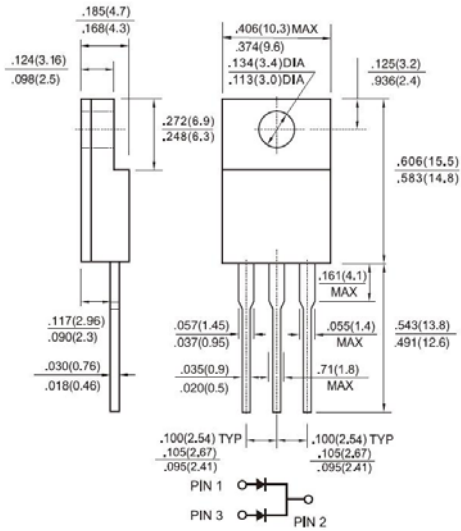




**Features**

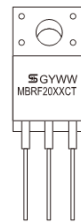
- ✧ UL Recognized File # E-326243
- ✧ Plastic material used carriers Underwriters Laboratory Classification 94V-0
- ✧ Metal silicon junction, majority carrier conductor
- ✧ Low power loss, high efficiency
- ✧ High current capability, low forward voltage drop
- ✧ High surge capability
- ✧ For use in low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



**Mechanical Data**

- ✧ Case: ITO-220AB molded plastic body
- ✧ 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: 1.7 grams

**Dimensions in inches and (millimeters)**



**Marking Diagram**

- MBRF20XXCT = Specific Device Code
- G = Green Compound
- Y = Year
- WW = Work Week

**Maximum Ratings and Electrical Characteristics**

Rating at 25 °C 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	MBRF	MBRF	MBRF	MBRF	MBRF	MBRF	MBRF	MBRF	MBRF	Unit
		2035 CT	2045 CT	2050 CT	2060 CT	2080 CT	2090 CT	20100 CT	20150 CT	20200 CT	
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	80	90	100	150	200	V
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	56	63	70	105	140	V
Maximum DC Blocking Voltage	$V_{DC}$	35	45	50	60	80	90	100	150	200	V
Maximum Average Forward Rectified Current at $T_c=135^\circ C$	$I_{F(AV)}$	20									A
Peak Repetitive Forward Current (Rated VR, Square Wave, 20KHz) at $T_c=135^\circ C$	$I_{FRM}$	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	0.5							A	
Maximum Instantaneous Forward Voltage (Note 2) IF=10A, TA=25°C IF=10A, TA=125°C IF=20A, TA=25°C IF=20A, TA=125°C	$V_F$	0.80	0.80		0.80	0.85		0.95		V	
		0.57	0.70		0.65	0.75		0.85			
		0.84	0.95		1.00	0.95		1.05			
		0.72	0.85		0.75	0.85		0.95			
Maximum Reverse Current @ Rated VR $T_A=25^\circ C$ $T_A=125^\circ C$	$I_R$	0.1									mA
		15	10	30	5	2					
Voltage Rate of Change (Rated $V_R$ )	dV/dt	10000									V/us
Typical Junction Capacitance	$C_j$	400	310							pF	
RMS Isolation Voltage (MBRF Type Only) from Terminals to Heatsink with $t=1.0$ Second, $RH \leq 30\%$	$V_{ISO}$	4500(Note 3)									V
		3500(Note 4)									
		1500(Note 5)									
Typical Thermal Resistance Per Leg	$R_{\theta JC}$	1.5				3.5				°C/W	
Operating Temperature Range	$T_J$	- 65 to + 150									°C
Storage Temperature Range	$T_{STG}$	- 65 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  $\leq 4.9mm(0.19")$

### RATINGS AND CHARACTERISTIC CURVES (MBRF2035CT THRU MBRF20200CT)

FIG. 1 FORWARD CURRENT DERATING CURVE

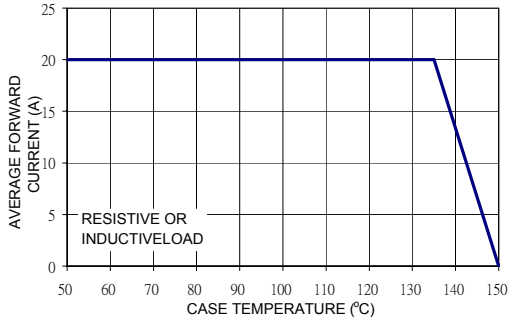


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

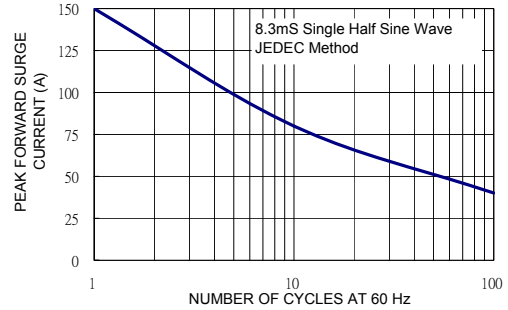


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

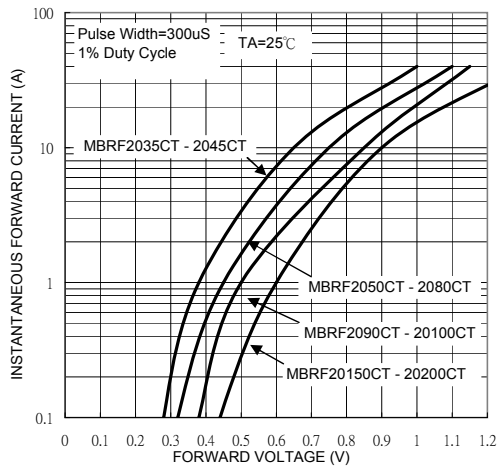


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

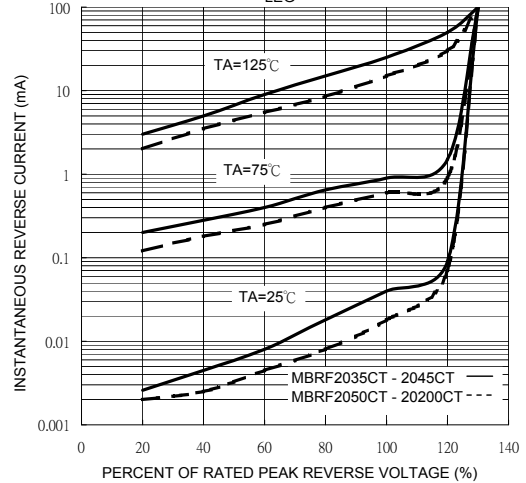


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

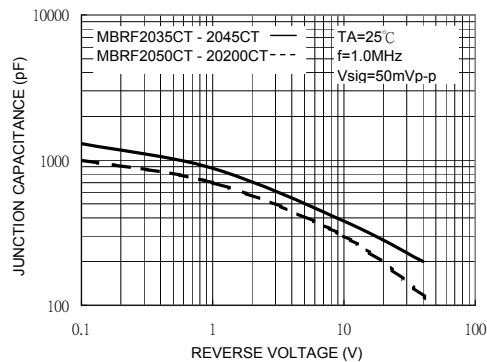


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

