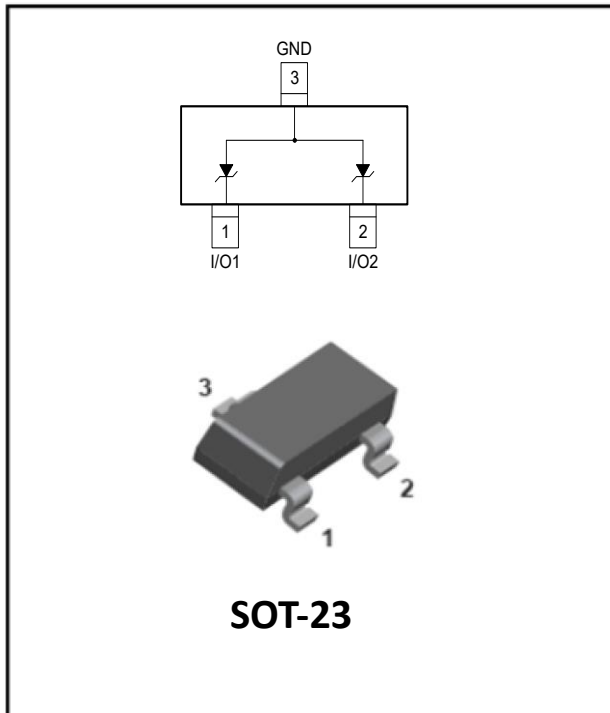


2-Line, Uni-directional, Transient Voltage Suppressor



Features

- Stand-off voltage: 26V
- Transient protection for each line according to
IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact/air)
IEC61000-4-5(surge): 0.87A (10/1000 μs)
- Low leakage current:
- Ultra low clamping voltage
- RoHS Compliant

Applications

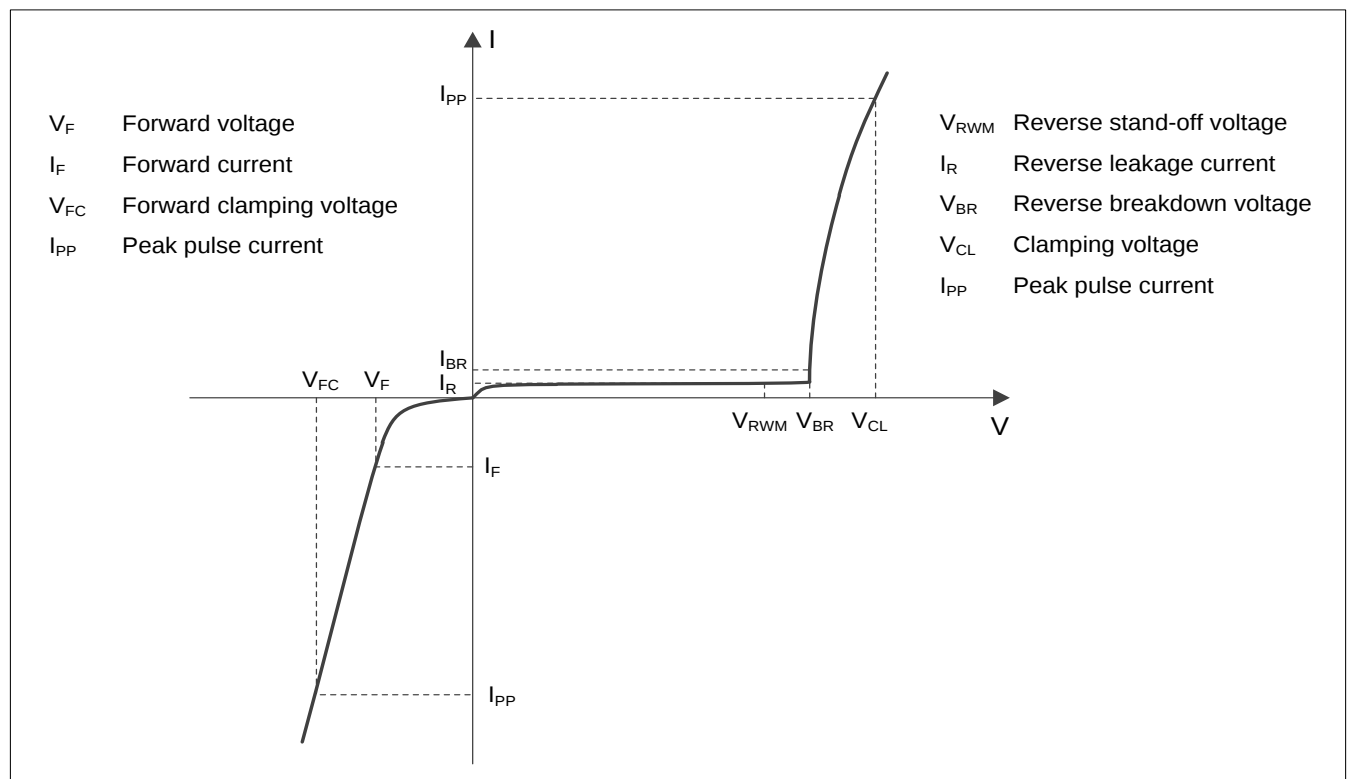
- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Portable Instrumentation
- Set Top Box
- Industrial Controls
- Server and Desktop PC

Mechanical Data

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



■ Definitions of electrical characteristics





MMBZ33VA

■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ($t_p = 10/1000\mu s$)	P_{pk}	40.02	W
Peak pulse current ($t_p = 10/1000\mu s$)	I_{PP}	0.87	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	KV
ESD according to IEC61000-4-2 contact discharge		± 30	
Junction temperature	T_J	-55~150	$^{\circ}C$
Storage temperature	T_{STG}	-55~150	$^{\circ}C$

■Electrical Characteristics ($T_a=25^{\circ}C$ Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				26
Reverse leakage current	I_R	nA	$V_{RWM} = 26V$			50
Reverse breakdown voltage	V_{BR}	V	$I_{BR} = 1mA$	31.35		34.55
Clamping voltage ²⁾	V_{CL}	V	$I_{PP} = 0.87A, t_p = 10/1000\mu s$			48
Junction Capacitance	C_J	pF	$V_R=0V, f=1MHz$		50	

Notes:

- (1). TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 2ns$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.
- (2). Non-repetitive current pulse, according to IEC61000-4-5.

■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMBZ33VA	F2	Approximate 10	3000	30000	120000	7" reel



■ Characteristics (Typical)

Fig1: Pulse Waveform

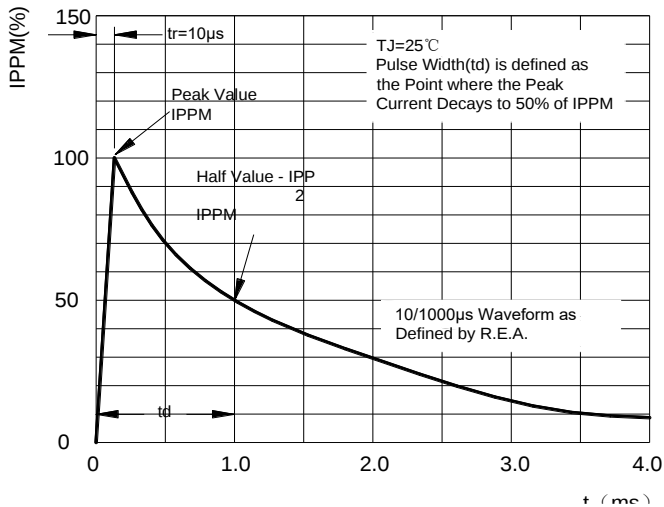


Fig 2: Contact discharge current waveform per IEC61000-4-2

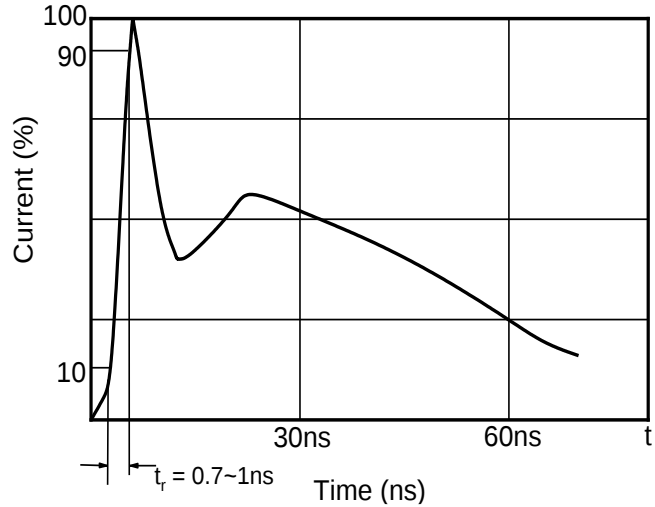


Fig3: Clamping voltage vs. Peak pulse current

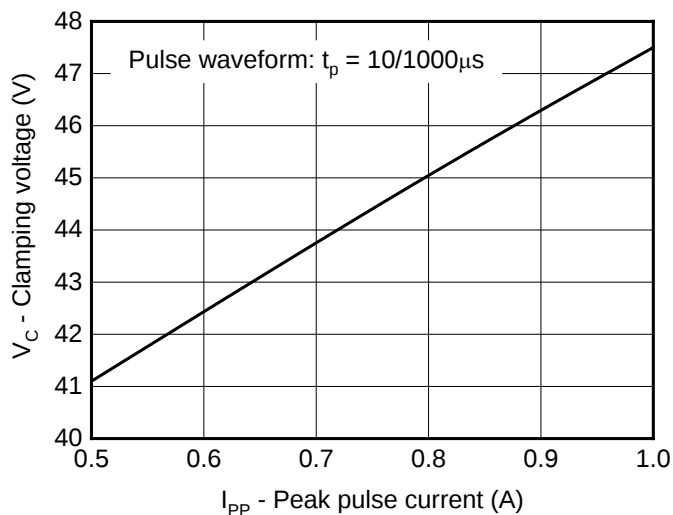


Fig4: Capacitance vs. Reverse voltage

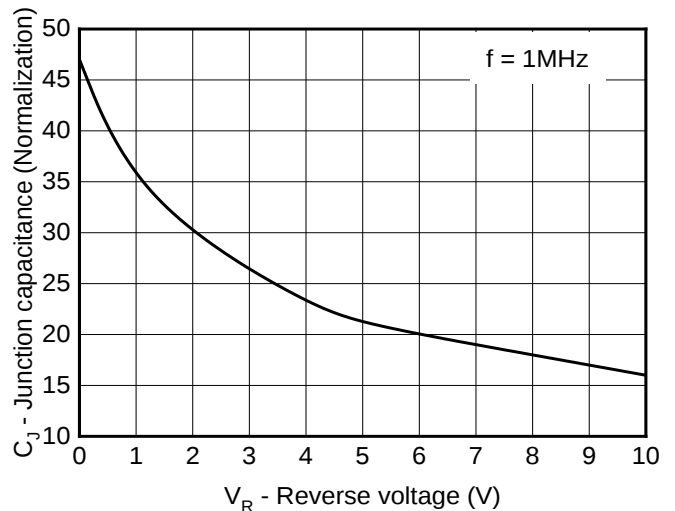


Fig5: Non-repetitive peak pulse power vs. Pulse time

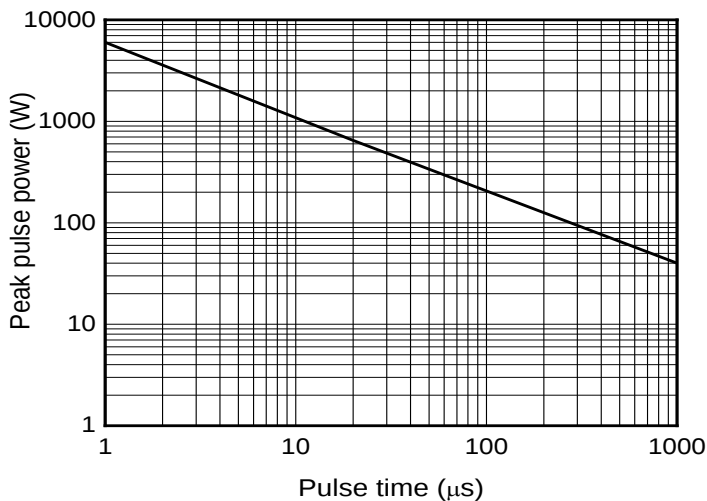
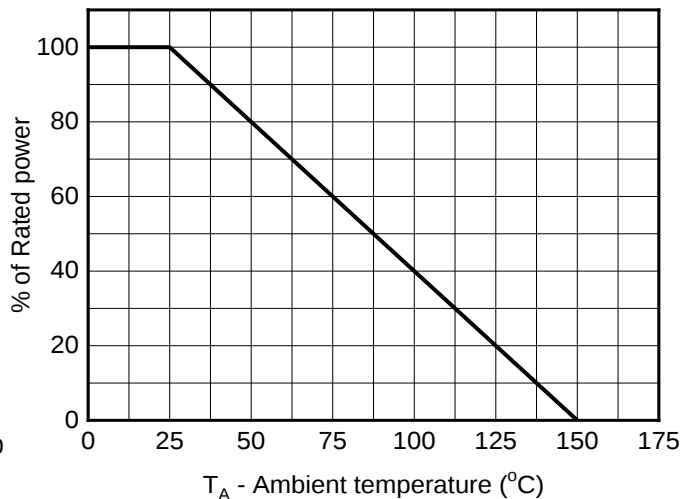
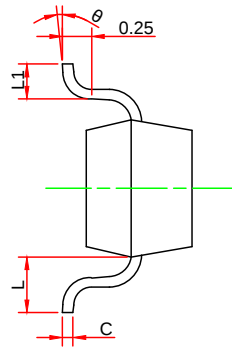
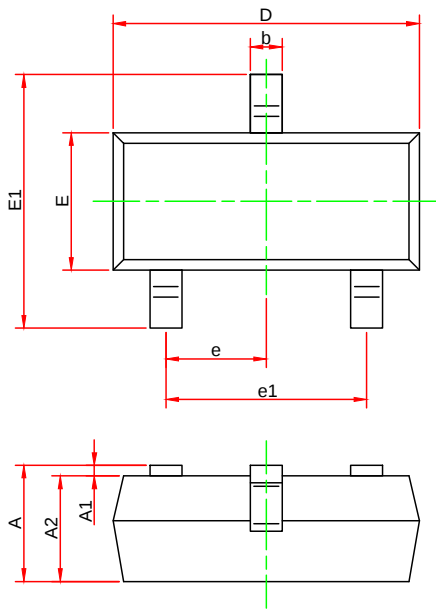


Fig6: Power derating vs. Ambient temperature



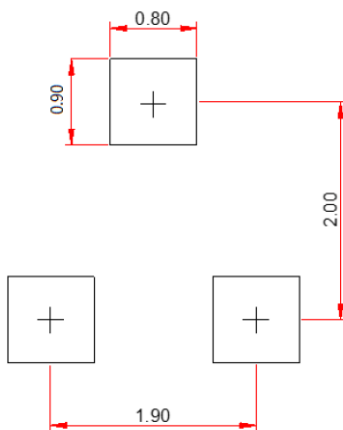


■ Outline Dimensions



Symbol	Dimensions in millimeters		
	Min.	Typ.	Max.
A	0.900	-	1.150
A1	0.000	-	0.100
A2	0.900	-	1.050
b	0.300	-	0.500
c	0.100	-	0.200
D	2.800	-	3.000
E	1.200	-	1.400
E1	2.250	-	2.550
e	0.950TYP		
e1	1.800	-	2.000
L	0.550REF		
L1	0.300	-	0.500
θ	0°	-	8°

■ Soldering Footprint



Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.



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