

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction, majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- High surge capability
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Component in accordance to RoHS 2015/863/EU



SMBF

Mechanical Data

- Case: JEDEC SMBF molded plastic body
- Terminals: Solder plated, solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end



Schematic Diagram

Applications

For use in low voltage, high frequency inverter, DC/DC converters, free wheeling, and polarity protection applications.

Maximum Ratings (Rating at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	100	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	10.0	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method at Rated T_L)	I_{FSM}	150	A
Typical Thermal Resistance ¹	$R_{\theta JA}$	85	°C/W
	$R_{\theta JL}$	20	
Operating Junction Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C

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

Parameter	Symbol	Test Conditions	Typ.	Max.	Unit	
Instantaneous Forward Voltage ²	V_F	$I_F=10.0\text{A}$	$T_J=25^\circ\text{C}$	0.63	0.70	V
			$T_J=100^\circ\text{C}$	0.61	-	
			$T_J=125^\circ\text{C}$	0.59	-	
	$I_F=5.0\text{A}$	$T_J=25^\circ\text{C}$	0.52	-		
		$T_J=100^\circ\text{C}$	0.49	-		
		$T_J=125^\circ\text{C}$	0.47	-		
Reverse Current ³	I_R	$V_R=100\text{V}$	$T_J=25^\circ\text{C}$	-	100	μA
			$T_J=100^\circ\text{C}$	-	10	mA
			$T_J=125^\circ\text{C}$	-	30	

Notes:

1. Unit mounted on PC board with 5.0mm×5.0mm (0.013mm thick) copper pads as heat sink
2. Pulse test: 300μs pulse width, 1% duty cycle
3. Pulse test: pulse width ≤ 40ms

Ratings and Characteristics Curves

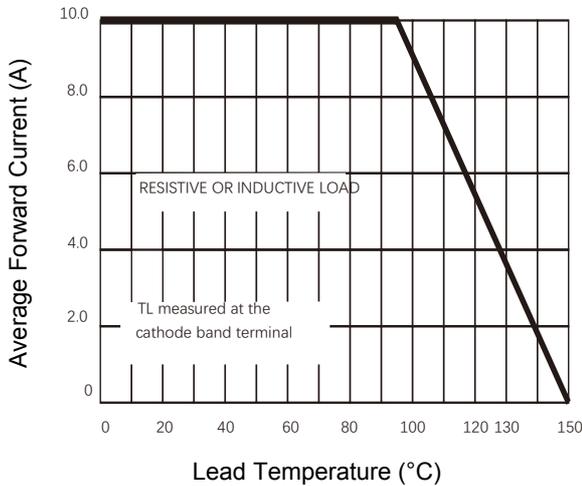


Figure 1. Forward Current Derating Curve

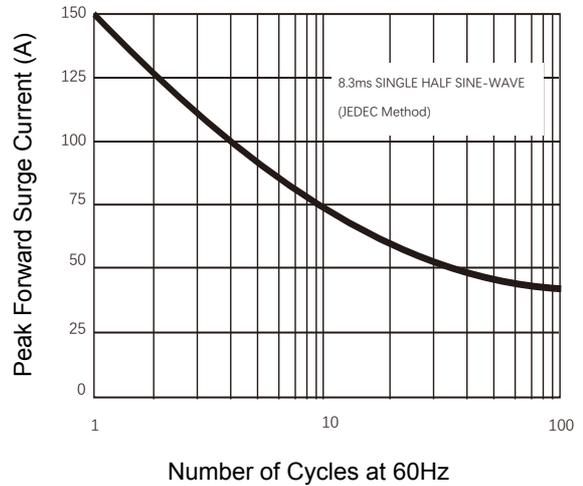


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

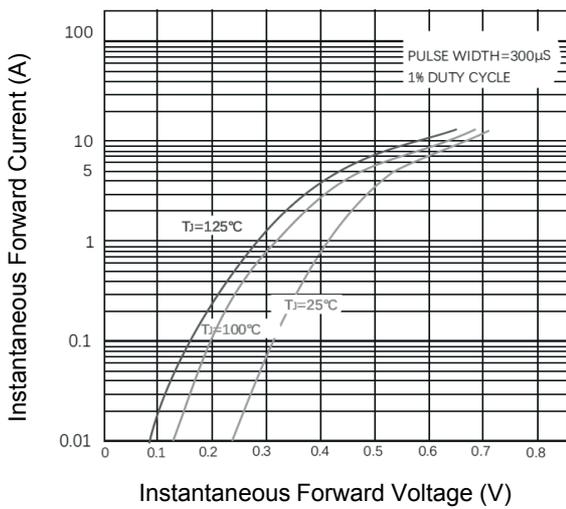


Figure 3. Typical Instantaneous Forward Characteristics

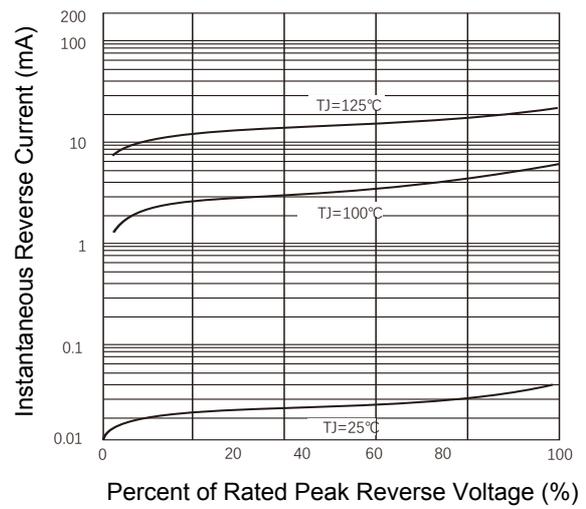
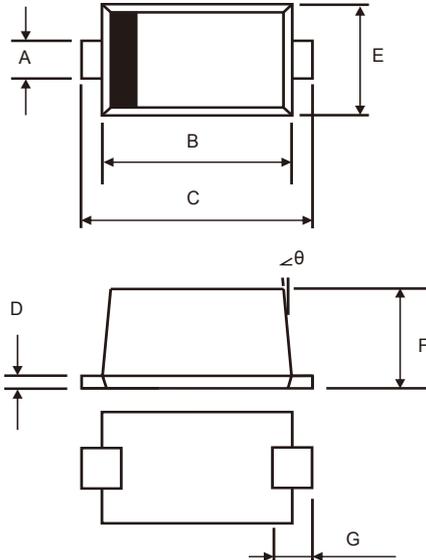


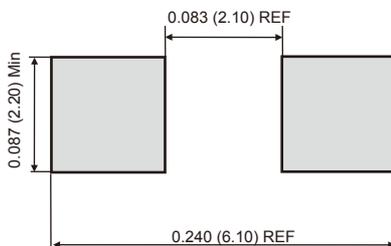
Figure 4. Typical Reverse Characteristics

Package Outline Dimensions (SMBF)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.90	2.20	0.075	0.087
B	4.20	4.40	0.165	0.173
C	5.10	5.50	0.201	0.217
D	-	0.30	-	0.012
E	3.50	3.70	0.138	0.146
F	1.10	1.40	0.043	0.055
G	0.70	1.20	0.028	0.047
θ	5° REF		5° REF	

Recommended Pad Layout



Note:

1. Unit in inches (millimeters)
2. Pad layout for reference

Order Information

Device	Package	Marking	Quantity	HSF Status
GSS1010LBT	SMBF	SS1010LBT	3,000pcs / Reel	RoHS Compliant