Preferred Device

Surface Mount Schottky Power Rectifier

... employing the Schottky Barrier principle in a large area metal-to-silicon power diode. State-of-the-art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency rectification, or as free wheeling and polarity protection diodes, in surface mount applications where compact size and weight are critical to the system. Typical applications are ac/dc and dc-dc converters, reverse battery protection, and "Oring" of multiple supply voltages and any other application where performance and size are critical.

- Ultra Low VF
- 1st in the Market Place with a 10 V_R Schottky Rectifier
- Small Compact Surface Mountable Package with J-Bend Leads
- Rectangular Package for Automated Handling
- Highly Stable Oxide Passivated Junction
- Very Low Forward Voltage Drop
- Excellent Ability to Withstand Reverse Avalanche Energy Transients
- Guarding for Stress Protection

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 217 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
- Shipped in 16 mm Tape and Reel, 2500 units per reel
- Polarity: Notch in Plastic Body Indicates Cathode Lead
- ESD Ratings: Machine Model = C Human Body Model = 3B
- Marking: B4L1

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	VRRM VRWM VR	10	V
Average Rectified Forward Current (@ T _L = 110°C)	lo	4.0	Α
Non–Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	IFSM	150	A
Operating Junction Temperature	TJ	-65 to +125	°C



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SCHOTTKY BARRIER RECTIFIERS 4.0 AMPERES 10 VOLTS



SMC CASE 403 PLASTIC

MARKING DIAGRAM



Y = Year WW = Work Week B4L1 = Device Code

ORDERING INFORMATION

Device	Package	Shipping
MBRS410LT3	SMC	2500/Tape & Reel

Preferred devices are recommended choices for future use and best overall value.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Min Pad (Note 2)	1 Inch Pad	Unit
Thermal Resistance – Junction–to–Lead Thermal Resistance – Junction–to–Ambient	$R_{ heta JL} R_{ heta JA}$	12 109	7.0 59	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 1)	٧F	T _J = 25°C	T _J = 100°C	V
(I _F = 2.0 A) (I _F = 4.0 A) (I _F = 8.0 A)		0.31 0.33 0.35	0.200 0.225 0.250	
Maximum Instantaneous Reverse Current (Note 1)	IR	T _J = 25°C	T _J = 100°C	mA
(Rated dc Voltage, V _R = 5.0 V) (Rated dc Voltage, V _R = 10 V)		2.0 5.0	100 200	

- 1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.
- 2. Mounted with Minimum Recommended Pad Size, PC Board FR4.

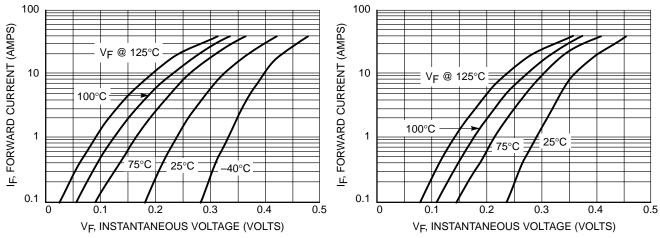


Figure 1. Typical Forward Voltage

Figure 2. Maximum Forward Voltage

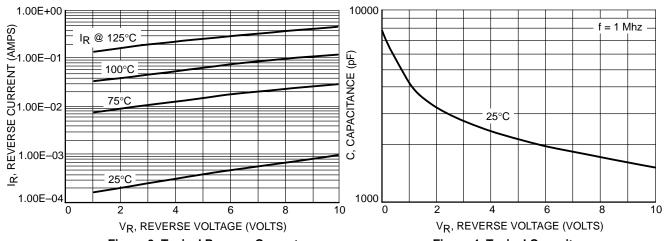
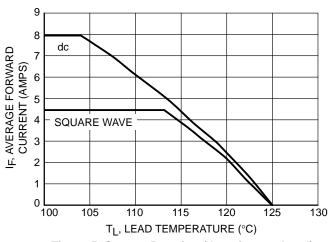


Figure 3. Typical Reverse Current

Figure 4. Typical Capacitance



1.8 NOLVE 1.8 NOLVE

Figure 5. Current Derating (Junction-to-Lead)

Figure 6. Forward Power Dissipation

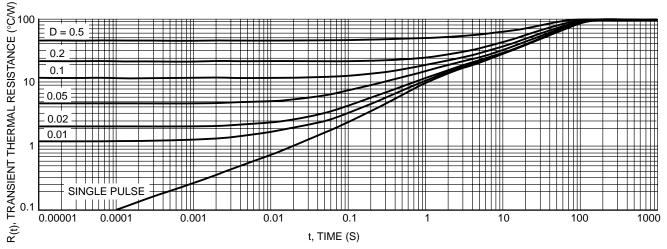


Figure 7. Thermal Response, Junction to Ambient (min pad)

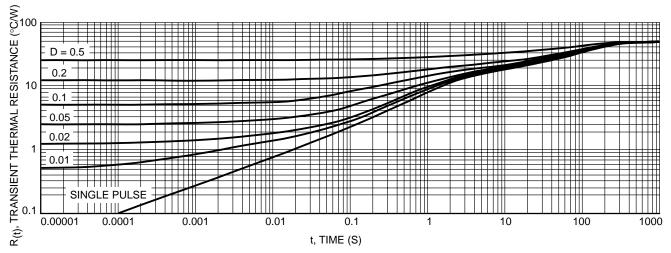
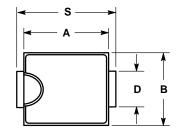


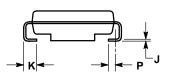
Figure 8. Thermal Response, Junction to Ambient (1 inch pad)

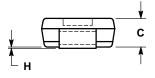
PACKAGE DIMENSIONS

SMC

PLASTIC PACKAGE CASE 403-03 ISSUE B







NOTES:

- DIMENSIONING AND TOLERANCING PER ANSI
 Y14 5M 1982
- Y14.5M, 1982. 2. CONTROLLING DIMENSION: INCH.
- D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
Α	0.260	0.280	6.60	7.11
В	0.220	0.240	5.59	6.10
С	0.075	0.095	1.90	2.41
D	0.115	0.121	2.92	3.07
Н	0.0020	0.0060	0.051	0.152
J	0.006	0.012	0.15	0.30
K	0.030	0.050	0.76	1.27
Р	0.020 REF		0.51 REF	
S	0.305	0.320	7.75	8.13

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