TAIWAN SEMICONDUCTOR

The Smartest Choice

MBR2035CT - MBR20200CT

20.0 AMPS. Schottky Barrier Rectifiers

TO-220AB

Features

- ✧ 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 inverters, free wheeling, and polarity protection applications
- ✧ Guard-ring for overvoltage protection
- ✧ High temperature soldering guaranteed: 260℃/10 seconds, 0.25"(6.35mm) from case
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode



AEC-Q101 Qualified

Pb-Free

RoHS COMPLIANT

Mechanical Data

- ✧ Cases: JEDEC TO-220AB molded plastic
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- ✧ Polarity: As marked
- ✧ Mounting position:Any
- ✧ Mounting torque: 5 in. - lbs, max
- ✧ Weight: 1.88 grams

Ordering Information(example)

Part No.	Package	Packing	Packing code	Packing code (Green)
MBR2035CT	TO-220AB	50 / TUBE	C0	C0G

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ ambient temperature unless otherwise specified.

Parameter	Symbol	MBR 2035 CT	MBR 2045 CT	MBR 2050 CT	MBR 2060 CT	MBR 2090 CT	MBR 20100 CT	MBR 20150 CT	MBR 20200 CT	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 VR, 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		0.99		
IF=10A, T_A=125℃		0.57		0.70		0.75		0.87		
IF=20A, T_A=25℃		0.84		0.95		0.95		1.23		
IF=20A, T_A=125℃		0.72		0.85		0.85		1.10		
Maximum Instantaneous Reverse Current @ T_A=25 ℃	I_R	0.1								mA
at Rated DC Blocking Voltage @ T_A=125 ℃		15		10		5			0.15	mA
Voltage Rate of Change (Rated V_R)	dV/dt	10000								V/uS
Typical Junction Capacitance	Cj	400		320						pF
Typical Thermal Resistance Per Leg	$R_{\theta JC}$	1.0				2.0				^{O}C/W
Operating Temperature Range	T_J	- 65 to + 150								^{O}C
Storage Temperature Range	T_{STG}	- 65 to + 175								^{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 (MBR2035CT THRU MBR20200CT)

FIG.1- FORWARD CURRENT DERATING CURVE

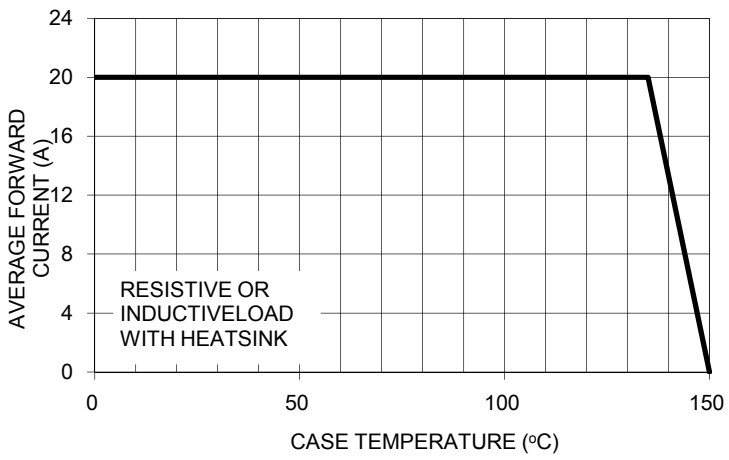


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

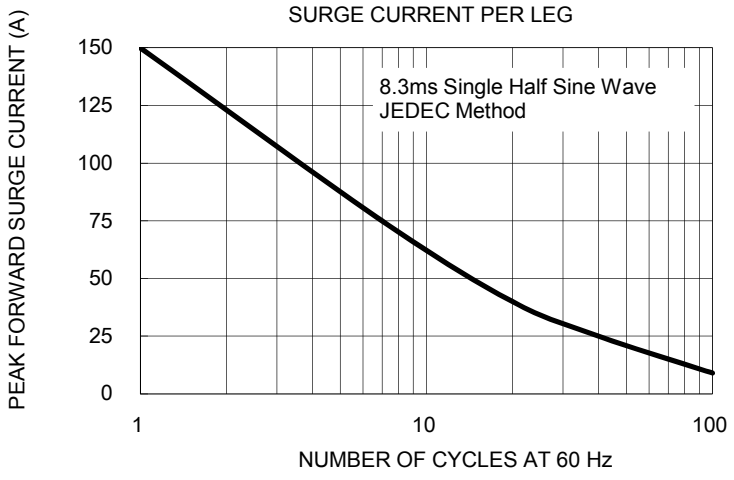


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

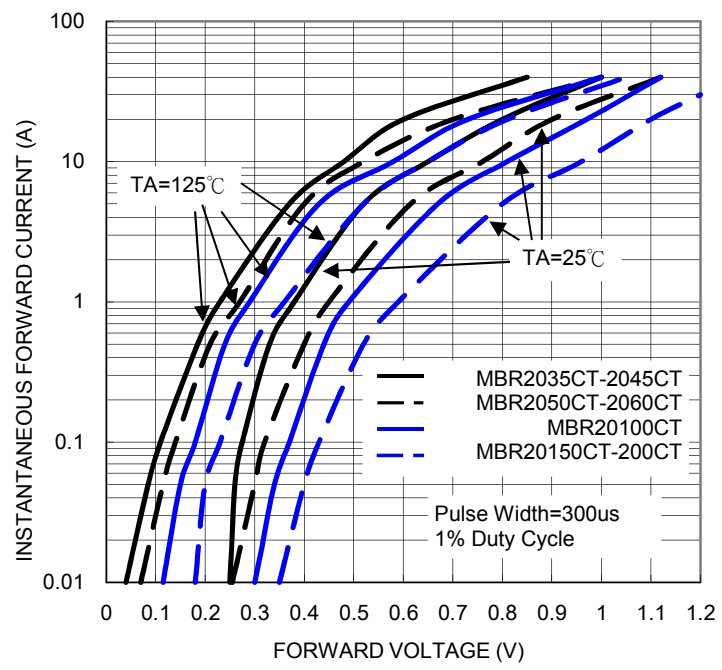


FIG. 4- TYPICAL REVERSE CHARACTERISTICS PER LEG

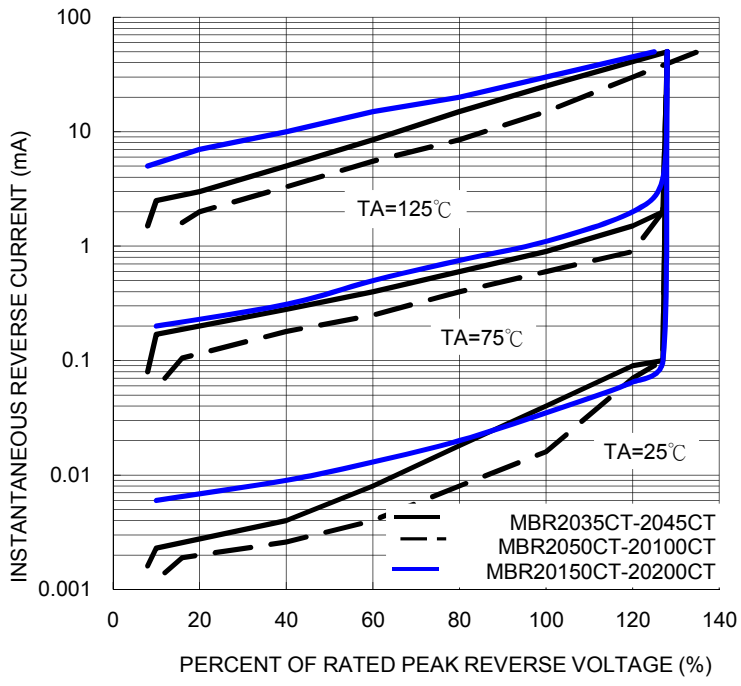


FIG. 5- TYPICAL JUNCTION CAPACITANCE PER LEG

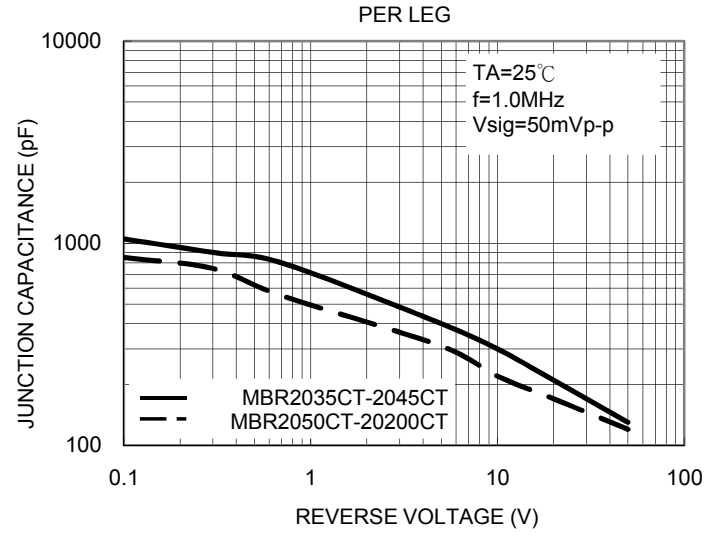
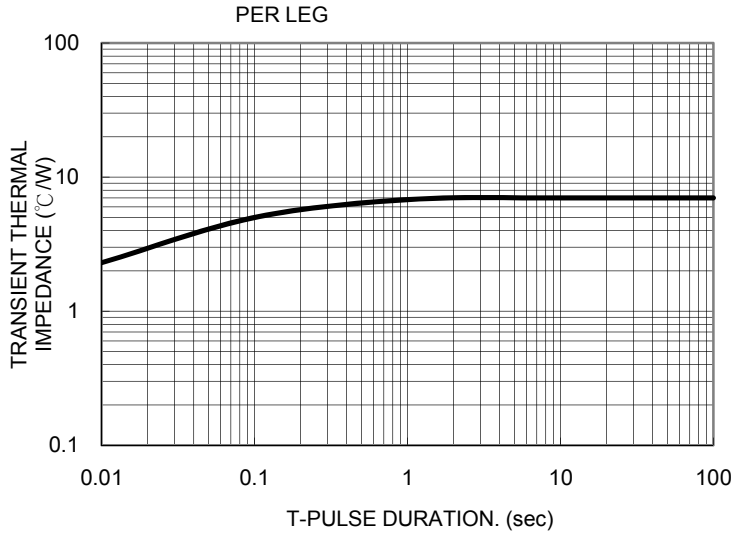


FIG. 6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



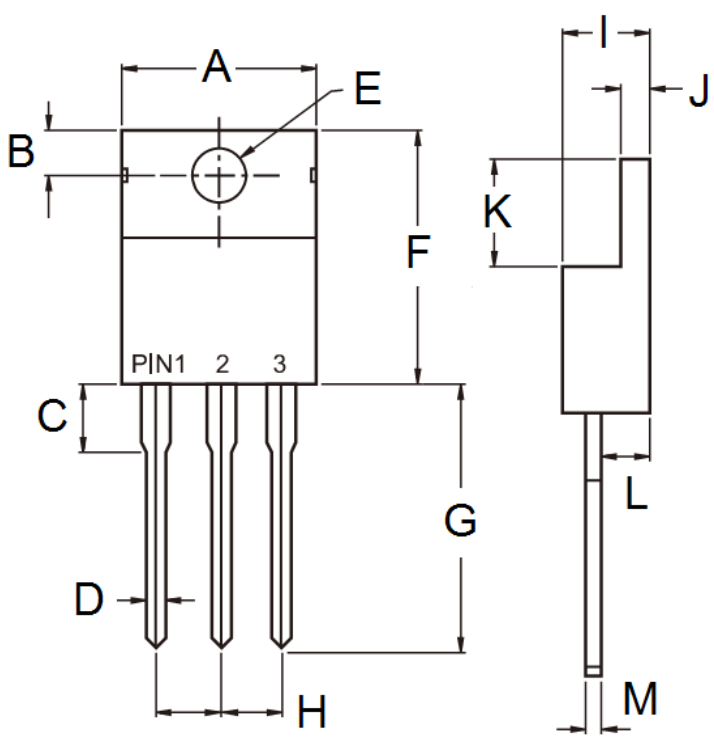
Version:J12

Ordering information

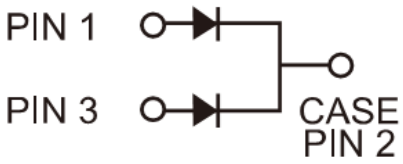
Part No.	Package	BULK Packing	Packing code	Packing code (Green)
MBR20xxCT	TO-220AB	50 / TUBE	C0	C0G

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

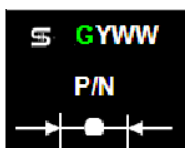
Dimensions



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	-	10.50	-	0.413
B	2.62	3.44	0.103	0.135
C	2.80	4.20	0.110	0.165
D	0.68	0.94	0.027	0.037
E	3.54	4.00	0.139	0.157
F	14.60	16.00	0.575	0.630
G	13.19	14.79	0.519	0.582
H	2.41	2.67	0.095	0.105
I	4.42	4.76	0.174	0.187
J	1.14	1.40	0.045	0.055
K	5.84	6.86	0.230	0.270
L	2.20	2.80	0.087	0.110
M	0.35	0.64	0.014	0.025



Marking Diagram



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