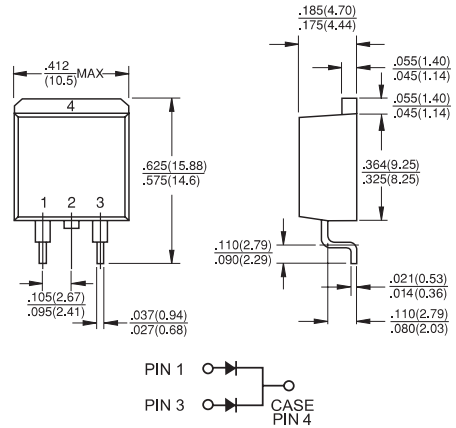


# MBRS2035CT - MBR20150CT

## 20.0 AMPS. Surface Mount Schottky Barrier Rectifiers

### D<sup>2</sup>PAK



## Features

- ✦ For surface mounted application
- ✦ Plastic material used carries Underwriters Laboratory Classifications 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
- ✦ Guardring for overvoltage protection
- ✦ High temperature soldering guaranteed: 260°C/10 seconds at terminals

## Mechanical Data

- ✦ Cases: JEDEC D<sup>2</sup>PAK 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: 0.06 ounce, 1.70 grams

Dimensions in inches and (millimeters)

## 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	MBRS 2035 CT	MBRS 2045 CT	MBRS 2050 CT	MBRS 2060 CT	MBRS 2090 CT	MBRS 20100 CT	MBRS 20150 CT	Units					
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	90	100	150	V					
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	63	70	105	V					
Maximum DC Blocking Voltage	$V_{DC}$	35	45	50	60	90	100	150	V					
Maximum Average Forward Rectified Current at $T_C=135^\circ\text{C}$	$I_{(AV)}$	20							A					
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_C=135^\circ\text{C}$	$I_{FRM}$	20.0							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) $I_F=10\text{A}, T_C=25^\circ\text{C}$ $I_F=10\text{A}, T_C=125^\circ\text{C}$ $I_F=20\text{A}, T_C=25^\circ\text{C}$ $I_F=20\text{A}, T_C=125^\circ\text{C}$	$V_F$	-	0.57	0.84	0.72	0.80	0.70	0.95	0.85	0.99	0.87	1.23	1.10	V
Maximum Instantaneous Reverse Current @ $T_C=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_C=125^\circ\text{C}$	$I_R$	0.1	15	0.1	10	1.0	5.0	mA						
Voltage Rate of Change, (Rated $V_R$ )	$dV/dt$	10,000							V/ $\mu\text{s}$					
Typical Thermal Resistance Per Leg (Note 3)	$R_{\theta JC}$	1.5				2.0				$^\circ\text{C}/\text{W}$				
Operating Junction Temperature Range	$T_J$	-65 to +150							$^\circ\text{C}$					
Storage Temperature Range	$T_{STG}$	-65 to +175							$^\circ\text{C}$					

- Notes:
1. 2.0us Pulse Width,  $f=1.0\text{ KHz}$
  2. Pulse Test: 300us Pulse Width, 1% Duty Cycle
  3. Thermal Resistance from Junction to Case Per Leg, with Heatsink Size (4"x6"x0.25") Al-Plate.

## RATINGS AND CHARACTERISTIC CURVES (MBRS2035CT THRU MBRS20150CT)

FIG.1- FORWARD CURRENT DERATING CURVE

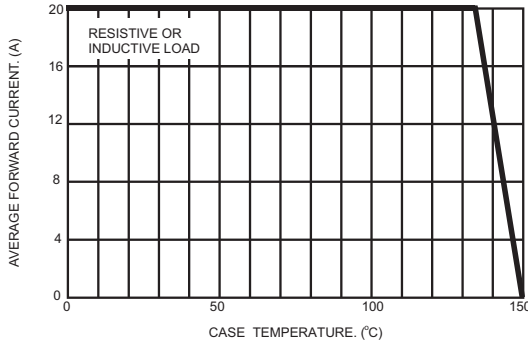


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

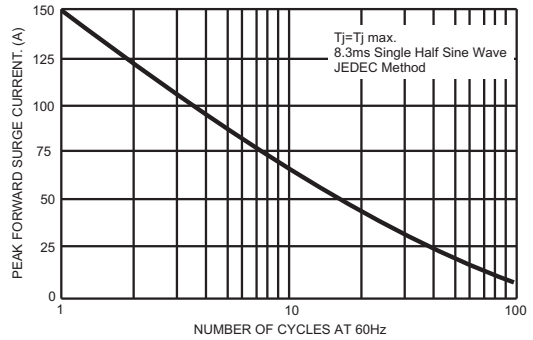


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

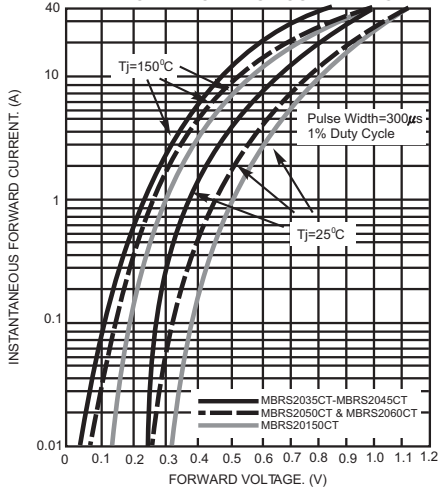


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

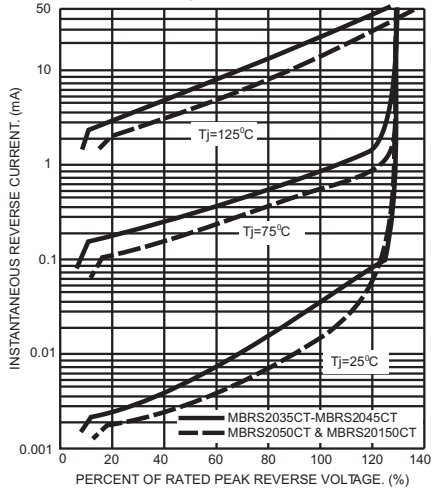


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

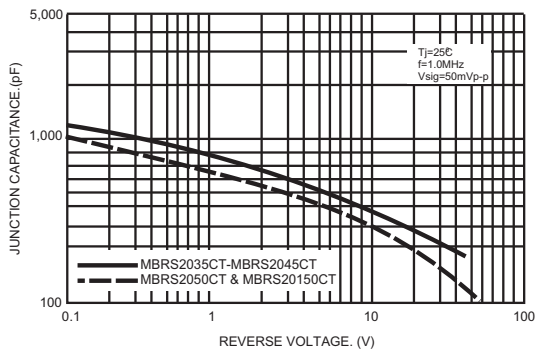


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

