SWITCHMODE™ Power Rectifiers

This series uses the Schottky Barrier principle with a platinum barrier metal. These state−of−the−art devices have the following features:

Features

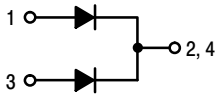
- 20 A Total (10 A Per Diode Leg)
- Guard−Ring for Stress Protection
- Low Forward Voltage
- 150°C Operating Junction Temperature
- Epoxy Meets UL 94 V−0 @ 0.125 in
- Low Power Loss/High Efficiency
- High Surge Capacity
- Low Stored Charge Majority Carrier Conduction
- Shipped 50 units per plastic tube
- Pb−Free Packages are Available*

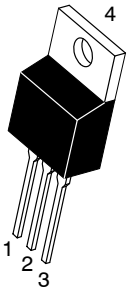
Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds

LMBR2040CTG, LMBR2045CTG
LMBR2060CTG, LMBR2080CTG
LMBR2090CTG, LMBR20100CTG
LMBR20150CTG

SCHOTTKY BARRIER RECTIFIERS 20 AMPERES 40−150 VOLTS





TO−220AB CASE 221A PLASTIC

MARKING DIAGRAM



A	= Assembly Location
Y	= Year
WW	= Work Week
B20x0	= Device Code
x	= 6, 8, 9 or 10
G	= Pb−Free Device
AKA	= Polarity Designator

LMBR2040CTG, LMBR2045CTG, LMBR2060CTG, LMBR2080CTG
LMBR2090CTG, LMBR20100CTG, LMBR20150CTG

MAXIMUM RATINGS (Per Diode Leg)

Rating	Symbol	LMBR							Unit
		2040 CTG	2045 CTG	2060 CTG	2080 CTG	2090 CTG	20100 CTG	20150 CTG	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	40	45	60	80	90	100	150	V
Average Rectified Forward Current (Rated V_R) T_C = 133°C	$I_{F(AV)}$	10							A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20 kHz) T_C = 133°C	I_{FRM}	20							A
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	150							A
Peak Repetitive Reverse Surge Current (2.0 μs, 1.0 kHz)	I_{RRM}	0.5							A
Operating Junction Temperature (Note 1)	T_J	−55 to +150							°C
Storage Temperature	T_{stg}	−55 to +150							°C
Voltage Rate of Change (Rated V_R)	dv/dt	10,000							V/μs

THERMAL CHARACTERISTICS

Maximum Thermal Resistance Junction−to−Case Junction−to−Ambient	$R_{\theta JC}$ $R_{\theta JA}$	2.0 60	°C/W

ELECTRICAL CHARACTERISTICS (Per Diode Leg)

Maximum Instantaneous Forward Voltage (Note 2) (i_F = 10 Amps, T_C = 25°C)	v_F	0.55	0.75	0.85	0.95	V
Maximum Instantaneous Reverse Current (Note 2) (Rated dc Voltage, T_C = 125°C) (Rated dc Voltage, T_C = 25°C) (Rated dc Voltage, T = 125°C − MBR2060CT only)	i_R	50.0 1.0 20.0		40.0 0.5		mA

1. The heat generated must be less than the thermal conductivity from Junction−to−Ambient: $dP_D/dT_J < 1/R_{\theta JA}$.
2. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

ORDERING INFORMATION

Device	Package	Shipping†
LMBR2040CTG, LMBR2045CTG LMBR2060CTG, LMBR2080CTG LMBR2090CTG, LMBR20100CTG LMBR20150CTG	TO−220	50 Units/Rail

LMBR2040CTG, LMBR2045CTG, LMBR2060CTG, LMBR2080CTG
LMBR2090CTG, LMBR20100CTG, LMBR20150CTG

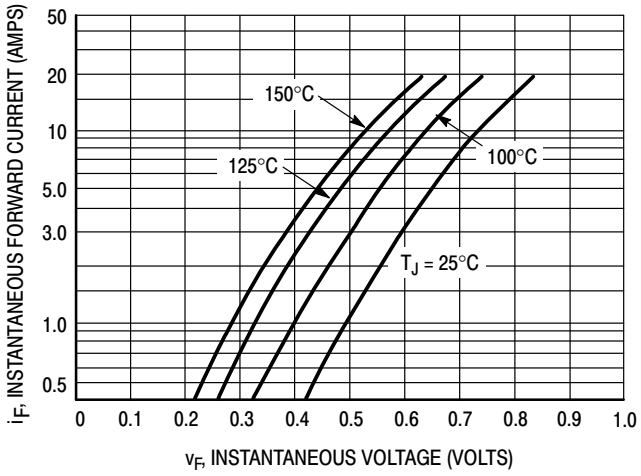


Figure 1. Typical Forward Voltage Per Diode

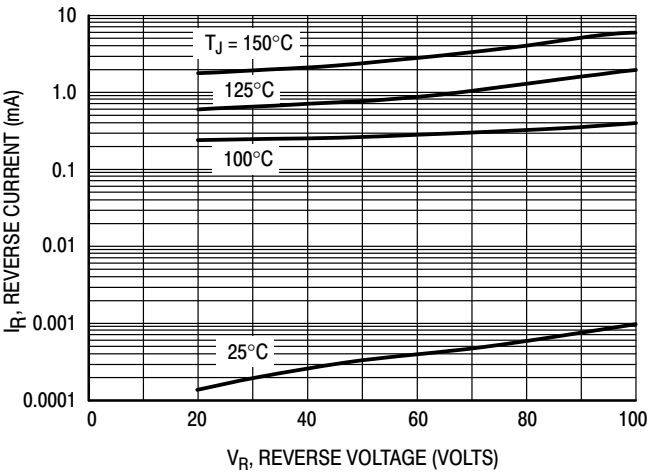


Figure 2. Typical Reverse Current Per Diode

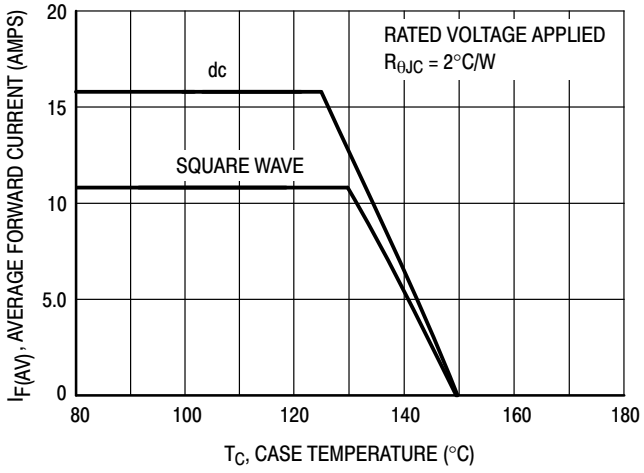


Figure 3. Typical Current Derating, Case, Per Leg

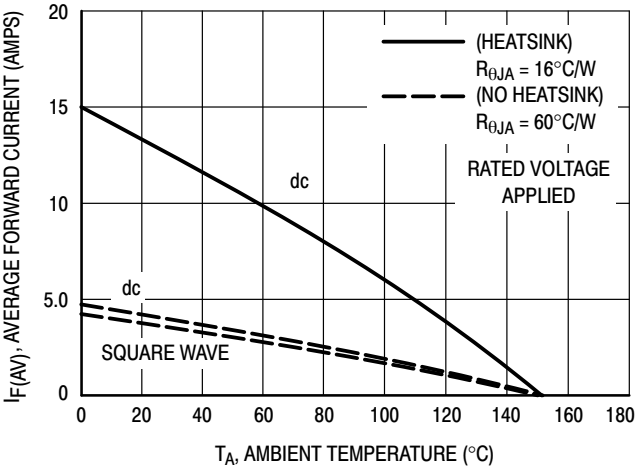


Figure 4. Typical Current Derating, Ambient, Per Leg

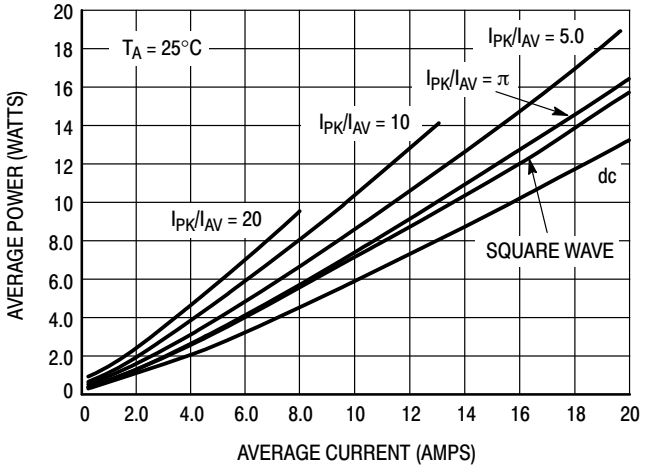
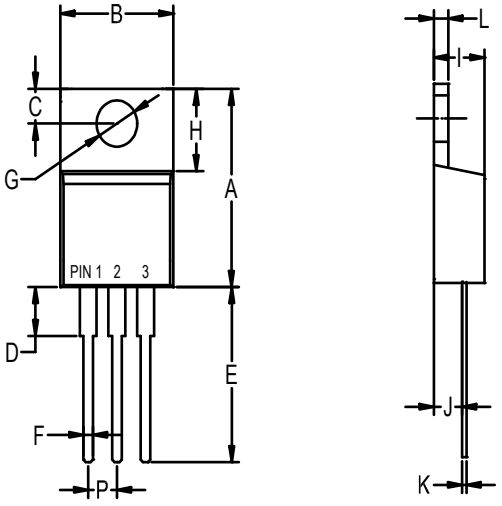


Figure 5. Average Power Dissipation and Average Current

PACKAGE DIMENSIONS

TO−220
CASE 221A−09
ISSUE AF



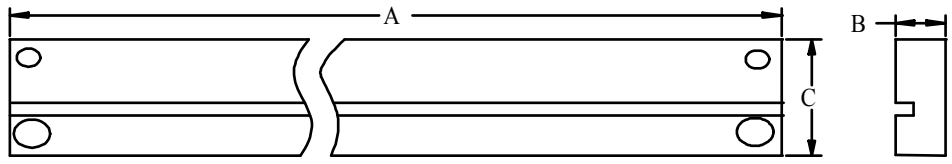
NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

Dim	Min	Max
A	14.9	15.8
B	———	10.5
C	2.62	2.87
D	3.56	4.06
E	13.0	14.3
F	0.68	0.94
G	3.74	3.91
H	5.84	6.86
I	4.44	4.86
J	2.54	2.79
K	0.35	0.64
L	1.14	1.40
P	2.41	2.67

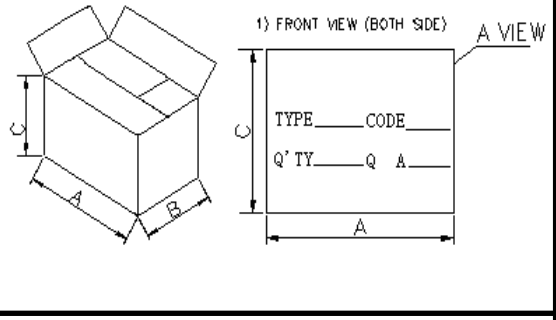
STYLE 6:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

Marking and packaging illustration

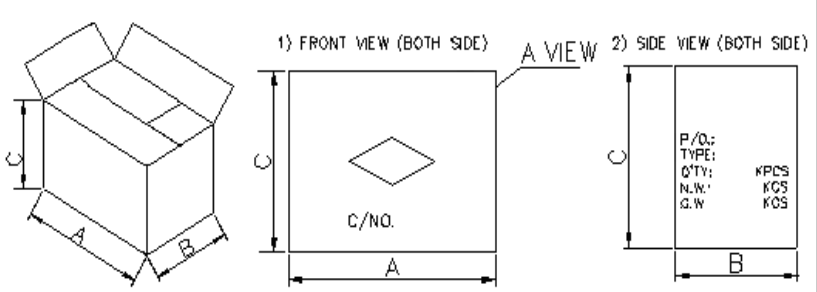
1、Packaging



Tube



Inside Box



Outside Box

类别	A（mm）	B（mm）	C（mm）
ITO-220 Tube(50EA per tube)	510±5	7±0.8	33±1
ITO-220 Inside Box（1K per box）	542±5	82±2	78±1
ITO-220 outside Box（10K per box）	555±5	165±5	385±5