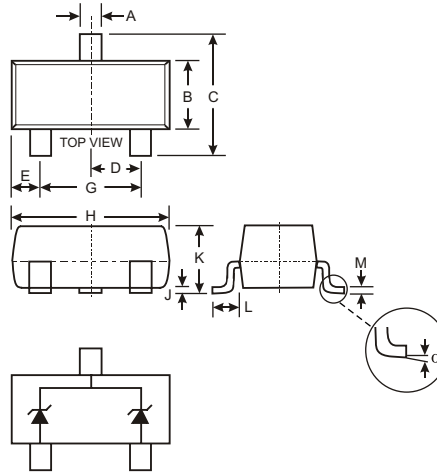


### Features

- 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
$\alpha$	0°	8°
All Dimensions in mm		

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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)	$R_{\theta JA}$	420	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_j, T_{STG}$	-65 to +150	$^\circ\text{C}$

### Electrical Characteristics

@ $T_A = 25^\circ\text{C}$  unless otherwise noted

#### $V_F = 0.9\text{V max @ } I_F = 10\text{mA (Note 3)}$

Type Number	Marking Code	$V_{RWM}$ Volts	$I_R @ V_{RWM}$ nA	Breakdown Voltage			$V_C @ I_{PP}$ (Note 2)		Typical Temperature Coefficient $T_C$ (%/ $^\circ\text{C}$ )	
				$V_{BR}$ (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

#### $V_F = 1.1\text{V max @ } I_F = 200\text{mA (Note 3)}$

Type Number	Marking Code	$V_{RWM}$ Volts	$I_R @ V_{RWM}$ nA	Breakdown Voltage			$V_C @ I_{PP}$ (Note 2)		Typical Temperature Coefficient $T_C$ (%/ $^\circ\text{C}$ )	
				$V_{BR}$ (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

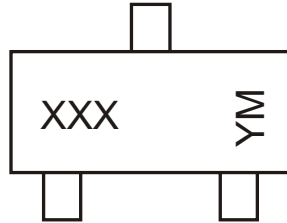
- Note:
1. Device mounted on FR-5 PCB 1.0 x 0.75 x 0.062 inch pad layout as shown on Diodes Inc. suggested pad layout AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>. 200mW per element must not be exceeded.
  2. Non-repetitive current pulse per Figure 2 and derate above  $T_A = 25^\circ\text{C}$  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

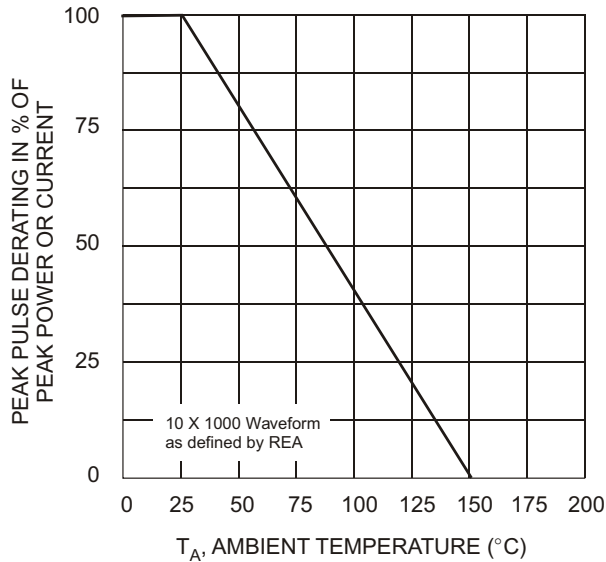


Fig. 1 Pulse Derating Curve

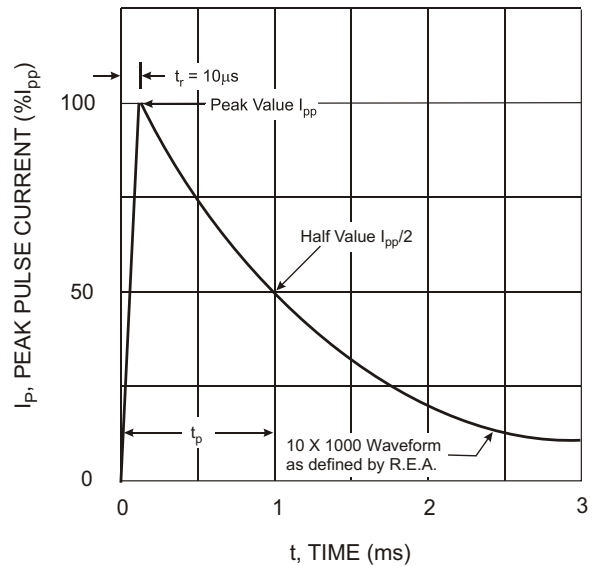


Fig. 2 Pulse Waveform

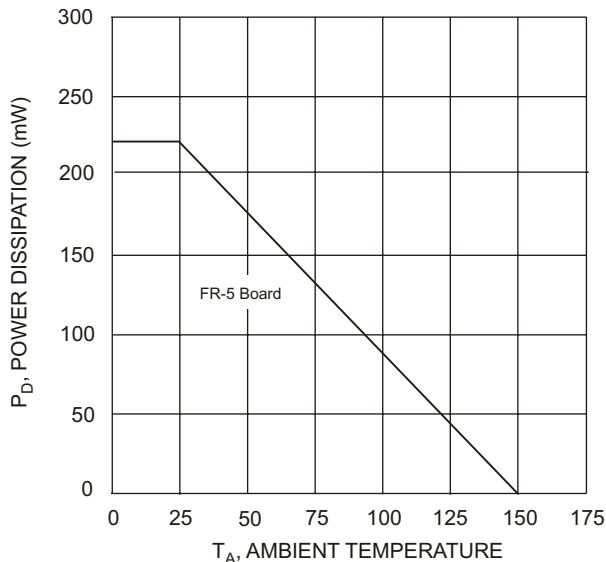


Fig. 3 Steady State Power Derating Curve

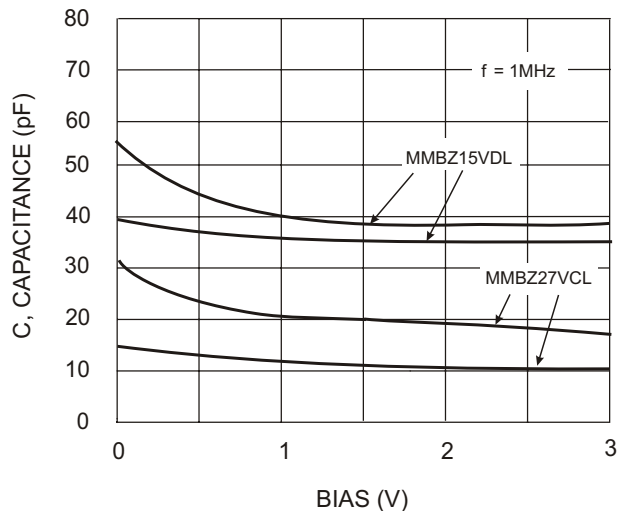


Fig. 4 Typical Capacitance vs. Bias Voltage  
 (Lower curve is Bidirectional mode,  
 Upper curve is Unidirectional mode)

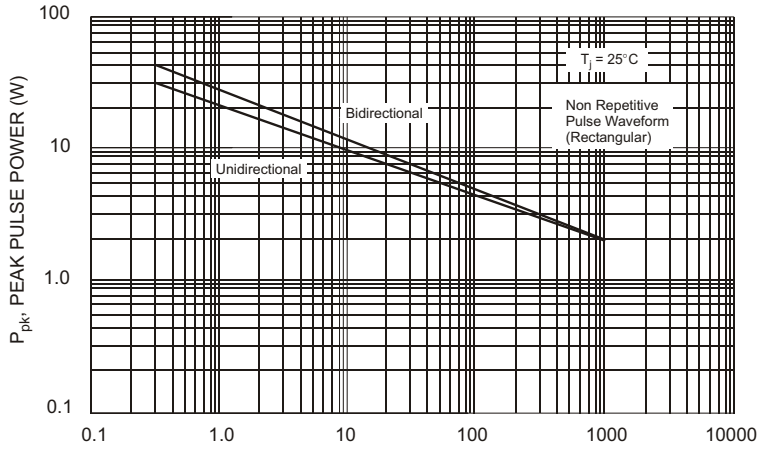


Fig. 5 Pulse Rating Curve,  
 $P_{pk}$  (W) vs. Pulse Width (ms)

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

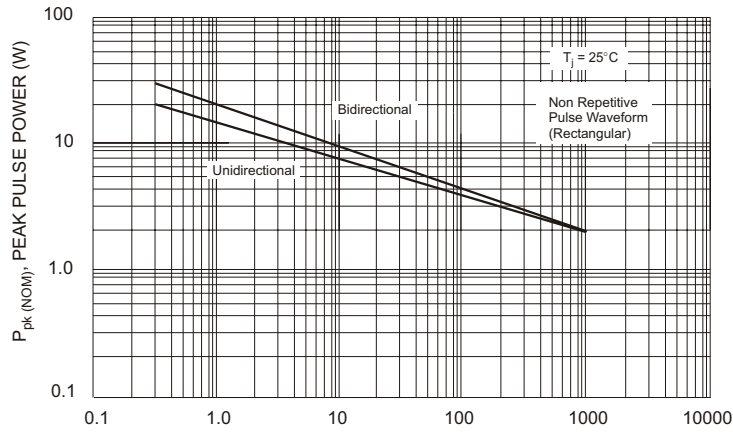


Fig. 6 Pulse Rating Curve,  
 $P_{pk(NOM)}$  (W) vs. Pulse Width (ms)

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