Switch-mode Power Rectifier 60 V, 40 A

Features and Benefits

- Low Forward Voltage
- Low Power Loss/High Efficiency
- High Surge Capability
- 40 A Total (20 A Per Diode Leg)
- Guard-Ring for Stress Protection
- This Device is Pb-Free and is RoHS Compliant

Applications

- Power Supply Output Rectification
- Power Management
- Instrumentation

Mechanical Characteristics:

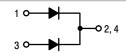
- Case: Epoxy, Molded
- Epoxy Meets UL 94 V-0 @ 0.125 in
- Weight (Approximately): 1.9 Grams
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds



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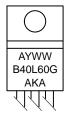
SCHOTTKY BARRIER RECTIFIER 40 AMPERES, 60 VOLTS





TO-220 CASE 221A STYLE 6

MARKING DIAGRAM



A = Assembly Location

Y = Year
WW = Work Week
B40L60 = Device Code
G = Pb-Free Device
AKA = Polarity Designator

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

MAXIMUM RATINGS (Per Diode Leg)

Rating		Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V _{RRM} V _{RWM} V _R	60	V
Average Rectified Forward Current (Rated V_R) $T_C = 130$ °C	(Per Leg) Per Device)	I _{F(AV)}	20 40	Α
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)		I _{FSM}	240	Α
Operating Junction Temperature (Note 1)		T _J	-55 to +150	°C
Storage Temperature		T _{stg}	-65 to +175	°C
ESD Ratings: Machin Human Body	e Model = C Model = 3B		> 400 > 8000	V

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
Maximum Thermal Resistance Junction-to-Case Junction-to-Ambient	R _θ JC R _θ JA	1.8 70	°C/W

ELECTRICAL CHARACTERISTICS (Per Diode Leg)

Characteristic	Symbol	Тур	Max	Unit
$\label{eq:maximum Instantaneous Forward Voltage (Note 2)} \begin{array}{l} \text{(I}_F = 20 \text{ A, T}_C = 25^\circ\text{C}) \\ \text{(I}_F = 20 \text{ A, T}_C = 125^\circ\text{C}) \\ \text{(I}_F = 40 \text{ A, T}_C = 25^\circ\text{C}) \\ \text{(I}_F = 40 \text{ A, T}_C = 125^\circ\text{C}) \end{array}$	VF	0.56 0.53 0.75 0.69	0.61 0.58 0.81 0.74	V
Maximum Instantaneous Reverse Current (Note 2) (Rated DC Voltage, $T_C = 25^{\circ}C$) (Rated DC Voltage, $T_C = 125^{\circ}C$)	i _R	210 95	550 175	μA mA

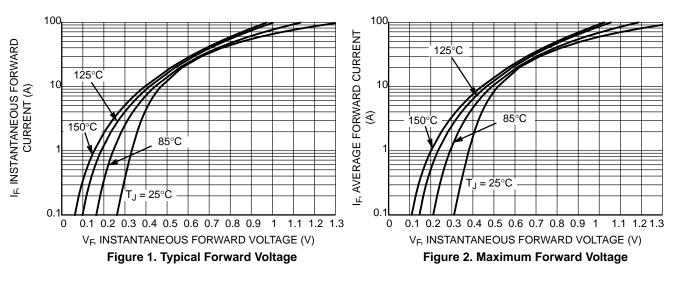
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse Test: Pulse Width = $300 \mu s$, Duty Cycle $\leq 2.0\%$.

DEVICE ORDERING INFORMATION

Device Order Number	Package Type	Shipping
MBR40L60CTG	TO-220 (Pb-Free)	50 Units / Rail

^{1.} The heat generated must be less than the thermal conductivity from Junction-to-Ambient: $dP_D/dT_J < 1/R_{\theta JA}$.



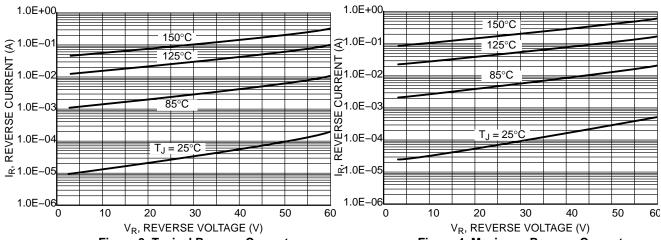


Figure 3. Typical Reverse Current

Figure 4. Maximum Reverse Current

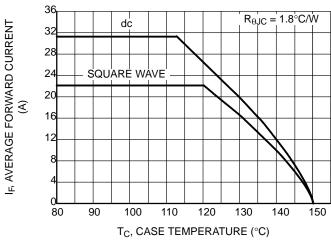


Figure 5. Current Derating, Case per Leg

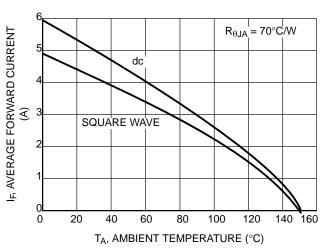


Figure 6. Current Derating, Ambient per Leg

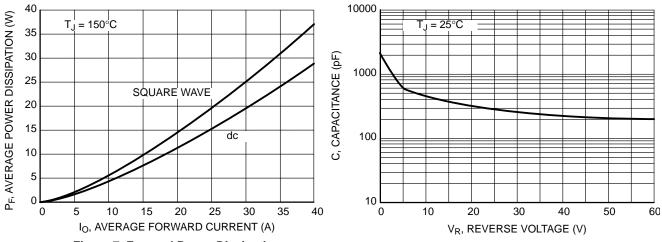


Figure 7. Forward Power Dissipation

Figure 8. Capacitance

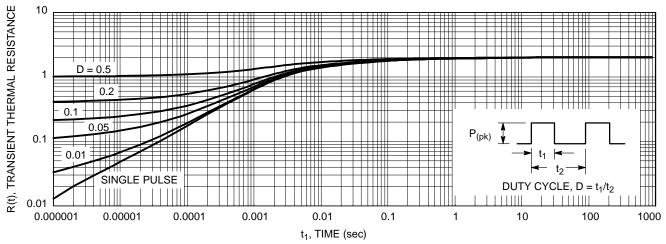


Figure 9. Thermal Response Junction-to-Case for MBR40L60CT

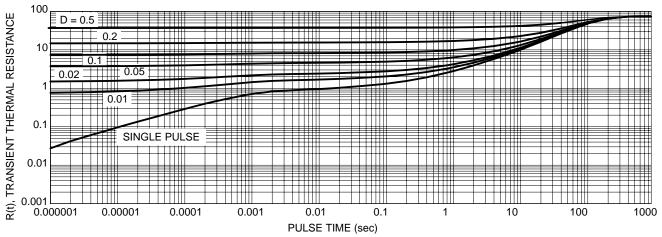


Figure 10. Thermal Response Junction-to-Ambient for MBR40L60CT

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