

SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

Features

- Small Compact Surface Mountable Package with J-Bend Leads
- Rectangular Package for Automated Handling
- Highly Stable Oxide Passivated Junction
- Very Low Forward Voltage Drop
(0.55 V Max @ 2.0 A, $T_J = 25^\circ\text{C}$)
- Excellent Ability to Withstand Reverse Avalanche Energy Transients
- Guardring for Stress Protection
- ESD Ratings:
 - ◆ Human Body Model = 3B (> 8000 V)
 - ◆ Machine Model = C (> 400 V)
- SBRS8 Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable*
- These are Pb-Free Devices

Mechanical Characteristics

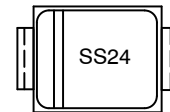
- Case: Epoxy, Molded
- Weight: 95 mg (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Cathode Polarity Band

SCHOTTKY BARRIER RECTIFIER 2.0 AMPERE, 40 VOLTS



SMB
CASE 403A

MARKING DIAGRAM



ORDERING INFORMATION

Device	Package	Shipping
MBRS140T3G	SMB (Pb-Free)	3,000 / Tape & Reel
SBRS8140T3G	SMB (Pb-Free)	3,000 / Tape & Reel
SBRS140T3G	SMB (Pb-Free)	3,000 / Tape & Reel

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	40	V
Average Rectified Forward Current $T_L = 115^\circ\text{C}$	$I_{F(AV)}$	2.0	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	40	A
Operating Junction Temperature	T_J	-65 to +125	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

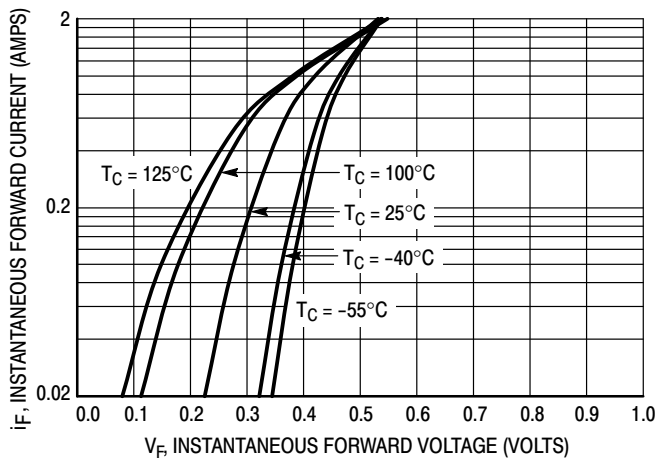
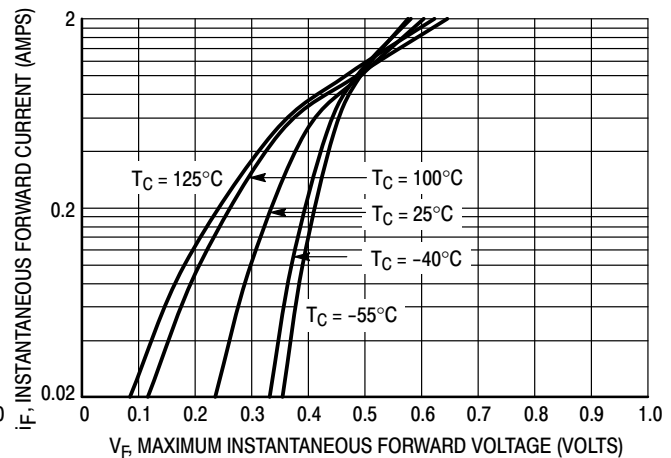
Characteristic	Symbol	Value	Unit
Thermal Resistance - Junction-to-Lead ($T_L = 25^\circ\text{C}$)	$R_{\theta JL}$	12	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 1) ($i_F = 1.0\text{ A}$, $T_J = 25^\circ\text{C}$)	V_F	0.6	V
Maximum Instantaneous Reverse Current (Note 1) (Rated dc Voltage, $T_J = 25^\circ\text{C}$) (Rated dc Voltage, $T_J = 100^\circ\text{C}$)	i_R	1.0 10	mA

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.


Figure 1. Typical Forward Voltage

Figure 2. Maximum Forward Voltage

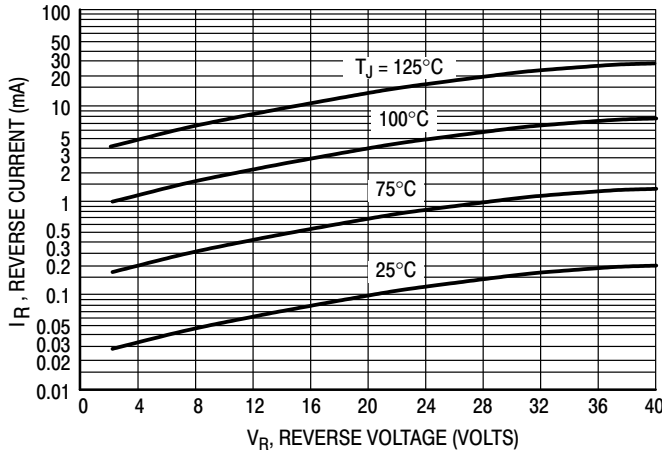


Figure 3. Typical Reverse Current

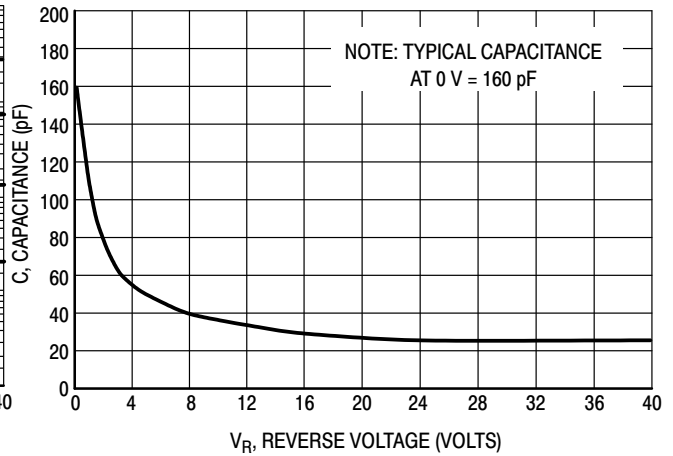


Figure 4. Typical Capacitance

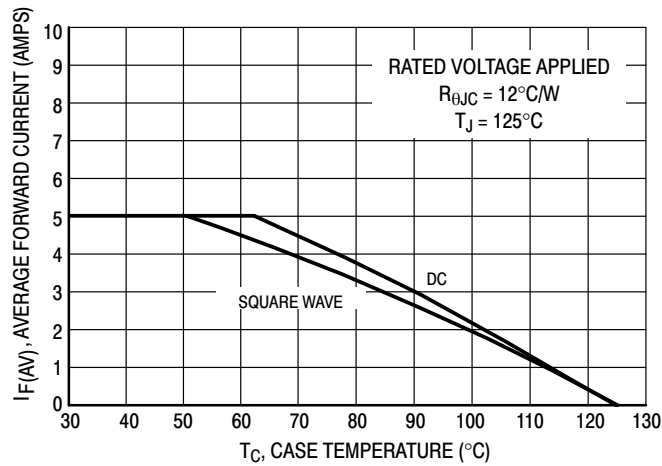


Figure 5. Current Derating (Case)

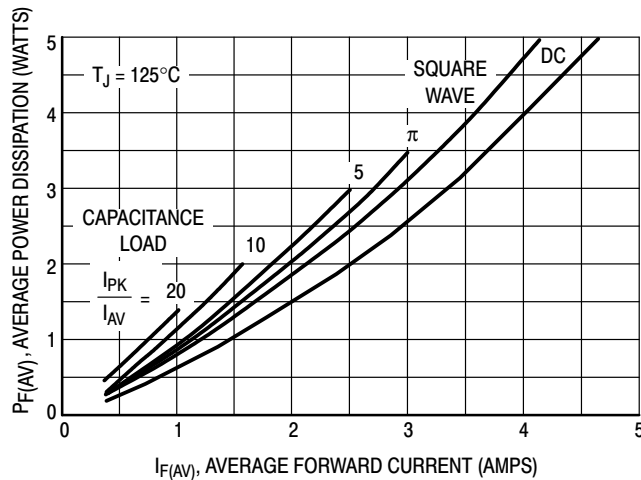
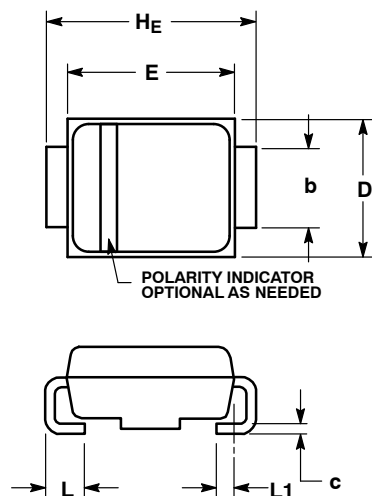


Figure 6. Power Dissipation

PACKAGE DIMENSIONS

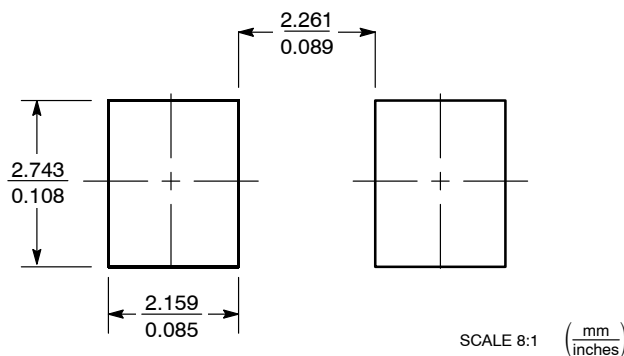
SMB
CASE 403A-03
ISSUE J



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION b SHALL BE MEASURED WITHIN DIMENSION L1.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.95	2.30	2.47	0.077	0.091	0.097
A1	0.05	0.10	0.20	0.002	0.004	0.008
b	1.96	2.03	2.20	0.077	0.080	0.087
c	0.15	0.23	0.31	0.006	0.009	0.012
D	3.30	3.56	3.95	0.130	0.140	0.156
E	4.06	4.32	4.60	0.160	0.170	0.181
HE	5.21	5.44	5.60	0.205	0.214	0.220
L	0.76	1.02	1.60	0.030	0.040	0.063
L1	0.51 REF			0.020 REF		

SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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