Dual Common Cathode Zeners for ESD Protection

MMBZ27VD

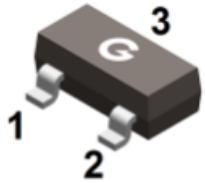
Features

HF

- ESD / transient protection of high speed data lines
  - IEC 61000-4-2 (ESD): ±30 kV (air), ±30 kV (contact)
- ESD rating of Class 3B (> 16kV) per the human body model
- Low leakage

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
MMBZ27VD	SOT-23	3000 pcs / Tape & Reel	27C

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Characteristic	Symbol	Value	Unit
Peak Power Dissipation (t_p = 1.0ms)	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	°C/W
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	282	°C/W
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	252	°C/W
Operating Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

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

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Stand-off Voltage	V_{RWM}		-	-	22	V
Reverse Breakdown Voltage	$V_{(BR)}$	I_T = 1mA	25.65	27	28.35	V
Reverse Leakage Current	I_R	V_{RWM} = 22V	-	-	50	nA
Forward Voltage	V_F	I_F = 10mA	-	-	0.9	V
Clamping Voltage	V_{CC}	I_{PP} = 1A	-	-	38	V

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

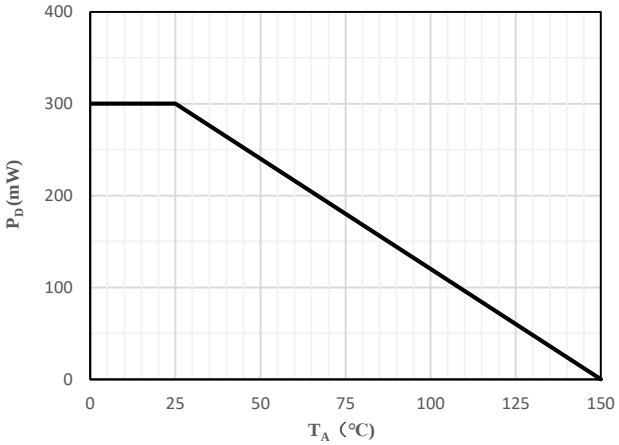


Fig 1 Power Derating Curve

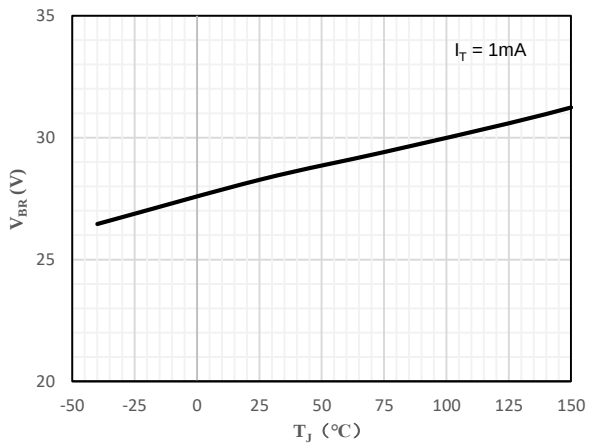


Fig 2 Typical Breakdown Voltage vs. Temperature

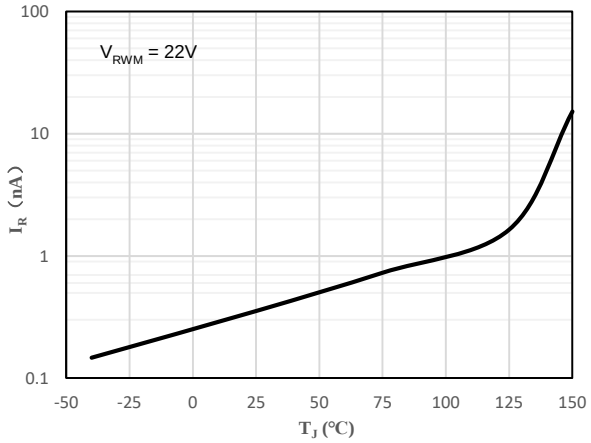


Fig 3 Typical Leakage Current vs. Temperature

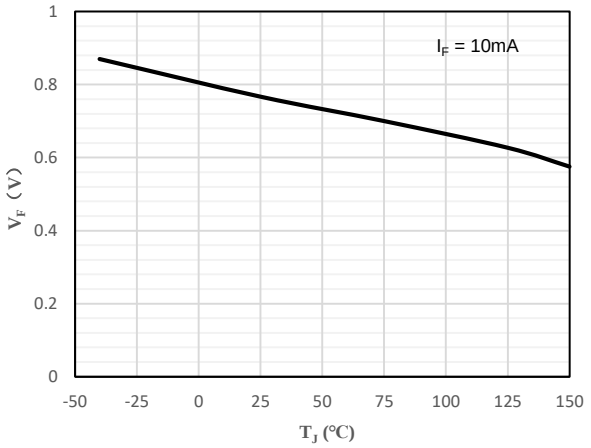


Fig 4 Typical Forward Voltage vs. Temperature

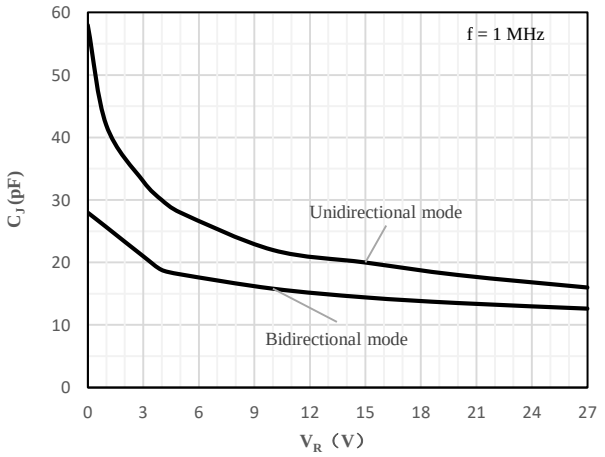


Fig 5 Junction Capacitance vs. Reverse Voltage

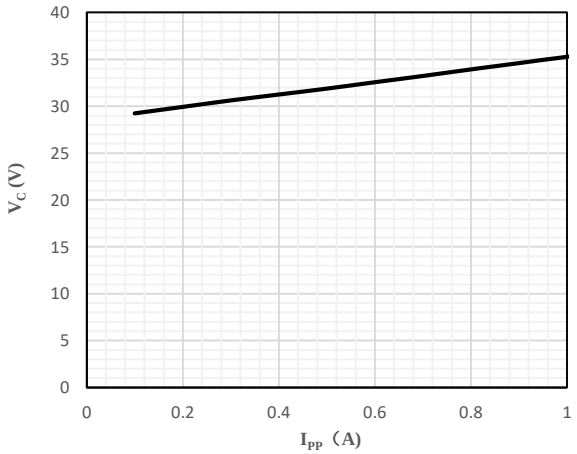


Fig 6 Clamping Voltage vs. Peak Pulse Current

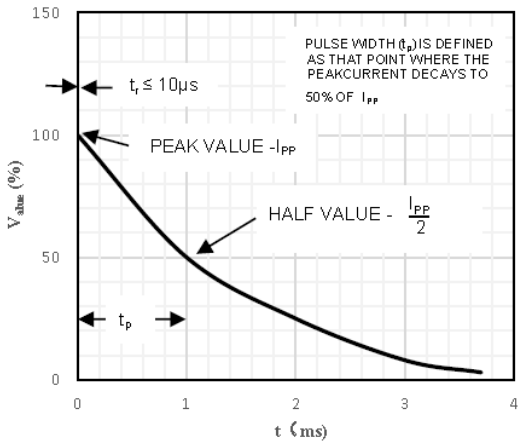


Fig 7 Pulse Waveform

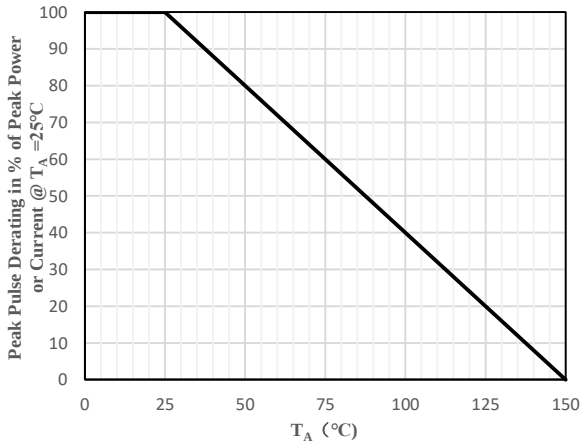
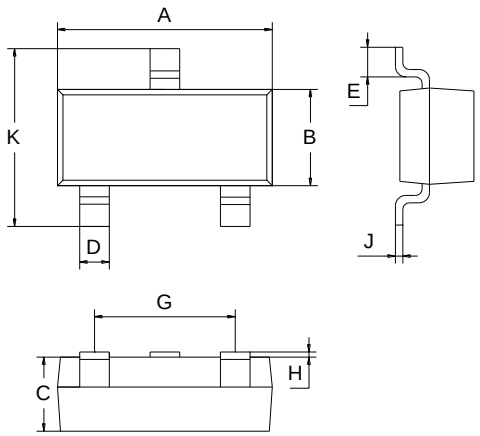


Fig 8 Pulse Derating Curve

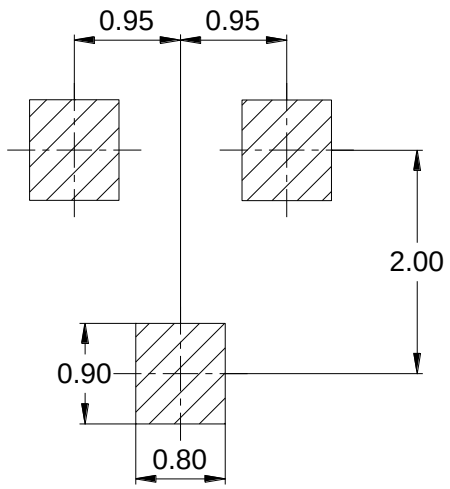
Package Outline Dimensions (Unit: mm)



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



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