

SBR540 thru SBR5200

Schottky Barrier Rectifiers

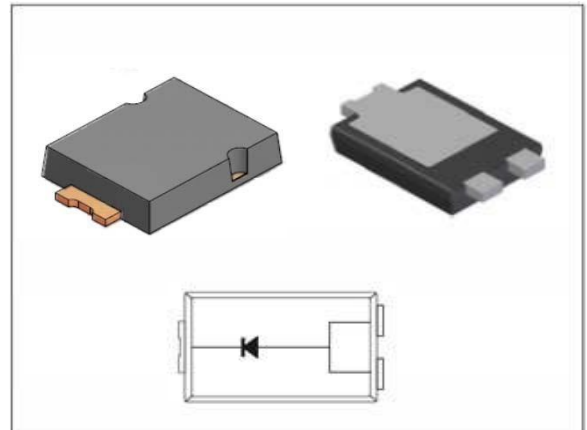
Reverse Voltage 40 to 200V Forward Current 5A

FEATURES

- * Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- * Low power loss, high efficiency
- * For use in low voltage high frequency inverters, free wheeling, and polarity protection applications
- * Guardring for over voltage protection
- * High temperature soldering guaranteed: 260°C/10 seconds at terminals
- S-prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

Mechanical Data

Case: JEDEC TO-277A,
molded plastic over SKY body Terminals: Plate
leads, solderable per
MIL-STD-750, Method 2026
Mounting Position: Any Weight: 0.108 g
Handling precaution: None



We declare that the material of product is Halogen free (green epoxy compound)

1. Electrical Characteristic

Maximum & Thermal Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter Symbol	symbol	SBR540	SBR545	SBR560	SBR5100	SBR5150	SBR5200	Unit
device marking code		SBR540	SBR545	SBR560	SBR5100	SBR5150	SBR5200	
Maximum repetitive peak reverse voltage	V_{RRM}	40	45	60	100	150	200	V
Maximum RMS voltage	V_{RMS}	28	31.5	42	70	105	140	V
Maximum DC blocking voltage	V_{DC}	40	45	60	100	150	200	V
Maximum average forward rectified current at $T_c = 75^\circ\text{C}$	$I_{F(AV)}$	5.0						A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	150						A
Typical thermal resistance (Note 1)	$R_{\theta JC}$	8						°C/W
	$R_{\theta JL}$	15						
	$R_{\theta JA}$	31						
Typical thermal resistance (Note 3)	$R_{\theta JA}$	60						°C/W
Operating junction temperature range	T_J	-55 to +150						°C
Storage temperature range	T_{STG}	-55 to +150						°C

Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter Symbol	symbol	SBR540	SBR545	SBR560	SBR5100	SBR5150	SBR5200	Unit
Maximum instantaneous forward voltage at 5A at 25°C	V_F	0.5	0.5	0.7	0.87			V
Maximum DC reverse current $T_j = 25^\circ\text{C}$ at rated DC blocking voltage $T_j = 100^\circ\text{C}$ (note2) at rated DC blocking voltage $T_j = 125^\circ\text{C}$ (note2)	I_R	0.3			0.015			mA
		15.0			10.0			
		25			20			
Typical junction capacitance at 4.0V, 1MHz	C_J	260						PF

NOTES:

1. Polyimide PCB, 2oz. Copper. Cathode pad dimensions 18.8mm x 14.4mm. Anode pad dimensions 5.6mm x 14.4mm.
2. Short duration pulse test used to minimize self-heating effect.
3. FR-4 PCB, 2oz. Copper.

2. Ratings and Characteristic Curves (TA = 25°C unless otherwise noted)

Fig. 2 - Maximum Non-repetitive Peak

Fig. 1 - Forward Current Derating

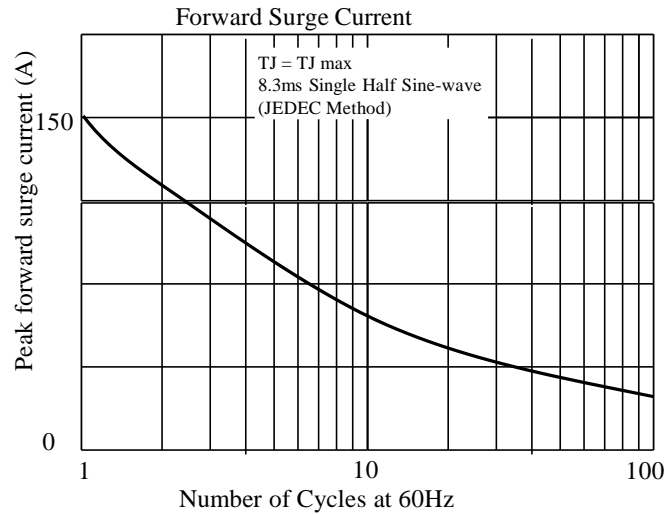
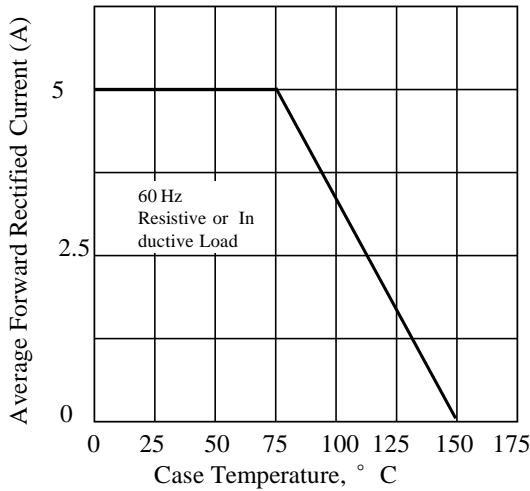


Fig. 3. - Typical Instantaneous Forward Characteristics

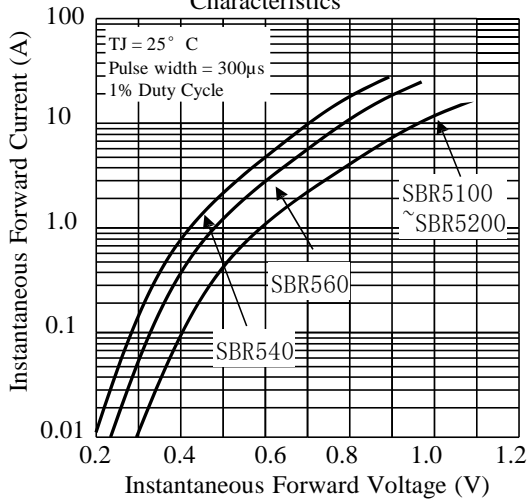


Fig. 4. - Typical Reverse Characteristics

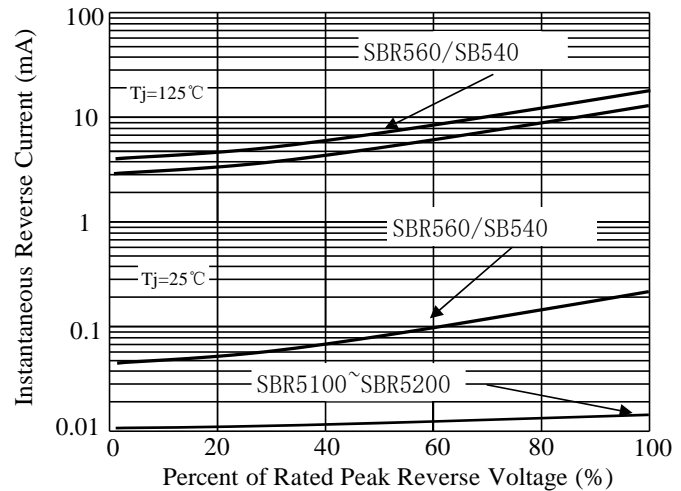


Fig. 5. - typical transient thermal impedance(Note 3)

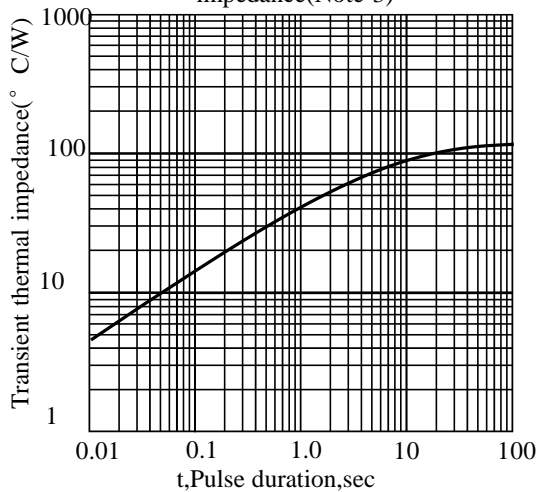
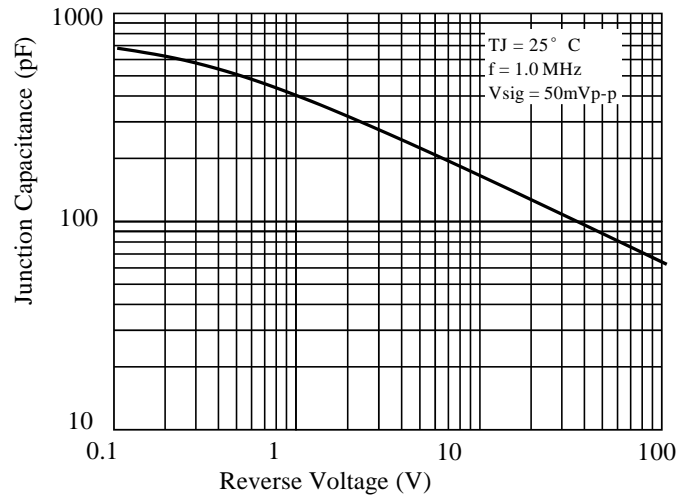
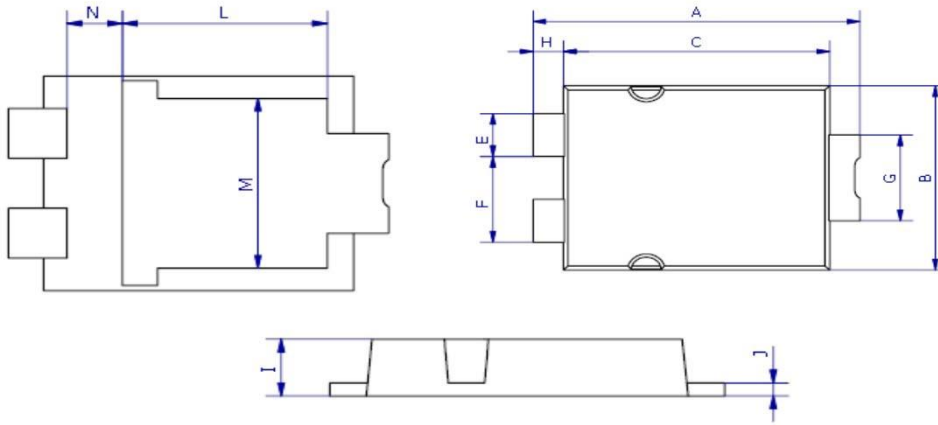


Fig. 6. - Typical Junction Capacitance



3. dimension:

TO-277A



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	6.3	6.7	0.248	0.264
B	4.1	4.5	0.161	0.177
C	5.1	5.5	0.201	0.217
E	0.9	1.1	0.035	0.043
F	1.9	2.1	0.075	0.083
G	1.9	2.1	0.075	0.083
H	0.50	0.70	0.020	0.028
I	1.00	1.20	0.039	0.047
J	0.15	0.35	0.006	0.014
L	4.35	4.75	0.171	0.187
M	3.20	3.60	0.126	0.142
N	0.85	1.10	0.033	0.043

Mounting PAD layout

