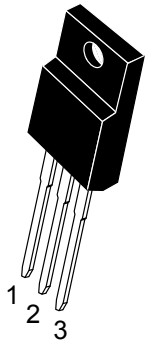
MBRF20100CTG

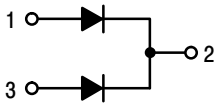
20.0 AMPS. Isolated Schottky Barrier Rectifiers

TO-220F



Features

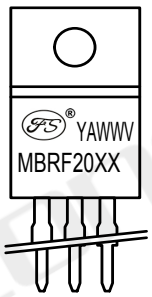
- Metal silicon junction, majority carrier conduction
- Plastic material used carries Underwriters Laboratory Classifications 94V-0
- High surge capability
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Guardring for overvoltage protection
- High temperature soldering guaranteed: 260℃/10 seconds, at terminals
- Green compound with suffix "G" on packing code & prefix "G" on datecode.



Mechanical Data

- Case:TO-220F molded plastic body
- Polarity: As marked
- Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- Mounting position: Any
- Weight: 1.7grams
- Mounting torque: 5 in. - lbs. max

Marking Diagram



Y = Year
A = Assembly Location
WW = Work Week
V =Versio

MBRF20XX = Specific Device Code

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%

Type Number	Symbol	MBRF20100CTG	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	100	V
Maximum RMS Voltage	V_{RMS}	70	V
Maximum DC Blocking Voltage	V_{DC}	100	V
Maximum Average Forward Rectified Current at Tc=135℃	$I_{F(AV)}$	20	A
Peak Repetitive Forward Current (Rated VR, Square Wave, 20KHz) at Tc=135℃	I_{FRM}	20	A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	300	A
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	0.5	A
Maximum Instantaneous Forward Voltage (Note 2) IF=10A, TA=25℃ IF=10A, TA=125℃ IF=20A, T_A=25℃ IF=20A, T_A=125℃	V_F	 0.85 0.75 0.90 0.80	V
Maximum Reverse Current @ Rated VR T_A=25 ℃ T_A=125 ℃	I_R	0.1 0.6	mA
Voltage Rate of Change (Rated V_R)	dV/dt	10,000	V/us
Typical Junction Capacitance	Cj	320	pF
RMS Isolation Voltage (MBRF Type Only) from Terminals to Heatsink with t=1.0 Second, RH≦30%	V_{ISO}	4500(Note 3) 3500(Note 4) 1500(Note 5)	V
Typical Thermal Resistance Per Leg	$R_{\theta jC}$	3.0	°C/W
Operating Temperature Range	T_J	- 40 to + 150	°C
Storage Temperature Range	T_{STG}	- 40 to + 150	°C

Note 1: 2.0uS Pulse Width, f=1.0KHz
Note 2: Pulse Test : 300uS Pulse Width, 1% Duty Cycle
Note 3: Clip Mounting (on case), where lead does not overlap heatsink with 0.11" offset
Note 4: Clip Mounting (on case), where lead does not overlap heatsink
Note 5: Screw Mounting screw, where diameter is ≦4.9mm(0.19")

RATINGS AND CHARACTERISTIC CURVES

FIG.1 FORWARD CURRENT DERATING CURVE

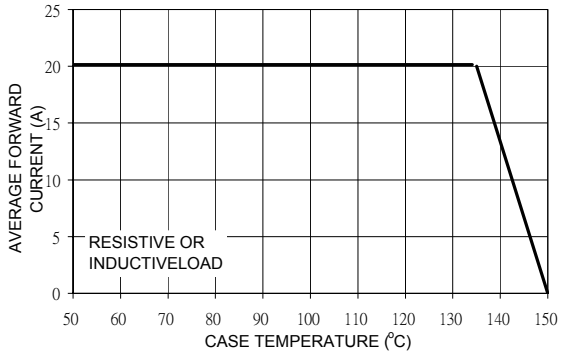
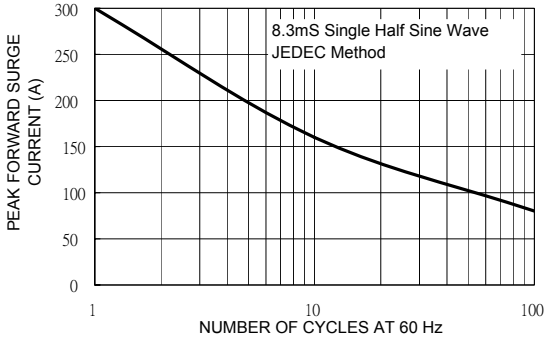
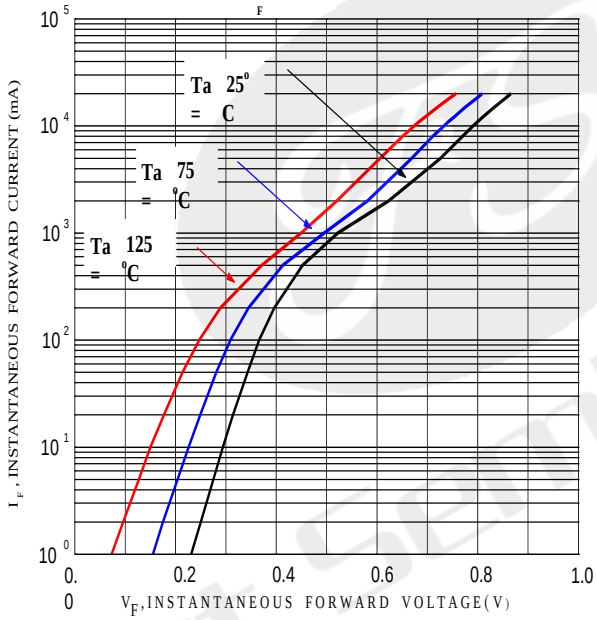


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG



V_F -- I_F



I_R -- V_R

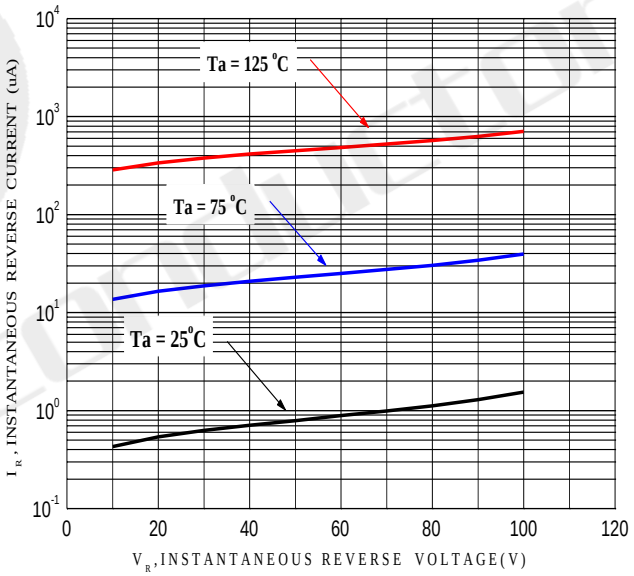


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

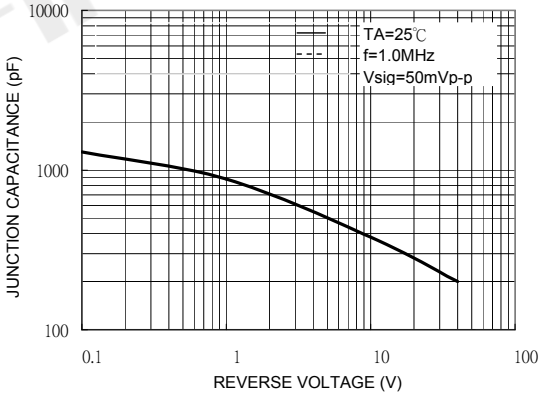
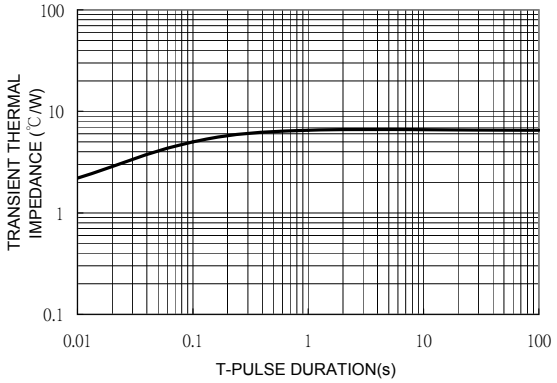
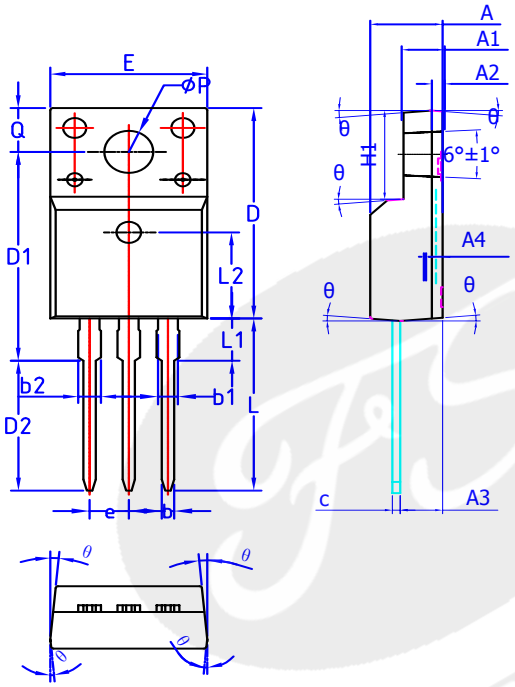


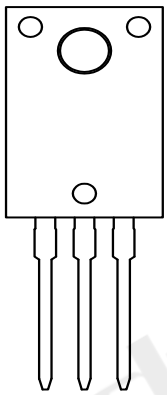
FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



Package Dimensions

TO-220F





COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	4.50	4.70	4.90
A1	2.34	2.54	2.74
A2		0.70 REF	
A3	2.56	2.76	2.96
b	0.70	0.80	0.90
b1	1.17	1.2	1.25
b2	1.17	1.2	1.25
c	0.45	0.50	0.60
D	15.67	15.87	16.07
D1	15.55	15.75	15.95
D2	10.0	10.2	10.4
E	9.96	10.16	10.36
e		2.54BSC	
H1	6.48	6.68	6.88
L	12.68	12.98	13.28
L1	-	-	3.50
L2		6.50REF	
ΦP	3.08	3.18	3.28
Q	3.20	3.30	3.40
θ1	1°	3°	5°
A4	0.53	0.56	0.59

Declaration

- FIRST reserves the right to change the specifications, the same specifications of products due to different packaging line mold, the size of the appearance will be slightly different, shipped in kind, without notice! Customers should obtain the latest version information before ordering, and verify whether the relevant information is complete and up-to-date.
- Any semiconductor product under certain conditions has the possibility of failure or failure,The buyer has the responsibility to comply with safety standards and take safety measures when using FIRST products for system design and manufacturing,To avoid To avoid potential failure risks, which may cause personal injury or property damage!
- Product promotion endless, our company will wholeheartedly provide customers with better products!

ATTACHMENT

Revision History

Date	REV	Description	Page
2018.01.01	1.0	Initial release	