MBR2060CT, MBR2080CT, MBR2090CT, MBR20100CT

MBR2060CT and MBR20100CT are Preferred Devices

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
- 175°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



ON Semiconductor®

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MARKING DIAGRAM



А	= Assembly Location
Y	= Year
WW	= Work Week
B20x0	= Device Code
х	= 6, 8, 9 or 10
G	= Pb-Free Device
AKA	= Polarity Designator

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

*For additional information on our Pb–Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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

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			M	BR		
Rating	Symbol	2060CT	2080CT	2090CT	20100CT	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	60	80	90	100	V
Average Rectified Forward Current (Rated V _R) T _C = 133°C	I _{F(AV)}		1	0		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}		1	50		A
Peak Repetitive Reverse Surge Current (2.0 μ s, 1.0 kHz)	I _{RRM}	0.5		А		
Operating Junction Temperature (Note 1)	TJ	- 65 to +175			°C	
Storage Temperature	T _{stg}	- 65 to +175			°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	$R_{ heta JC} \ R_{ heta JA}$.0 0		°C/W
ELECTRICAL CHARACTERISTICS (Per Diode Leg)						
$\label{eq:maximum lnstantaneous Forward Voltage (Note 2)} \\ (i_F = 10 \mbox{ Amps, } T_C = 125^{\circ}C) \\ (i_F = 10 \mbox{ Amps, } T_C = 25^{\circ}C) \\ (i_F = 20 \mbox{ Amps, } T_C = 125^{\circ}C) \\ (i_F = 20 \mbox{ Amps, } T_C = 25^{\circ}C) \\ (i_F = 2$	VF		0. 0.	75 85 85 95		V
Maximum Instantaneous Reverse Current (Note 2) (Rated dc Voltage, $T_C = 125^{\circ}C$) (Rated dc Voltage, $T_C = 125^{\circ}C - MBR2060CT$ only) (Rated dc Voltage, $T_C = 25^{\circ}C$)	i _R			.0 0 .1		mA

MAXIMUM RATINGS (Per Diode Leg)

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 [†]
MBR2060CT	TO-220	
MBR2060CTG	TO-220 (Pb-Free)	50 Units / Rail
MBR2080CT	TO-220	
MBR2080CTG	TO-220 (Pb-Free)	50 Units / Rail
MBR2090CT	TO-220	
MBR2090CTG	TO-220 (Pb-Free)	50 Units / Rail
MBR20100CT	TO-220	
MBR20100CTG	TO-220 (Pb-Free)	50 Units / Rail

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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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

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PACKAGE DIMENSIONS



	INCHES		MILLIMETERS		
DIM	MIN	MAX	MIN	MAX	
Α	0.570	0.620	14.48	15.75	
В	0.380	0.405	9.66	10.28	
С	0.160	0.190	4.07	4.82	
D	0.025	0.035	0.64	0.88	
F	0.142	0.161	3.61	4.09	
G	0.095	0.105	2.42	2.66	
Η	0.110	0.155	2.80	3.93	
J	0.014	0.025	0.36	0.64	
Κ	0.500	0.562	12.70	14.27	
Г	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	
Ч	0.235	0.255	5.97	6.47	
c	0.000	0.050	0.00	1.27	
۷	0.045		1.15		
Z		0.080		2.04	

Y14.5M, 1982. CONTROLLING DIMENSION: INCH.

DIMENSION Z DEFINES A ZONE WHERE ALL

PIN 1. ANODE CATHODE 2. 3. ANODE CATHODE

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