TAIWAN SEMICONDUCTOR

The Smartest Choice

MBR2035PT - MBR20200PT

20.0AMPS. Schottky Barrier Rectifiers

TO-3P/TO-247AD

Features

- ✧ UL Recognized File # E-326243
- ✧ Plastic material used carriers Underwriters Laboratory Classification 94V-0
- ✧ Metal silicon junction, majority carrier conduction
- ✧ Low power loss, high efficiency
- ✧ High current capability, low forward voltage drop
- ✧ High surge capability
- ✧ For use in low voltage - high frequency inventers, free wheeling, and polarity protection applications
- ✧ Guard-ring for overvoltage protection
- ✧ High temperature soldering guaranteed: 260℃/10 seconds, 0.17", (4.3mm) from case
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode



Pb-Free

RoHS COMPLIANT

Mechanical Data

- ✧ Cases: JEDEC TO-3P/TO-247AD molded plastic body
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- ✧ Polarity: As marked
- ✧ Mounting position:Any
- ✧ Mounting torque: 10 in- lbs, max
- ✧ Weight: 6.12 grams

Ordering Information (example)

Part No.	Package	Packing	Packing code	Packing code (Green)
MBR2035PT	TO-3P	30 / TUBE	C0	C0G

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ ambient temperature unless otherwise specified.

Parameter	Symbol	MBR 2035 PT	MBR 2045 PT	MBR 2050 PT	MBR 2060 PT	MBR 2090 PT	MBR 20100 PT	MBR 20150 PT	MBR 20200 PT	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	35	45	50	60	90	100	150	200	V
Maximum RMS Voltage	V_{RMS}	24	31	35	42	63	70	105	140	V
Maximum DC Blocking Voltage	V_{DC}	35	45	50	60	90	100	150	200	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	20								A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20KHz)	I_{FRM}	20								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	150								A
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	1.0		0.5						A
Maximum Instantaneous Forward Voltage at (Note 2)	V_F									V
IF=10A, T_A=25℃		-		0.80		0.85		0.95		
IF=10A, T_A=125℃		0.57		0.70		0.75		0.92		
IF=20A, T_A=25℃		0.84		0.95		0.95		1.02		
IF=20A, T_A=125℃		0.72		0.85		0.85		0.98		
Maximum Instantaneous Reverse Current @ T_A=25 ℃	I_R	0.1								mA
at Rated DC Blocking Voltage Per Leg @ T_A=125 ℃		15		10		5				mA
Voltage Rate of Change,(Rated V_R)	dV/dt	10,000								V/us
Maximum Thermal Resistance Per Leg	$R_{\theta JC}$	1.0								^{O}C/W
Operating Junction Temperature Range	T_J	- 55 to + 150								^{O}C
Storage Temperature Range	T_{STG}	- 55 to + 150								^{O}C

Note 1: 2.0uS Pulse Width, f=1.0KHz

Note 2: Pulse Test : 300us Pulse Width, 1% Duty Cycle

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RATINGS AND CHARACTERISTIC CURVES (MBR2035PT THRU MBR20200PT)

FIG.1- FORWARD CURRENT DERATING CURVE

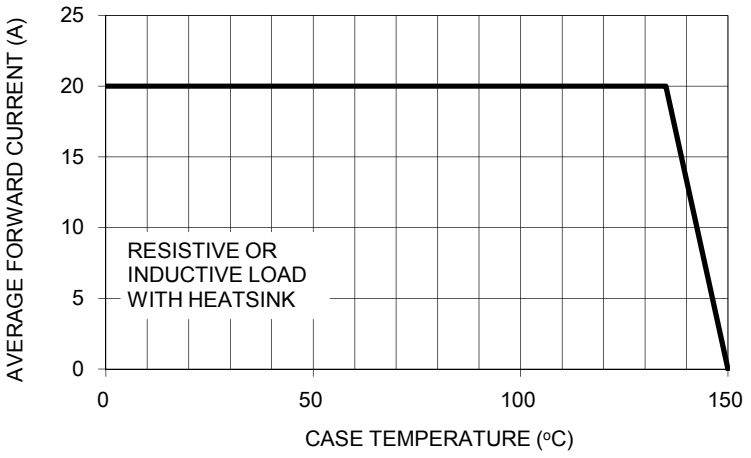


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

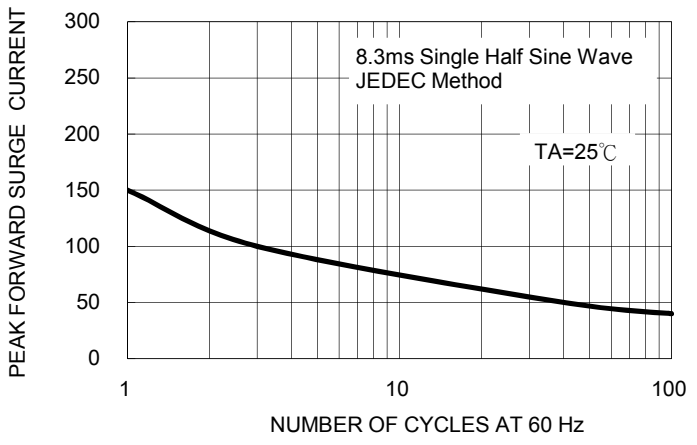


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

FIG. 4- TYPICAL REVERSE CHARACTERISTICS PER LEG

FIG. 5- TYPICAL JUNCTION CAPACITANCE PER LEG

FIG. 6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

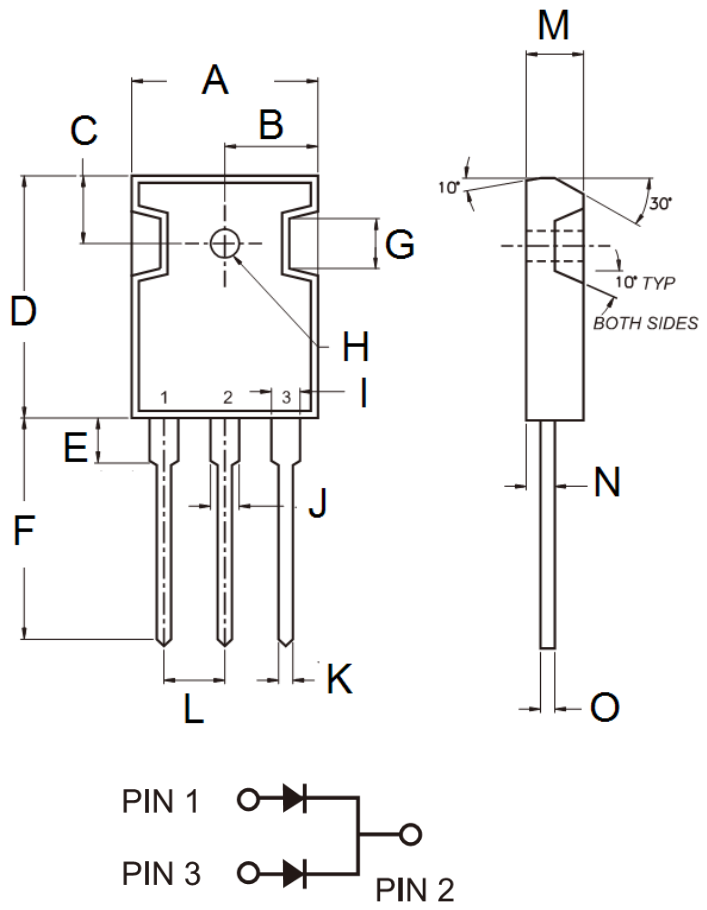
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Ordering information

Part No.	Package	BULK Packing	Packing code	Packing code (Green)
MBR20xxPT	TO-3P	30 / TUBE	C0	C0G

Note: "xx" is Device Code from "35" thru "200".

Dimensions



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	15.90	16.40	0.626	0.646
B	7.90	8.20	0.311	0.323
C	5.70	6.20	0.224	0.244
D	20.80	21.30	0.819	0.839
E	3.50	4.10	0.138	0.161
F	19.70	20.20	0.776	0.795
G	-	4.30	-	0.169
H	2.90	3.40	0.114	0.134
I	1.93	2.18	0.076	0.086
J	2.97	3.22	0.117	0.127
K	1.12	1.22	0.044	0.048
L	5.20	5.70	0.205	0.224
M	4.90	5.16	0.193	0.203
N	2.70	3.00	0.106	0.118
O	0.51	0.76	0.020	0.030

Marking Diagram



P/N = Specific Device Code
G = Green Compound
YWW = Date Code
F = Factory Code