

Switch-mode Power Rectifier

Dual Schottky Rectifier

MBR20200CT

Features and Benefits

- Low Forward Voltage
- Low Power Loss/High Efficiency
- High Surge Capacity
- 175°C Operating Junction Temperature
- 20 A Total (10 A Per Diode Leg)
- This is a Pb-Free Device*

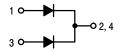
Applications

- Power Supply Output Rectification
- Power Management
- Instrumentation

Mechanical Characteristics

- Case: Epoxy, Molded
- Epoxy Meets UL 94, V-0 @ 0.125 in
- Weight: 1.9 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperatures for Soldering Purposes: 260°C Max. for 10 Seconds
- ESD Rating: Human Body Model 3B Machine Model C

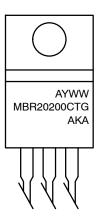
SCHOTTKY BARRIER RECTIFIER 20 AMPERES, 200 VOLTS





TO-220 CASE 221A PLASTIC STYLE 6

MARKING DIAGRAM



A = Assembly Location

Y = Year
WW = Work Week
G = Pb-Free Package
AKA = Diode Polarity

ORDERING INFORMATION

Device	Package	Shipping
MBR20200CTG	TO-220 (Pb-Free)	50 Units / Tube

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^{*}For additional information on our Pb-Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

MBR20200CT

MAXIMUM RATINGS (Per Leg)

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	200	V
Average Rectified Forward Current (T _C = 161°C) Per Leg Per Package	I _{F(AV)}	10 20	Α
Peak Repetitive Forward Current per Leg (Square Wave, 20 kHz, T _C = 158°C)	I _{FRM}	20	Α
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I _{FSM}	150	Α
Peak Repetitive Reverse Surge Current (2.0 μs, 1.0 kHz)	I _{RRM}	1.0	Α
Storage Temperature Range	T _{stg}	−65 to +175	°C
Operating Junction Temperature	T_J	-65 to +175	°C
Voltage Rate of Change (Rated V _R)	dv/dt	10,000	V/μs

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	Condition	Symbol	Value	Unit
Maximum Thermal Resistance, Junction-to-Case	Minimum Pad	$R_{\theta JC}$	2.0	°C/W
Maximum Thermal Resistance, Junction-to-Ambient	Minimum Pad	$R_{\theta JA}$	60.0	°C/W

ELECTRICAL CHARACTERISTICS (Per Leg)

Characteristic	Symbol	Min	Typical	Max	Unit
Maximum Instantaneous Forward Voltage (Note 1) ($I_F = 10 \text{ A}, T_J = 25^{\circ}\text{C}$) ($I_F = 10 \text{ A}, T_J = 125^{\circ}\text{C}$) ($I_F = 20 \text{ A}, T_J = 25^{\circ}\text{C}$) ($I_F = 20 \text{ A}, T_J = 125^{\circ}\text{C}$) ($I_F = 20 \text{ A}, T_J = 125^{\circ}\text{C}$)	V _F	1 1 1	0.80 0.66 0.89 0.76	0.90 0.80 1.00 0.90	٧
Maximum Instantaneous Reverse Current (Note 1) (Rated dc Voltage, T_J = 25°C) (Rated dc Voltage, T_J = 125°C)	I _R		0.0002 0.4	1.0 50	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.

DYNAMIC CHARACTERISTICS (Per Leg)

Characteristic	Symbol	Value	Unit
Capacitance (V _R = -5.0 V, T _C = 25°C, Frequency = 1.0 MHz)	C _T	500	pF

^{1.} Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤[2.0%.

MBR20200CT

TYPICAL CHARACTERISTICS

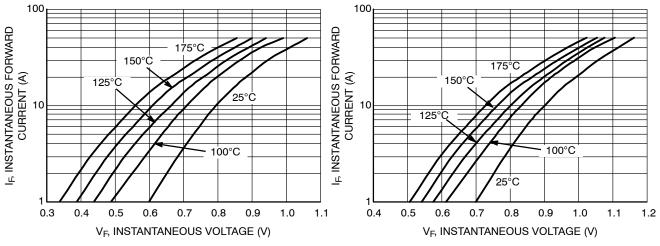


Figure 1. Typical Forward Voltage

Figure 2. Maximum Forward Voltage

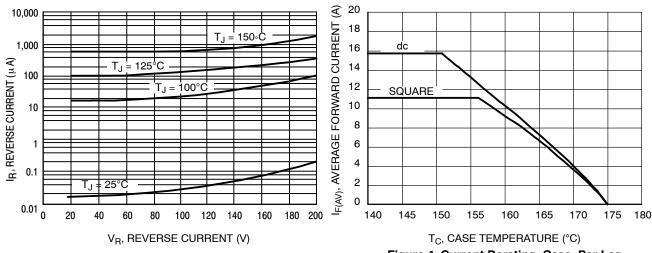


Figure 3. Typical Reverse Current (Per Leg)

Figure 4. Current Derating, Case, Per Leg

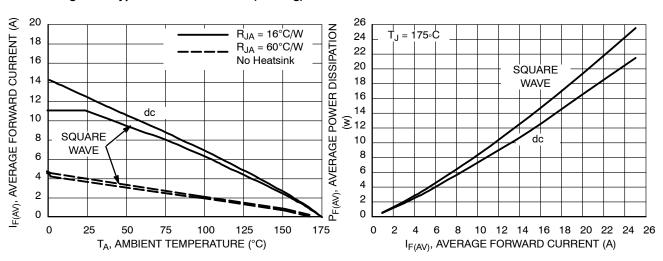


Figure 5. Current Derating, Ambient, Per Leg

Figure 6. Forward Power Dissipation

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TYPICAL CHARACTERISTICS (CONTINUED)

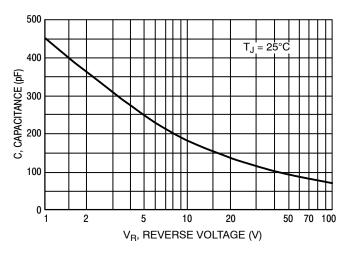


Figure 7. Typical Capacitance (Per Leg)

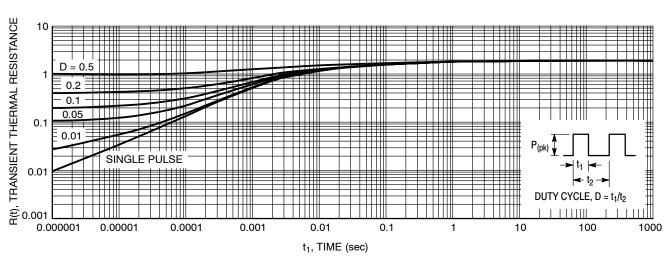


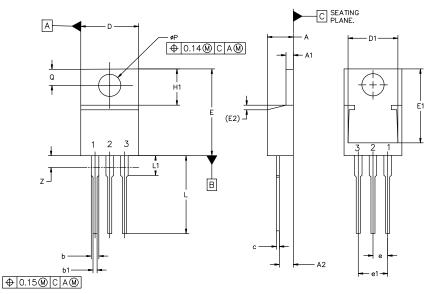
Figure 8. Thermal Response Junction-to-Case





TO-220-3 10.10x15.12x4.45, 2.54P CASE 221A **ISSUE AL**

DATE 05 FEB 2025



MILLIMETERS					
DIM	MIN	NOM	MAX		
Α	4.07	4.45	4.83		
A1	1.15	1.28	1.41		
A2	2.04	2.42	2.79		
b	1.15	1.34	1.52		
b1	0.64	0.80	0.96		
С	0.36	0.49	0.61		
D	9.66	10.10	10.53		
D1	8.43	8.63	8.83		
Е	14.48	15.12	15.75		
E1	12.58	12.78	12.98		
E2	1.27 REF				

MILLIMETERS						
DIM	MIN	NOM	MAX			
е	2.42	2.54	2.66			
e1	4.83	5.08	5.33			
H1	5.97	6.22	6.47			
L	12.70	13.49	14.27			
L1	2.80	3.45	4.10			
Q	2.54	2.79	3.04			
ØΡ	3.60	3.85	4.09			
Z	-,	-,	3.48			

NOTES:

- NOTES:

 1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.

 2. CONTROLLING DIMENSION: MILLIMETERS.

 3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

STYLE 1:		STYLE 2:		STYLE 3:		STYLE 4:	
PIN 1.	BASE	PIN 1.	BASE	PIN 1.	CATHODE	PIN 1.	MAIN TERMINAL 1
2.	COLLECTOR	2.	EMITTER	2.	ANODE	2.	MAIN TERMINAL 2
3.	EMITTER	3.	COLLECTOR	3.	GATE	3.	GATE
4.	COLLECTOR	4.	EMITTER	4.	ANODE	4.	MAIN TERMINAL 2
STYLE 5:		STYLE 6:		STYLE 7:		STYLE 8:	
PIN 1.	GATE	PIN 1.	ANODE	PIN 1.	CATHODE	PIN 1.	CATHODE
2.	DRAIN	2.	CATHODE	2.	ANODE	2.	ANODE
3.	SOURCE	3.	ANODE	3.	CATHODE	3.	EXTERNAL TRIP/DELAY
4.	DRAIN	4.	CATHODE	4.	ANODE	4.	ANODE
STYLE 9:		STYLE 10:		STYLE 11:	:	STYLE 12:	:
PIN 1.	GATE	PIN 1.	GATE	PIN 1.	DRAIN	PIN 1.	MAIN TERMINAL 1
2.	COLLECTOR	2.	SOURCE	2.	SOURCE	2.	MAIN TERMINAL 2
3.	EMITTER	3.	DRAIN	3.	GATE	3.	GATE
4.	COLLECTOR	4.	SOURCE	4.	SOURCE	4.	NOT CONNECTED

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DESCRIPTION:	TO-220-3 10.10x15.12x4.4	TO-220-3 10.10x15.12x4.45, 2.54P			

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