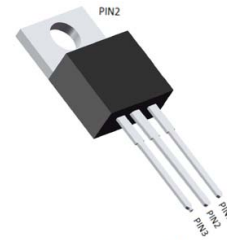


Features

- High frequency operation
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- Solder dip 275°C max. 7s, per JESD 22-B106



TO-220AB

Typical Applications

Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.



Schematic Diagram

Mechanical Data

- Package: TO-220AB
- Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: As marked

Absolute Maximum Ratings (T_A=25°C Unless otherwise specified)

Parameter	Symbol	GSMBR40150CT	Unit
Repetitive Peak Reverse Voltage	V _{RRM}	150	V
Average Rectified Output Current @ 60Hz Sine Wave, R-load, T _C =107°C	I _O	40	A
Surge (Non-Repetitive) Forward Current @ 60Hz Half Sine Wave, 1 Cycle, T _A =25°C	I _{FSM}	300	A
Surge (Non-Repetitive) Forward Current @ 1ms, Square Wave, 1 Time, T _A =25°C		600	
Current Squared Time @ ms ≤ t ≤ 8.3ms, T _J =25°C, Rating per Diode	I ² t	373	A ² S
Typical Junction Capacitance @ 1MHz and Applied Reverse Voltage of 40 V _{DC}	C _J	410	pF
Thermal Resistance, Between Junction and Ambient	R _{θJA}	50	°C/W
Thermal Resistance, Between Junction and Case	R _{θJC}	2	
Junction Temperature	T _J	-55 to +175	°C
Storage Temperature	T _{STG}	-55 to +175	°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max
Peak Forward Voltage	V_{FM}	$I_{FM}=20\text{A}, T_A=25^\circ\text{C}$	0.5	0.815	0.85
		$I_{FM}=20\text{A}, T_A=125^\circ\text{C}$	-	0.68	0.72
Maximum DC Reverse Current at Rated DC Blocking Voltage Per Diode	I_{RRM1}	$V_{RM}=V_{RRM}, T_J=25^\circ\text{C}$	-	-	0.1
	I_{RRM2}	$V_{RM}=V_{RRM}, T_J=125^\circ\text{C}$	-	-	20

Ratings and Characteristics Curves

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

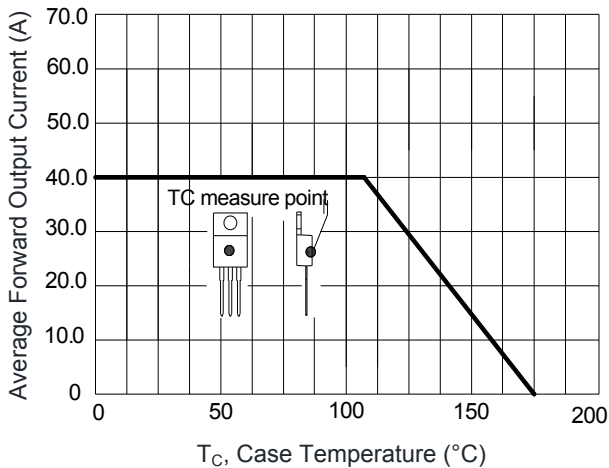


Figure 1. I_O - T_C Curve

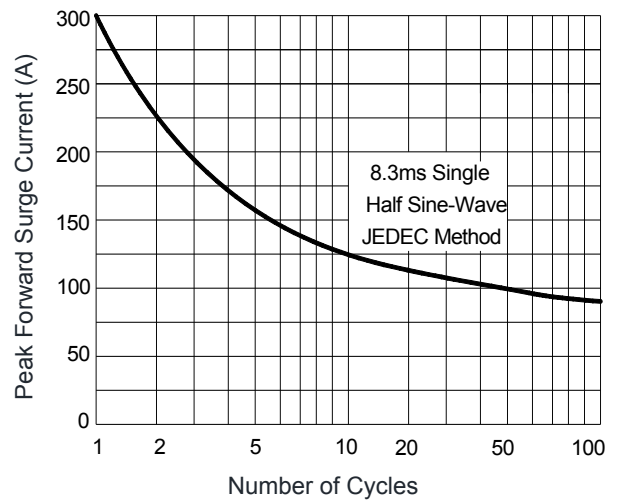


Figure 2. Surge Forward Current Capability

Ratings and Characteristics Curves

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

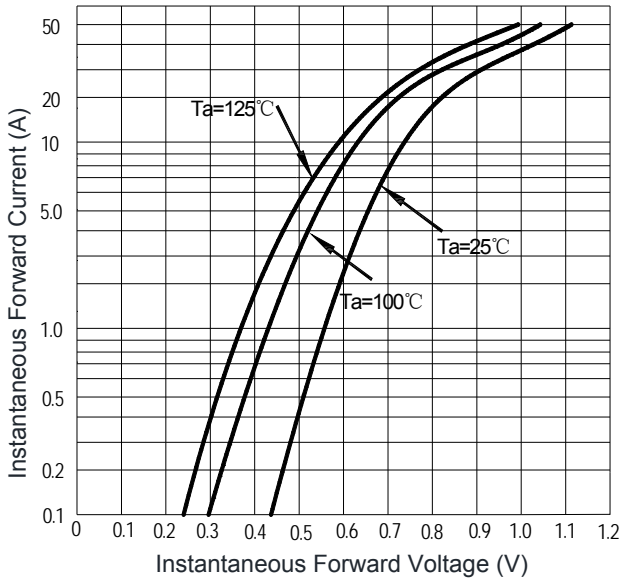


Figure 3. Instantaneous Forward Voltage

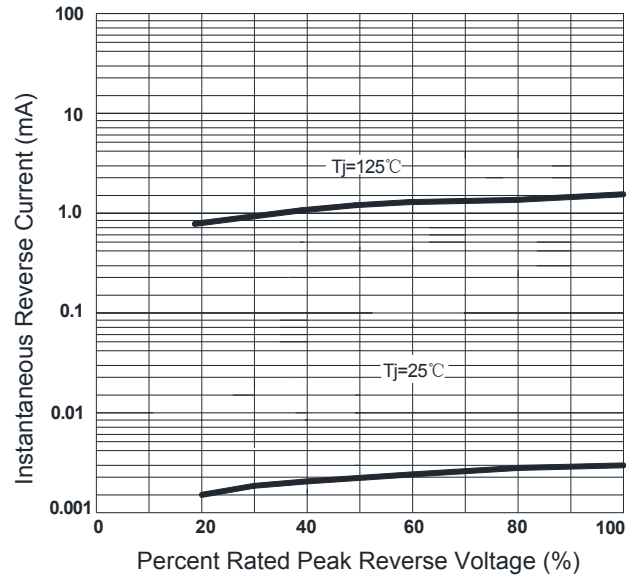


Figure 4. Typical Reverse Characteristics

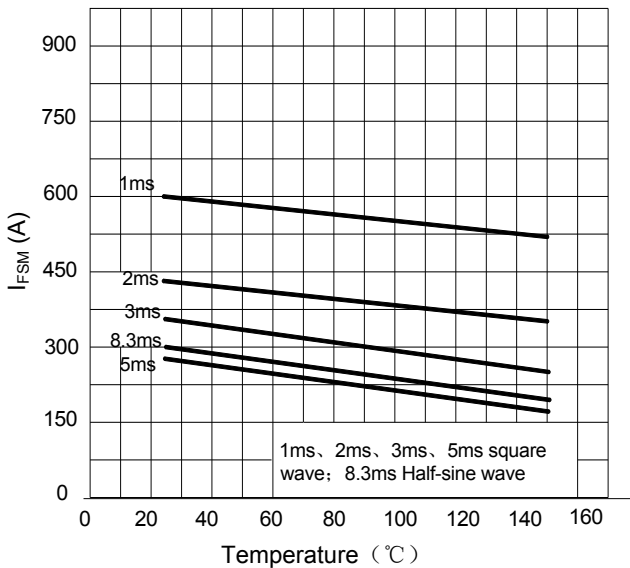
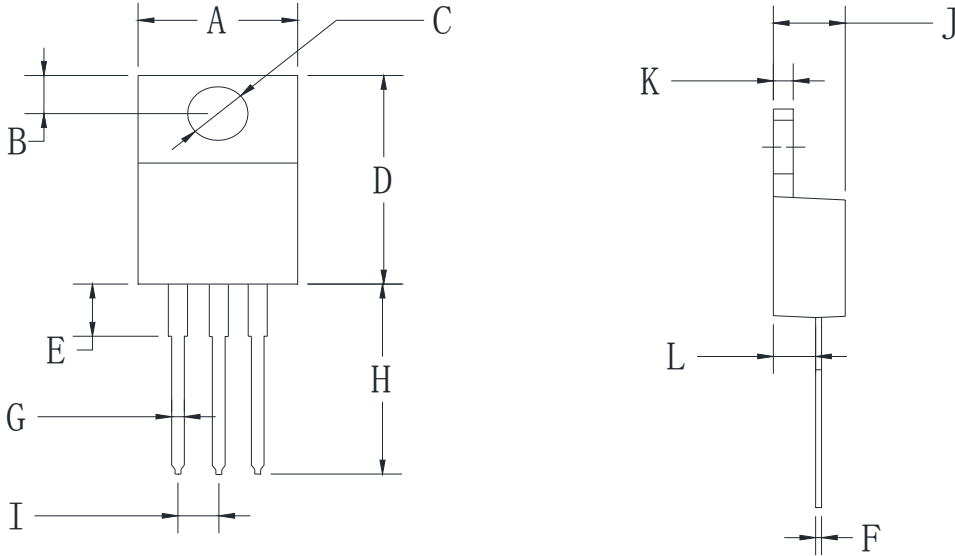


Figure 5. Maximum Non-Repetitive Peak Forward

Package Outline Dimensions (TO-220AB)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	9.500	10.900	0.374	0.429
B	2.220	3.270	0.087	0.129
C	3.340	4.310	0.131	0.170
D	14.500	15.500	0.571	0.610
E	3.160	4.460	0.124	0.176
F	0.280	0.640	0.011	0.025
G	0.680	0.940	0.027	0.037
H	13.060	14.620	0.514	0.576
I	2.010	3.070	0.079	0.121
J	4.040	5.100	0.159	0.201
K	1.140	1.400	0.045	0.055
L	2.140	3.190	0.084	0.126