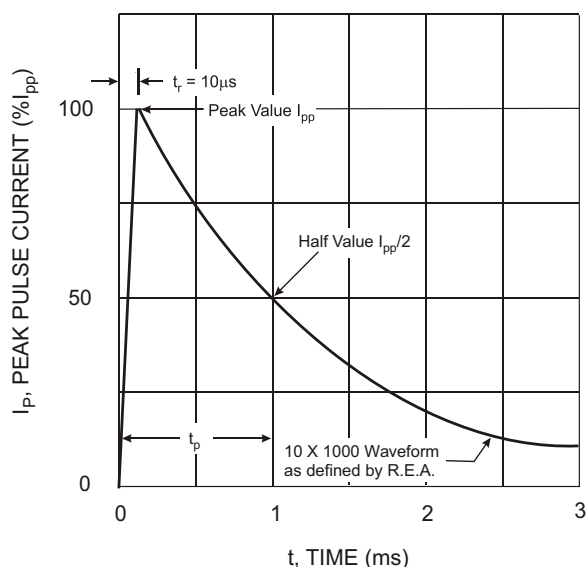


Fig. 2 Pulse Waveform

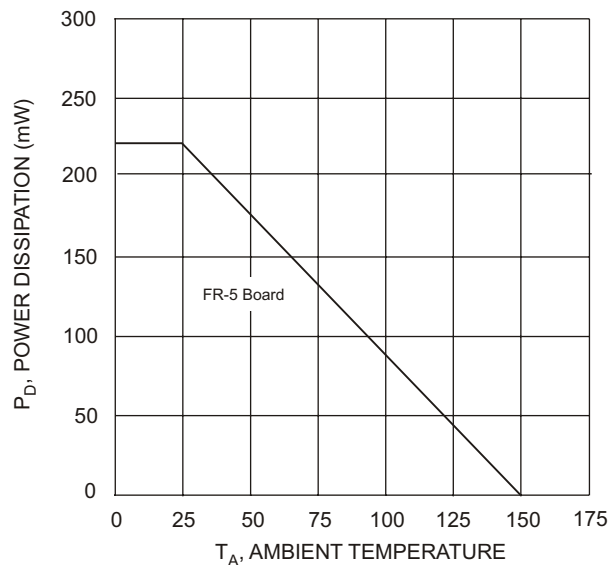


Fig. 3 Steady State Power Derating Curve

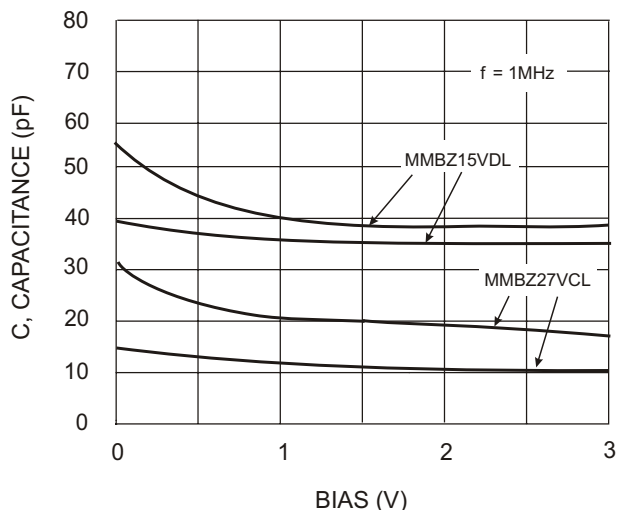


Fig. 4 Typical Capacitance vs. Bias Voltage (Lower curve is Bidirectional mode, Upper curve is Unidirectional mode)

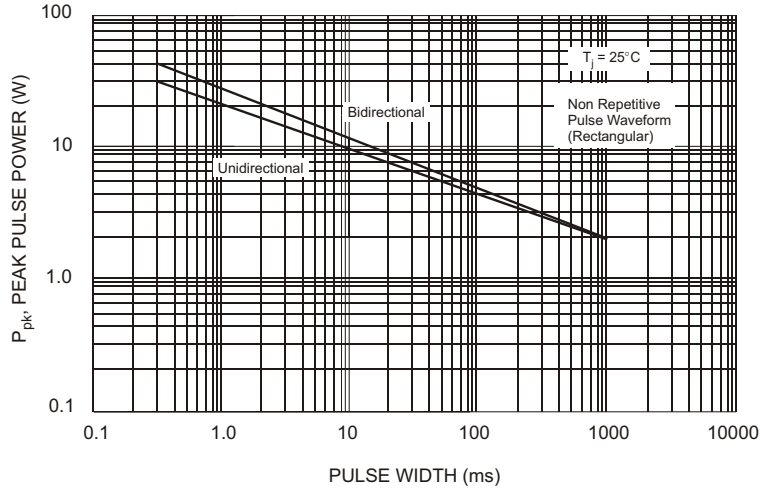


Fig. 5 Pulse Rating Curve,
 P_{pk} (W) vs. Pulse Width (ms)

Power is defined as $P_{pk} = V_c \times I_{pp}$

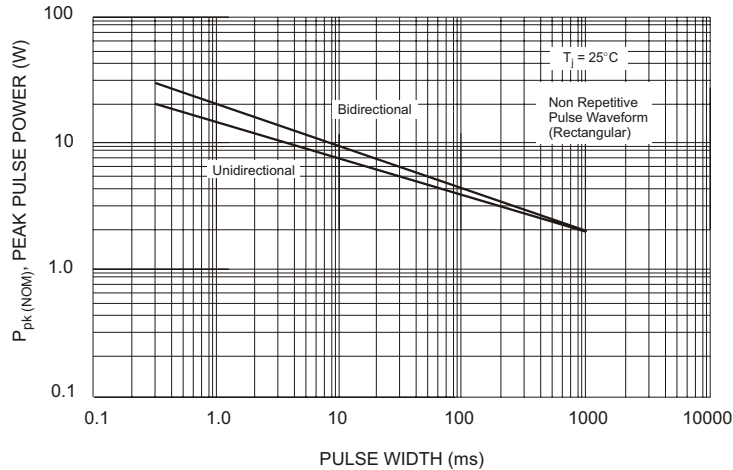


Fig. 6 Pulse Rating Curve,
 $P_{pk(NOM)}$ (W) vs. Pulse Width (ms)

Power is defined as $P_{pk(NOM)} = V_{BR(NOM)} \times I_{pp}$
where $V_{BR(NOM)}$ is the nominal breakdown voltage