

MBR30100CT

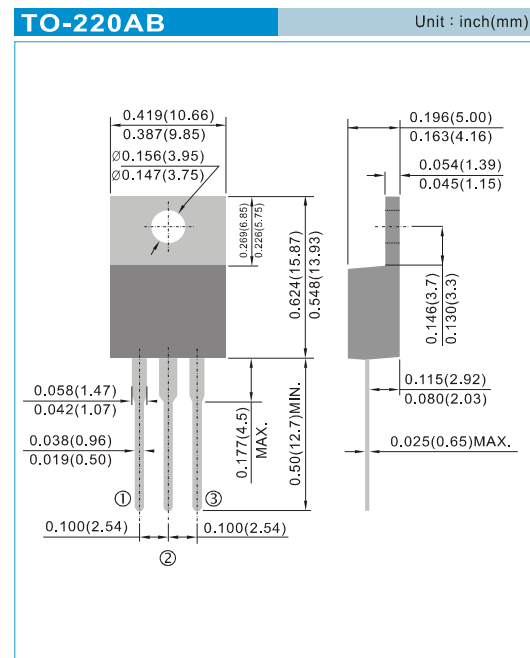
30 AMPERES SCHOTTKY BARRIER RECTIFIERS

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°C/10 seconds, 0.25", (6.35mm) from case
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

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: 1.90 grams



Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbol	MBR30100CT	Units
Maximum Recurrent 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	$I_{F(AV)}$	30	A
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20KHz)	I_{FRM}	30	A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	200	A
Peak Repetitive Reverse Surge Current(Note1)	I_{RRM}	0.5	A
Maximum Instantaneous Forward Voltage at (Note 2) IF=30A, $T_A=125^\circ\text{C}$	V_F	0.82	V
Maximum Instantaneous Reverse Current @ $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage Per Leg @ $T_A=125^\circ\text{C}$	I_R	0.2 7.5	mA mA
Voltage Rate of Change,(Rated V_R)	dV/dt	10,000	V/us
Typical Junction Capacitance @4V 1.0MHz	C_j	320	pF
Maximum Thermal Resistance Per Leg	$R_{\theta JC}$	1.5	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	- 65 to + 150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	- 65 to + 175	$^\circ\text{C}$

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

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

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FIG. 1- FORWARD CURRENT DERATING CURVE

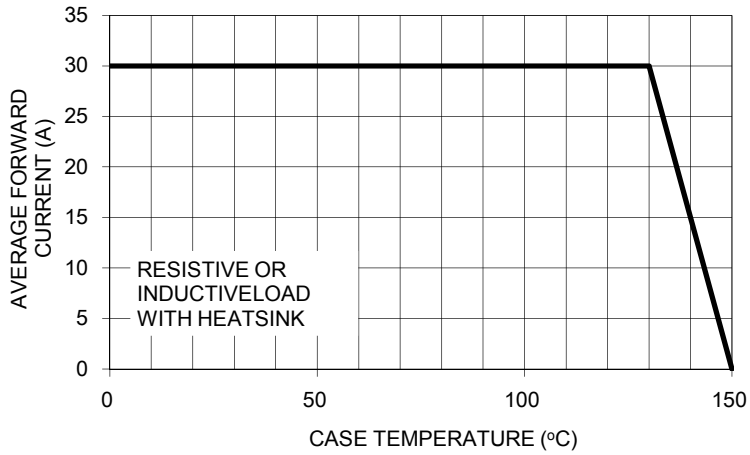


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

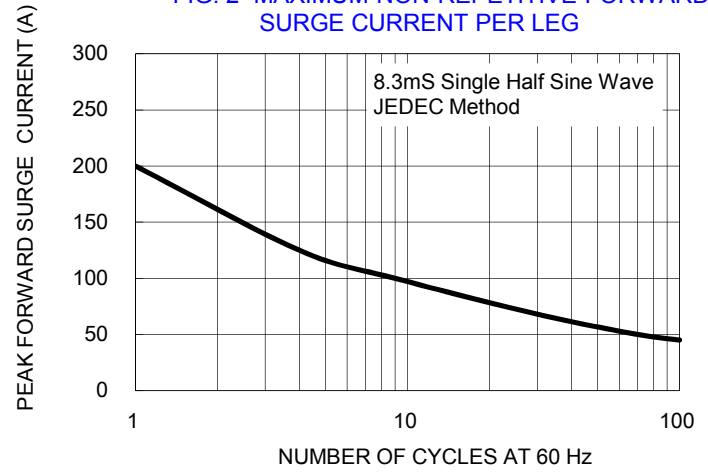


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

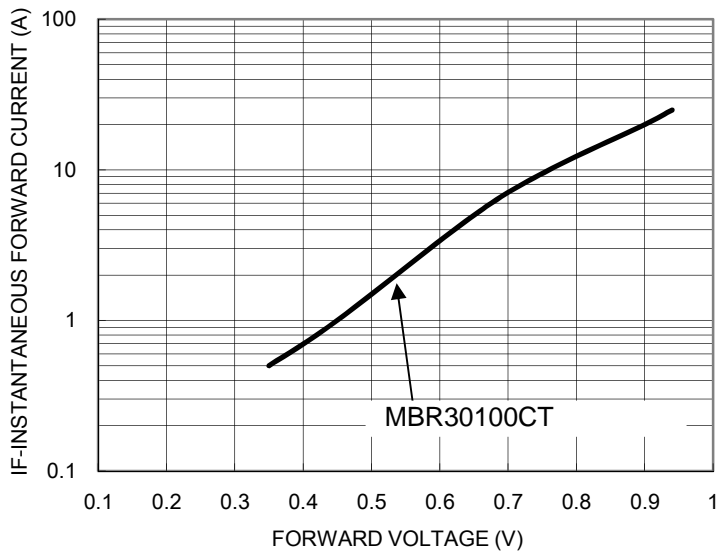


FIG. 4- TYPICAL REVERSE CHARACTERISTICS PER LEG

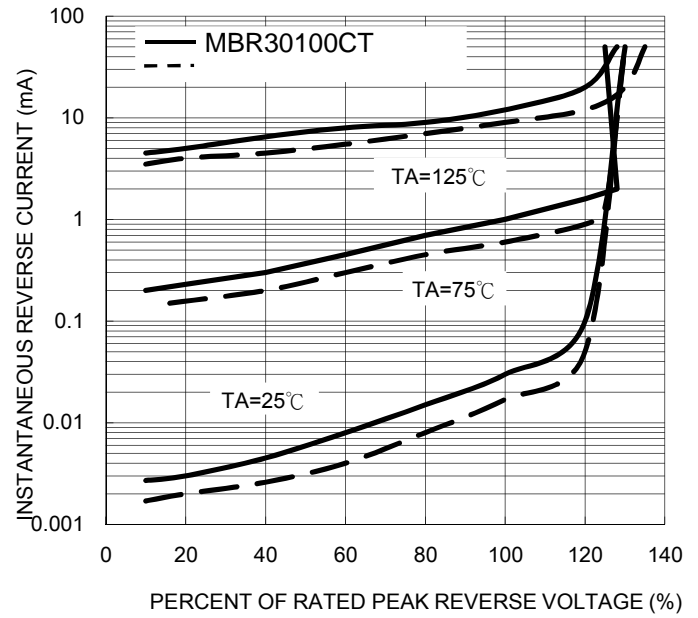


FIG. 5- TYPICAL JUNCTION CAPACITANCE PER LEG

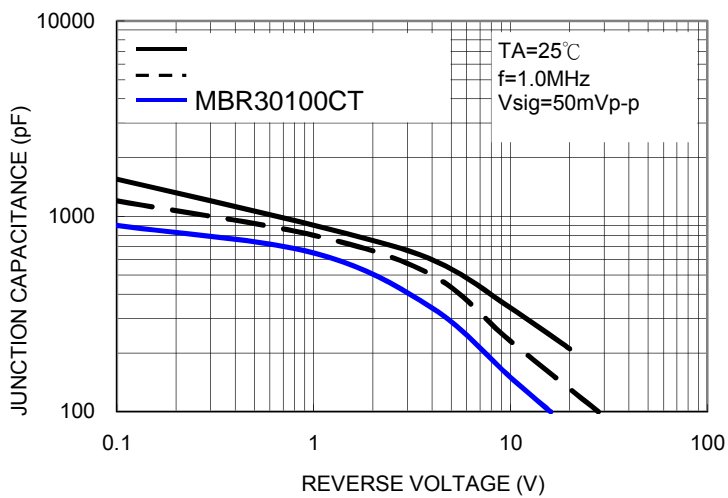


FIG. 6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

