MBR835, MBR840, MBR845

Preferred Devices

Axial Lead Rectifiers

. . . 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 overlap contact. Ideally suited for use as rectifiers in low−voltage, high−frequency inverters, free wheeling diodes, and polarity protection diodes.

- High Current Capability
- Low Stored Charge, Majority Carrier Conduction
- Low Power Loss/High Efficiency
- Highly Stable Oxide Passivated Junction
- Guard−Ring for Stress Protection
- Low Forward Voltage
- High Surge Capacity

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 1.1 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 220°C Max. for 10 Seconds, 1/16″ from case
- Shipped in plastic bags, 500 per bag
- Available Tape and Reeled, 1500 per reel, by adding a “RL” suffix to the part number
- Polarity: Cathode indicated by Polarity Band
- ESD Protection: Human Body Model > 4000 V (Class 3)
  Machine Model > 400 V (Class C)

MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage MBR835 MBR840 MBR845	V_{RRM} V_{RWM} V_R	 35 40 45	V
Average Rectified Forward Current T_L = 75°C (Psi_{JL} = 12°C/W, P.C. Board Mounting, see Note 2)	I_O	8.0	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	140	A
Operating and Storage Junction Temperature Range (Reverse Voltage Applied)	T_J, T_{stg}	−65 to +125	°C
Voltage Rate of Change (Rated V_R)	dv/dt	10	V/ns

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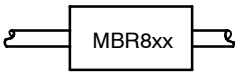
SCHOTTKY BARRIER RECTIFIERS 8.0 AMPERES

AXIAL LEAD
CASE 267−05
(DO−201AD)
STYLE 1

MARKING DIAGRAM



MBR8xx = Device Code
xx = 35, 40 or 45

ORDERING INFORMATION

Device	Package	Shipping
MBR835	Axial Lead	500 Units/Bag
MBR835RL	Axial Lead	1500/Tape & Reel
MBR840	Axial Lead	500 Units/Bag
MBR840RL	Axial Lead	1500/Tape & Reel
MBR845	Axial Lead	500 Units/Bag
MBR845RL	Axial Lead	1500/Tape & Reel

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

THERMAL CHARACTERISTICS

Characteristic	Symbol	0.9 in x 0.9 in Copper Pad Size	6.75 in x 6.75 in Copper Pad Size	Unit
Thermal Resistance – Junction–to–Lead (See Note 2 – Mounting Data)	$R_{\theta JL}$	13	12	°C/W
Thermal Resistance – Junction–to–Ambient (See Note 2 – Mounting Data)	$R_{\theta JA}$	50	40	

ELECTRICAL CHARACTERISTICS (T_L = 25°C unless otherwise noted)

Characteristic	Symbol	Max	Unit
Maximum Instantaneous Forward Voltage (Note 1) (i_F = 8.0 Amps, T_L = 25°C)	v_F	0.55	V
Maximum Instantaneous Reverse Current @ Rated dc Voltage (Note 1) T_L = 25°C T_L = 100°C	i_R	1.0 50	mA

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

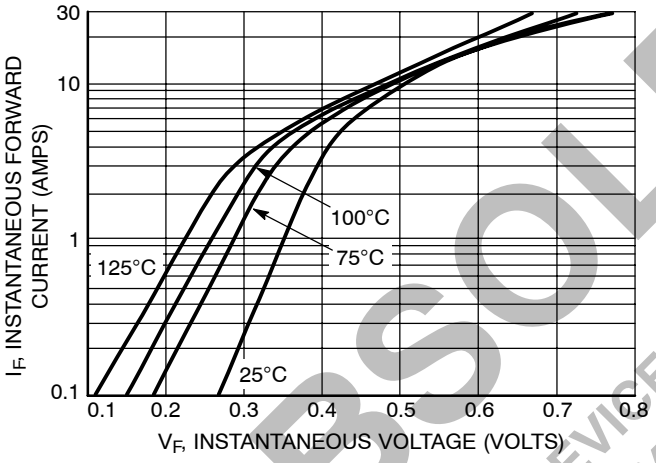


Figure 1. Typical Forward Voltage

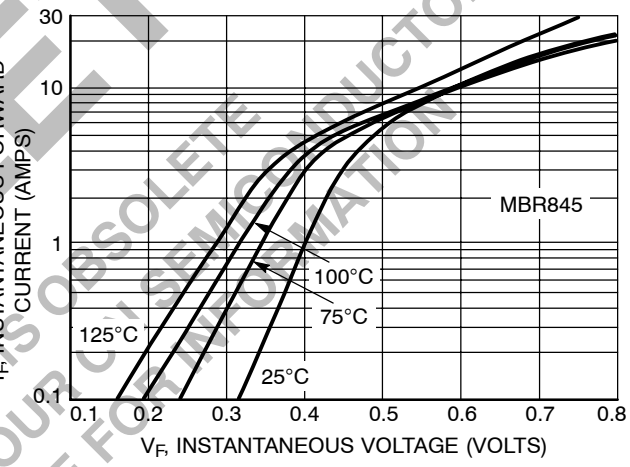


Figure 2. Maximum Forward Voltage

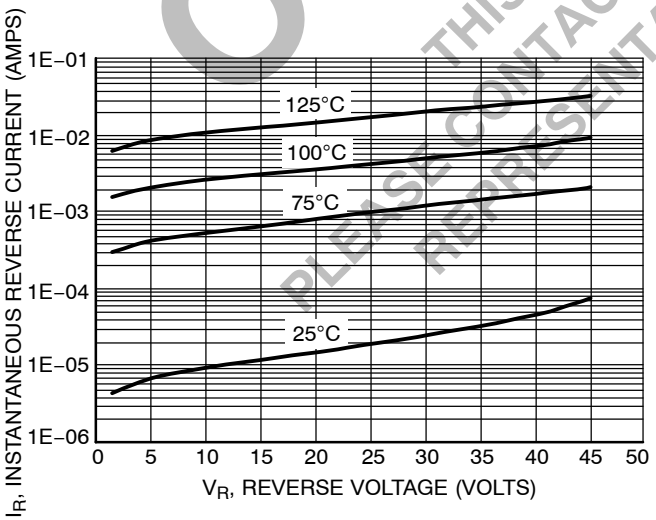


Figure 3. Typical Reverse Current

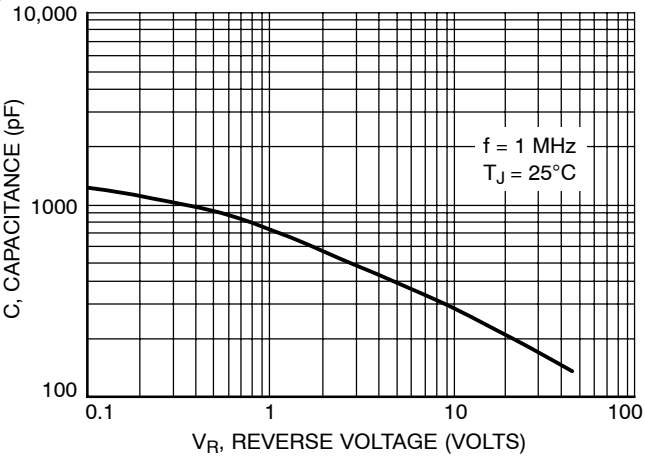


Figure 4. Typical Capacitance

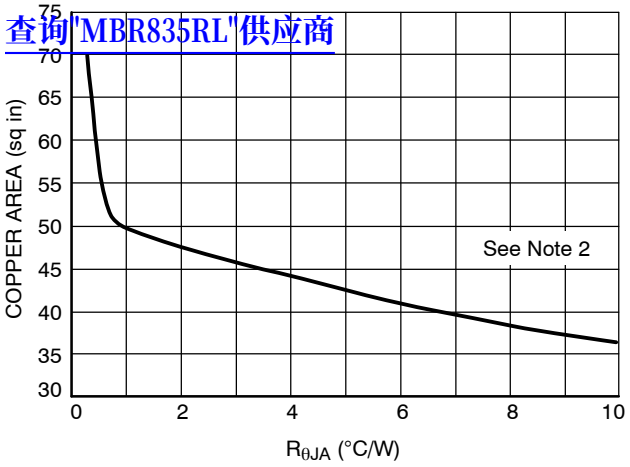


Figure 5. $R_{\theta JA}$ versus Copper Area

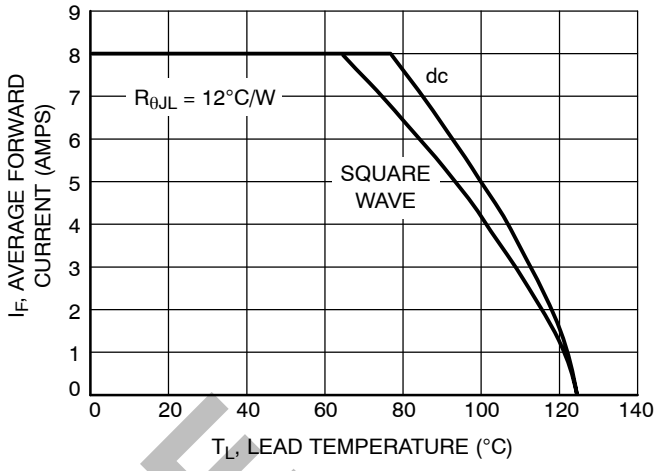


Figure 6. Current Derating – Lead

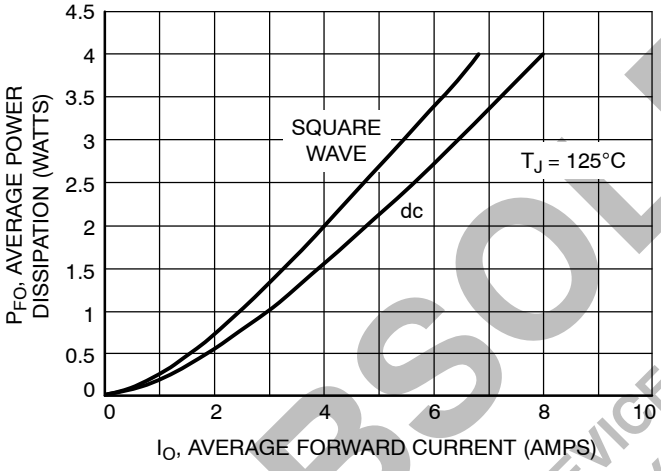
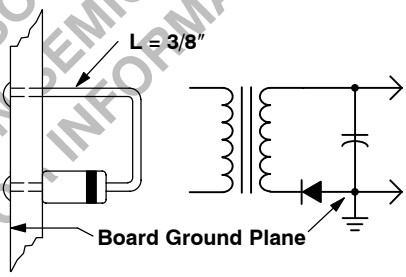


Figure 7. Forward Power Dissipation

NOTE 2 — MOUNTING DATA

Mounting Method

P.C. Board with 6.75 sq. in. copper surface.



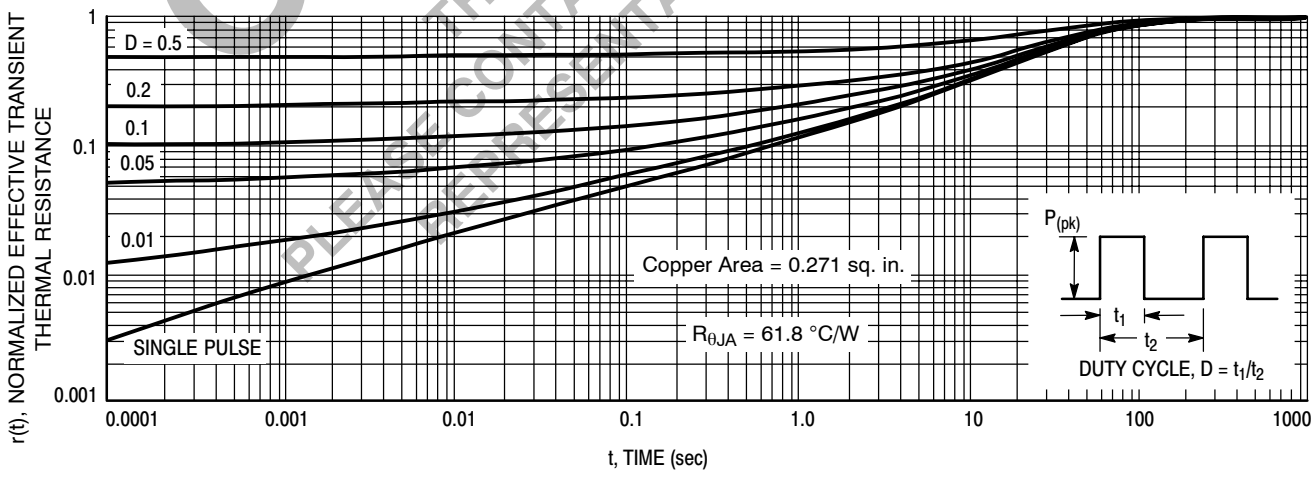
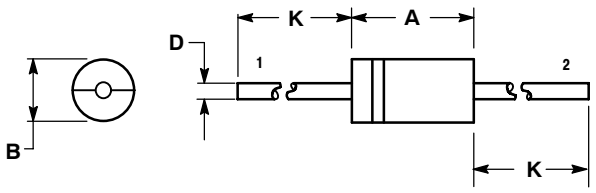


Figure 8. Thermal Response, Junction−to−Ambient

PACKAGE DIMENSIONS

AXIAL LEAD
CASE 267−05
(DO−201AD)
ISSUE G



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.287	0.374	7.30	9.50
B	0.189	0.209	4.80	5.30
D	0.047	0.051	1.20	1.30
K	1.000	---	25.40	---

STYLE 1:
PIN 1. CATHODE (POLARITY BAND)
2. ANODE

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
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