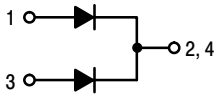
MBR40L60CTG

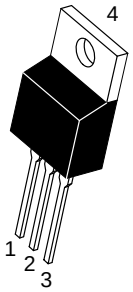
Switch-mode Power Rectifier 60 V, 40 A

ON Semiconductor®

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SCHOTTKY BARRIER RECTIFIER 40 AMPERES, 60 VOLTS





TO−220
CASE 221A
STYLE 6

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

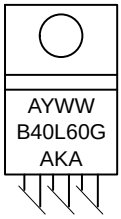
Applications

- 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

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.

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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	A
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)		I_{FSM}	240	A
Operating Junction Temperature (Note 1)		T_J	−55 to +150	°C
Storage Temperature		T_{stg}	−65 to +175	°C
ESD Ratings:	Machine Model = C Human Body 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.

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

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance Junction−to−Case Junction−to−Ambient	 $R_{\theta JC}$ $R_{\theta JA}$	 1.8 70	°C/W

ELECTRICAL CHARACTERISTICS (Per Diode Leg)

Characteristic	Symbol	Typ	Max	Unit
Maximum Instantaneous Forward Voltage (Note 2) (I_F = 20 A, T_C = 25°C) (I_F = 20 A, T_C = 125°C) (I_F = 40 A, T_C = 25°C) (I_F = 40 A, T_C = 125°C)	v_F	 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°C) (Rated DC Voltage, T_C = 125°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 μs, Duty Cycle ≤ 2.0%.

DEVICE ORDERING INFORMATION

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

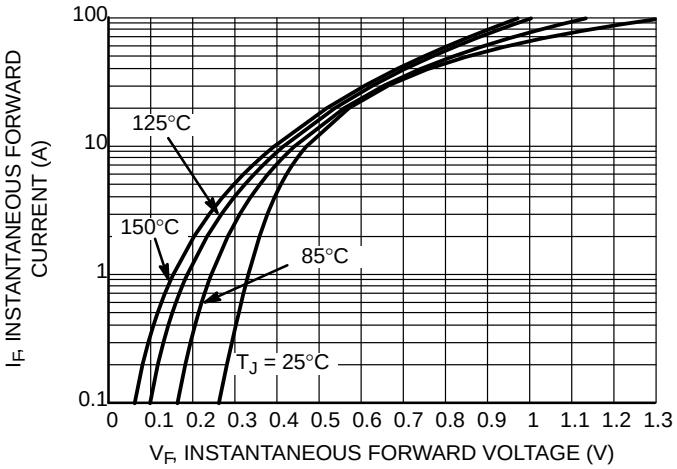


Figure 1. Typical Forward Voltage

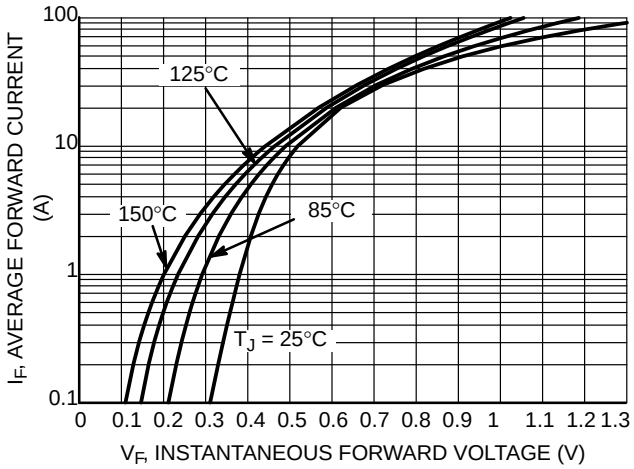


Figure 2. Maximum Forward Voltage

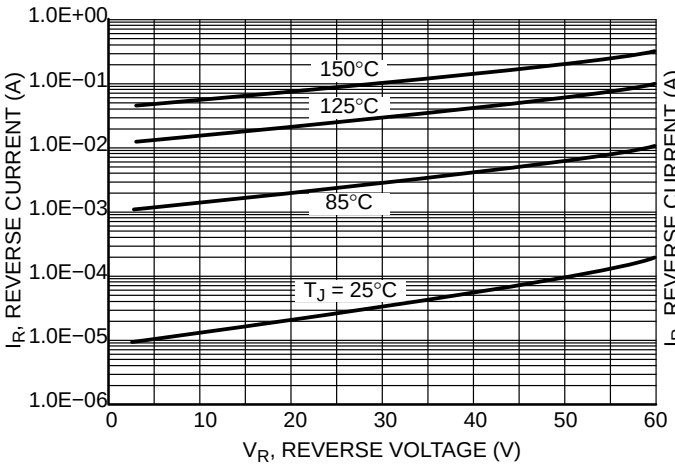


Figure 3. Typical Reverse Current

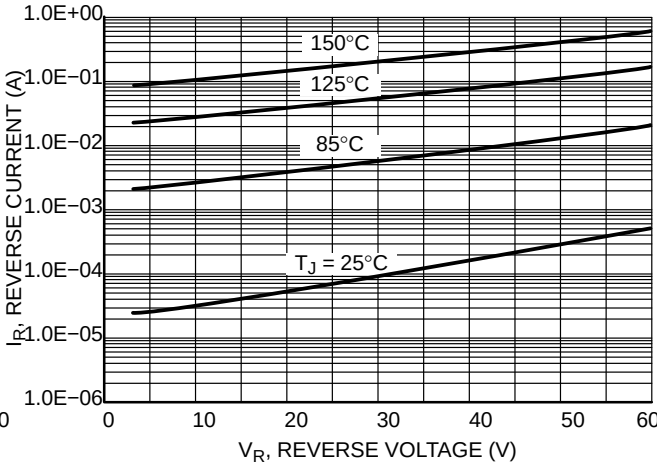


Figure 4. Maximum Reverse Current

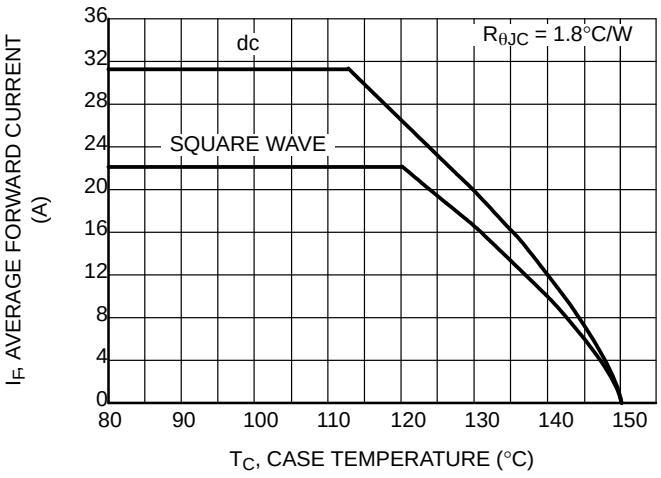


Figure 5. Current Derating, Case per Leg

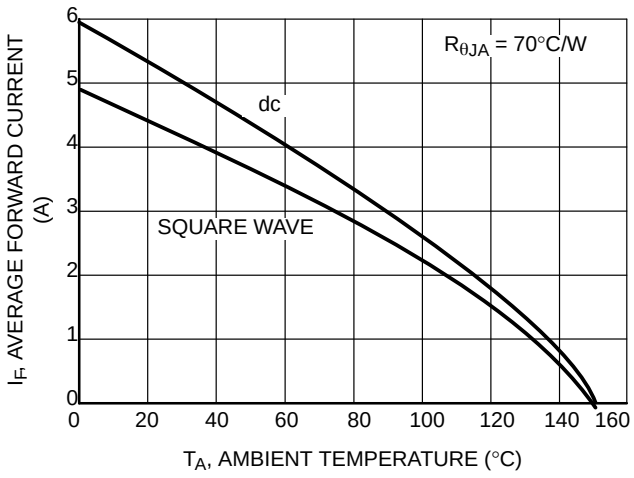


Figure 6. Current Derating, Ambient per Leg

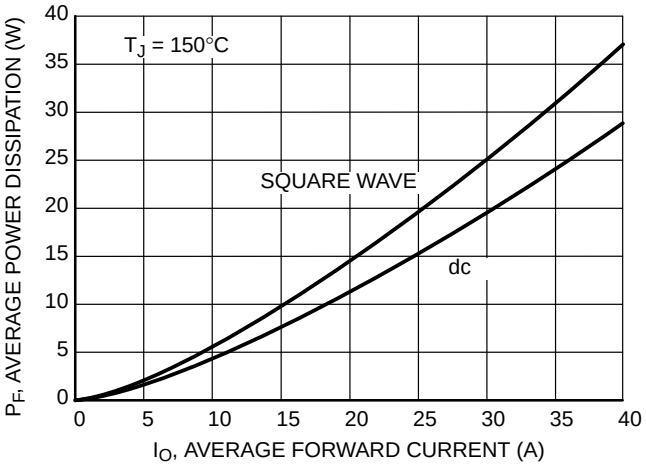


Figure 7. Forward Power Dissipation

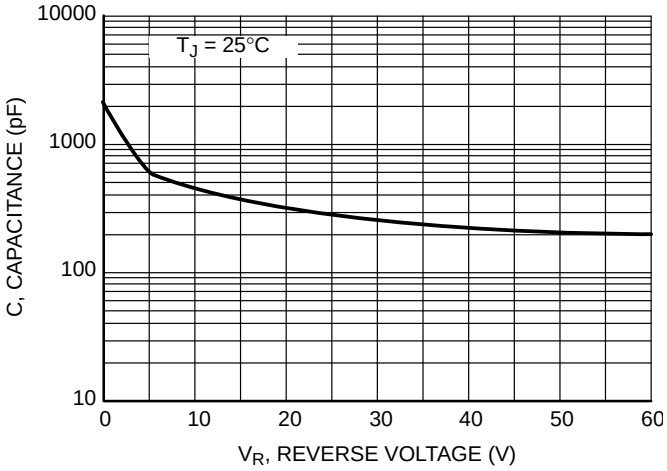


Figure 8. Capacitance

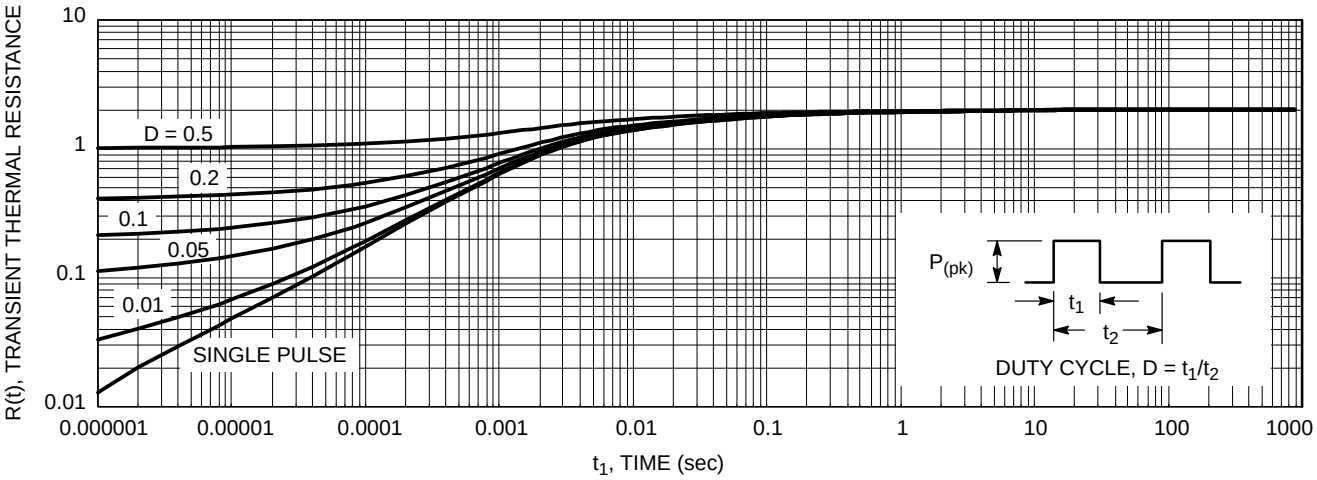


Figure 9. Thermal Response Junction−to−Case for MBR40L60CT

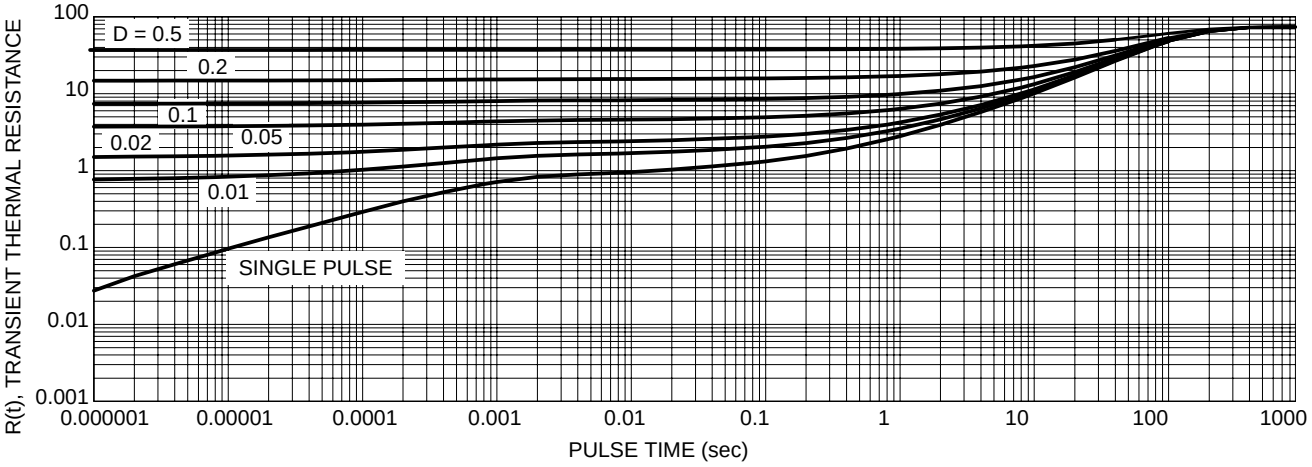
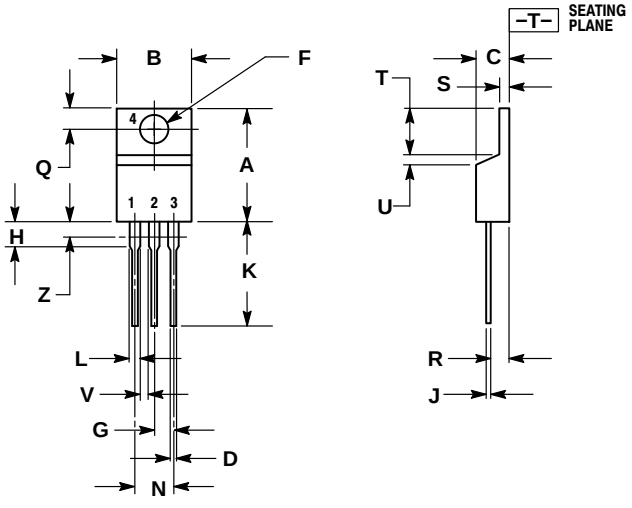


Figure 10. Thermal Response Junction−to−Ambient for MBR40L60CT

MBR40L60CTG

PACKAGE DIMENSIONS

TO−220
CASE 221A−09
ISSUE AH



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.415	9.66	10.53
C	0.160	0.190	4.07	4.83
D	0.025	0.038	0.64	0.96
F	0.142	0.161	3.61	4.09
G	0.095	0.105	2.42	2.66
H	0.110	0.161	2.80	4.10
J	0.014	0.024	0.36	0.61
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.15	1.52
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	---	1.15	---
Z	---	0.080	---	2.04

STYLE 6:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

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MBR40L60CT/D