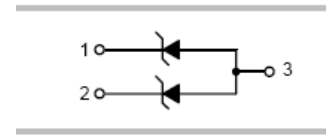


Features

- ESD / transient protection of high speed data lines
 - IEC 61000-4-2 (ESD): ± 20 kV (air), ± 15 kV (contact)
- ESD rating of Class 3B (> 16 kV) per the human body model
- Low leakage
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

HF

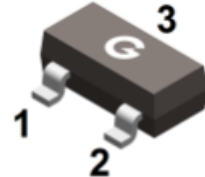


Typical Applications

- Transient overvoltage protection capability

Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOT-23

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TMMBZ33VAL	SOT-23	3000 pcs / Tape & Reel	33A

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Characteristic	Symbol	Value	Unit
Peak Power Dissipation ($t_p = 10/1000\mu\text{s}$)	P_{PK}	40	W

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation *1	P_D	300	mW
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	282	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	252	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	$-55 \sim +150$	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

Note 1: The data tested by surface mounted on a 15mm * 15mm * 1mm FR4-epoxy P.C.B

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Stand-off Voltage	V_{RWM}		-	-	26	V
Reverse Breakdown Voltage	$V_{(BR)}$	$I_T = 1\text{mA}$	31.35	33.00	34.65	V
Reverse Leakage Current	I_R	$V_{RWM} = 26\text{V}$	-	-	50	nA
Forward Voltage	V_F	$I_F = 10\text{mA}$	-	-	0.9	V
Clamping Voltage	V_{CC}	$I_{PP} = 0.87\text{A}$	-	-	46	V

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

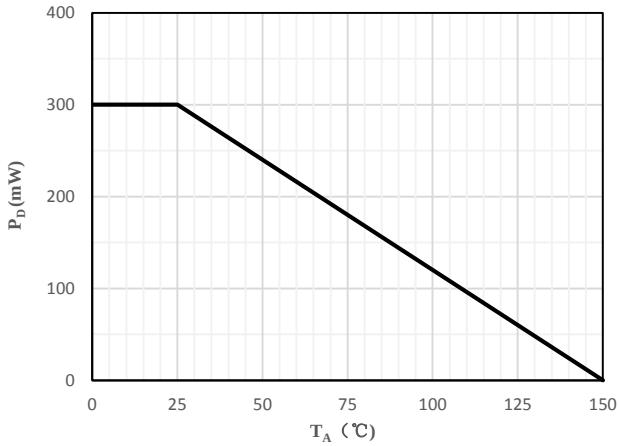


Fig 1 Power Derating Curve

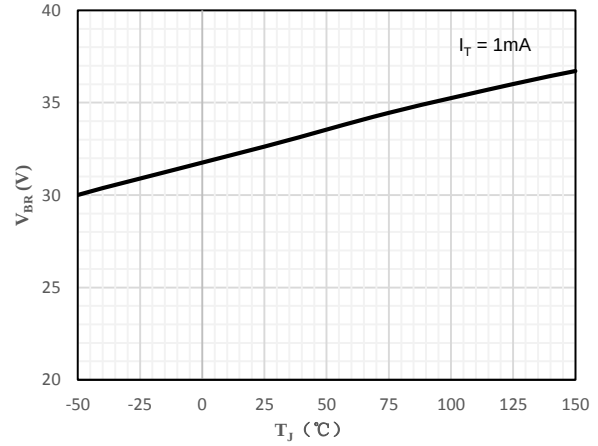


Fig 2 Typical Breakdown Voltage vs. Temperature

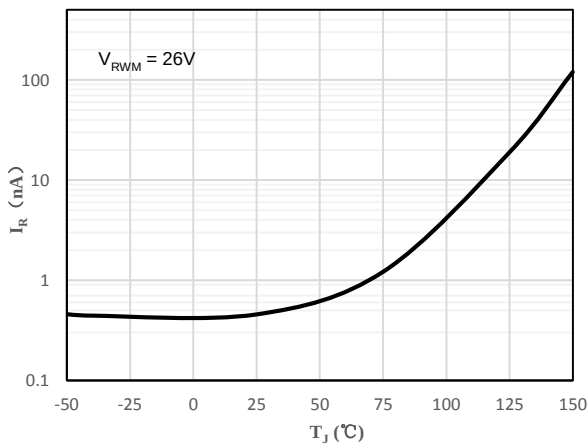


Fig 3 Typical Leakage Current vs. Temperature

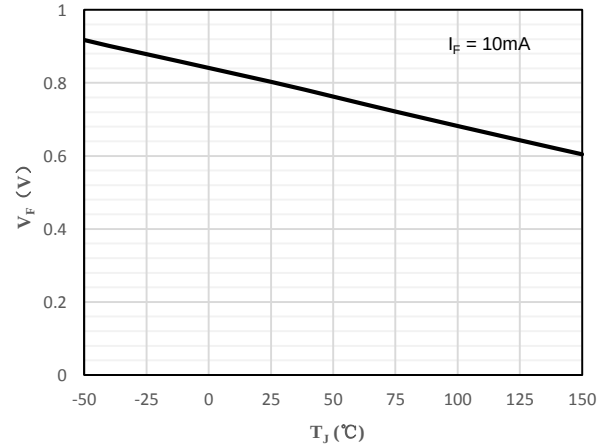


Fig 4 Typical Forward Voltage vs. Temperature

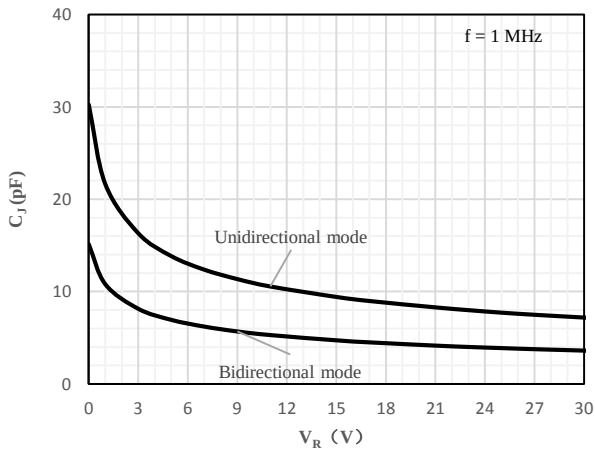


Fig 5 Junction Capacitance vs. Reverse Voltage

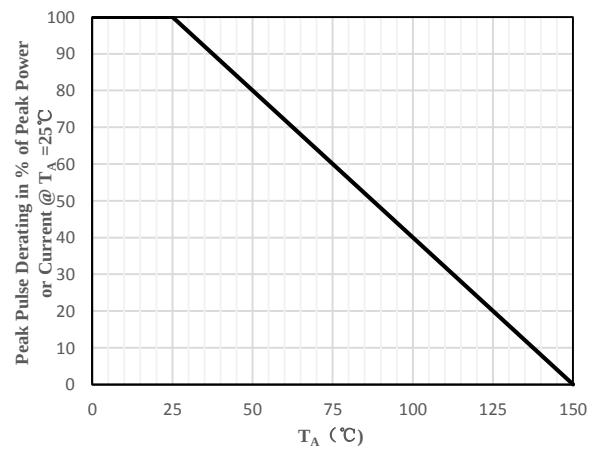


Fig 6 Pulse Derating Curve

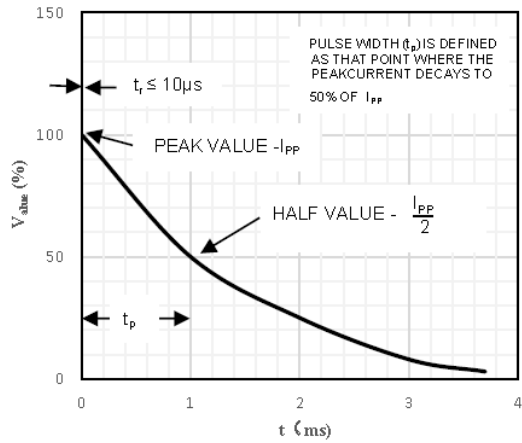
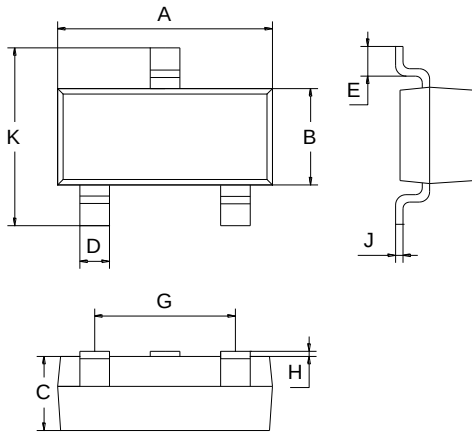


Fig 7 Pulse Waveform

Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.3	0.5
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23

