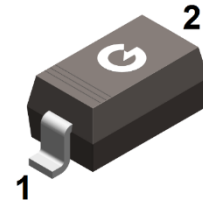
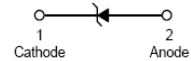


Features

- Tight voltage tolerance: $\pm 5\%$
- Ultra low-profile package well suited for automated assembly
- Moisture sensitivity level 1
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

HF



SOD-123

Mechanical Data

- Case: SOD-123
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TBZT52C51	SOD-123	3000 pcs / Tape & Reel	WW

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	500	mW
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta JA}$	250	$^{\circ}\text{C/W}$
Thermal Resistance Junction-to-Case ^{*1}	$R_{\theta JC}$	150	$^{\circ}\text{C/W}$
Thermal Resistance Junction-to-Lead ^{*1}	$R_{\theta JL}$	180	$^{\circ}\text{C/W}$
Operating Junction Temperature Range	T_J	-55 ~ +150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-65 ~ +150	$^{\circ}\text{C}$

Note 1: The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Zener Voltage	V_Z	$I_{ZT} = 2\text{mA}$	48.45	51.00	53.55	V
Forward Voltage	V_F	$I_F = 10\text{mA}$	-	-	0.9	V
Maximum Reverse Current	I_R	$V_R = 38\text{V}$	-	-	0.1	μA
Maximum Zener Impedance	Z_{ZT}	$I_{ZT} = 2\text{mA}$	-	-	100	Ω
Maximum Zener Impedance	Z_{ZK}	$I_{ZK} = 1\text{mA}$	-	-	750	Ω
Temperature Coefficient	T_C	$I_{ZT} = 2\text{mA}$	46.6	51.1	57.2	$\text{mV}/^{\circ}\text{C}$

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

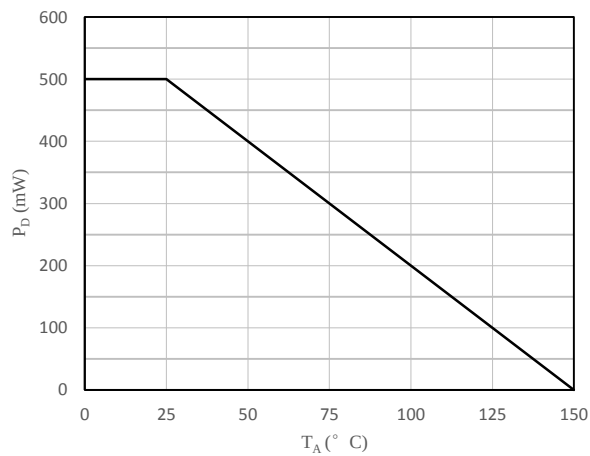


Fig 1 Steady State Power Derating

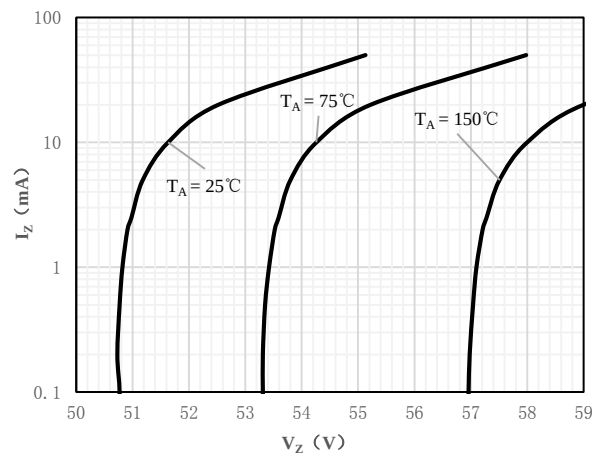


Fig 2 Typical Zener Breakdown Characteristics

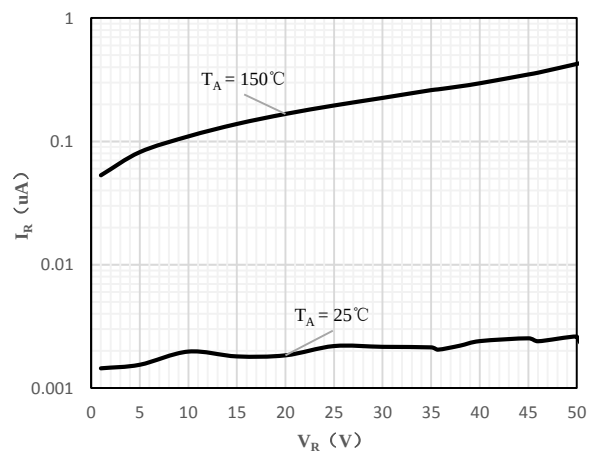


Fig 3 Zener Impedance vs. Zener Current

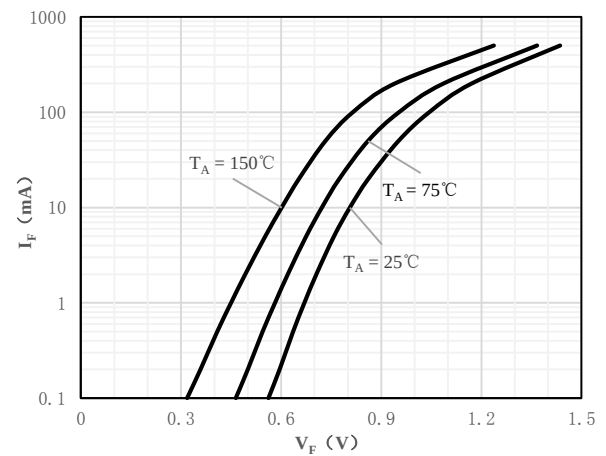


Fig 4 Typical Forward Characteristics

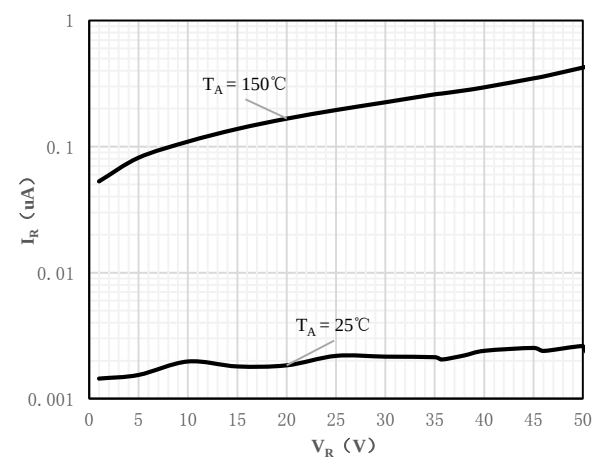
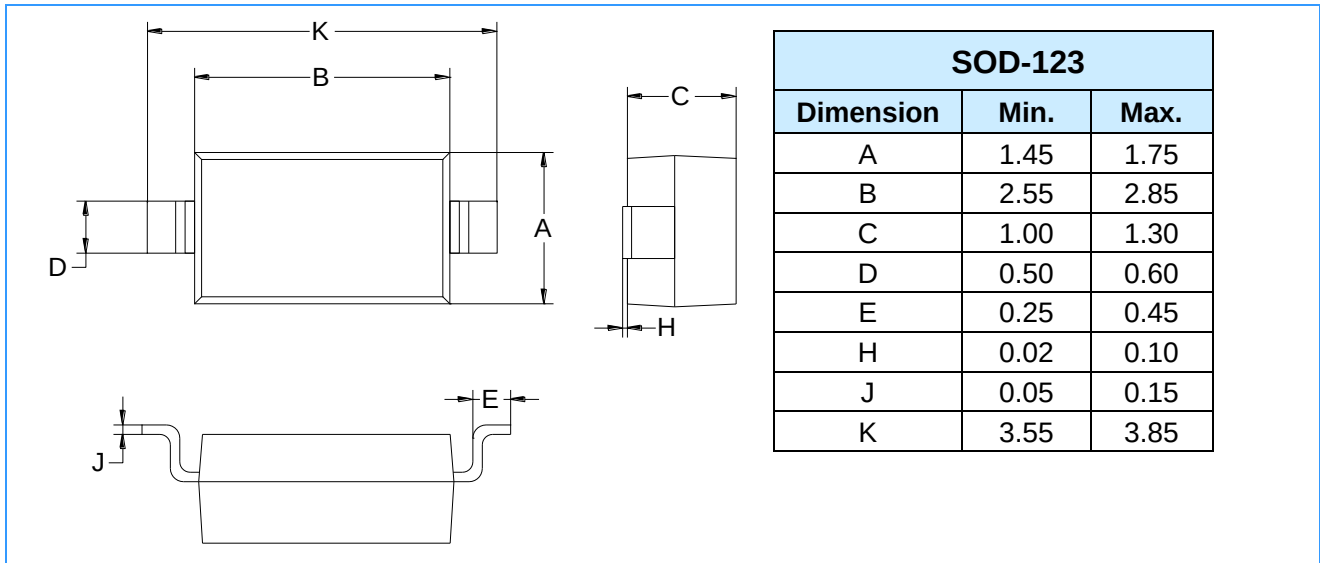


Fig 5 Typical Reverse Characteristics

Package Outline Dimensions (Unit: mm)



Package Outline Dimensions (Unit: mm)

SOD-123

