

**SCHOTTKY BARRIER RECTIFIER**

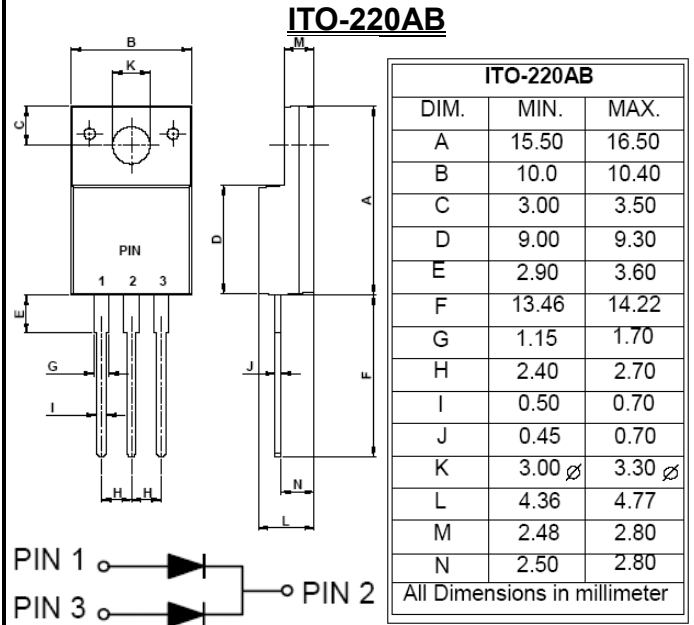
**REVERSE VOLTAGE – 100Volts**  
**FORWARD CURRENT – 30 Amperes**

**FEATURES**

- Metal of silicon rectifier, majority carrier conduction
- Low forward voltage drop
- High efficiency
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

**MECHANICAL DATA**

- Case Material: Plastic material, UL flammability classification 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Lead Free Plating
- Polarity indicator: As marked on the body
- Weight: 0.06 ounces, 1.70 grams
- Component in accordance to RoHs 2002/95/EC
- ESD capability : HBM\_8KV (JESD22-A114)
- Maximum mounting torque = 0.5 N.m (5.1 Kgf.cm)



**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25°C ambient temperature unless otherwise specified.

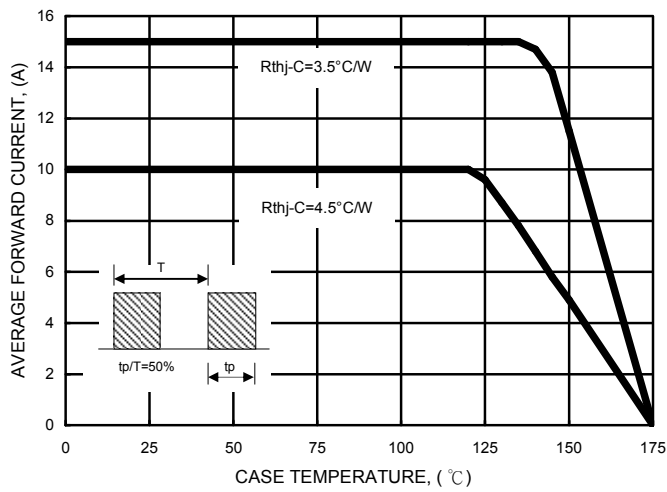
PARAMETER			SYMBOL	MBRF30100CT			UNIT
Device marking code			Note	MBRF30100CT			---
Maximum Repetitive Peak Reverse Voltage			V <sub>RRM</sub>	100			V
Average Rectified Output Current @ δ =0.5 (FIG.1_per diode)			I <sub>F</sub>	30			A
Peak Forward Surge Current 8.3ms single half sine-wave			I <sub>FSM</sub>	250			A
Storage temperature range			T <sub>STG</sub>	-55 to +175			°C
Operating junction temperature range			T <sub>J</sub>	-55 to +175			°C
PARAMETER	TEST CONDITIONS		SYMBOL	Min.	Typ.	Max.	UNIT
Breakdown voltage	IR=0.1mA	Tj=25°C	V <sub>B</sub>	100	---	---	V
Forward Voltage (1)	IF=15A	Tj=25°C Tj=125°C	V <sub>F</sub>	---	0.75 0.62	0.80 0.67	V
	IF=30A	Tj=25°C		---	---	0.93	
Leakage Current	VR=100V	Tj=25°C Tj=125°C	I <sub>R</sub>	---	0.001 0.5	0.1 10	mA
THERMAL CHARACTERISTIC			SYMBOL	Typical			UNIT
Typical thermal resistance_Junction to Case (2)			R <sub>θJC</sub>	3.5			°C/W
Typical thermal resistance_Junction to Lead (2)			R <sub>θJL</sub>	3.5			°C/W

Note :

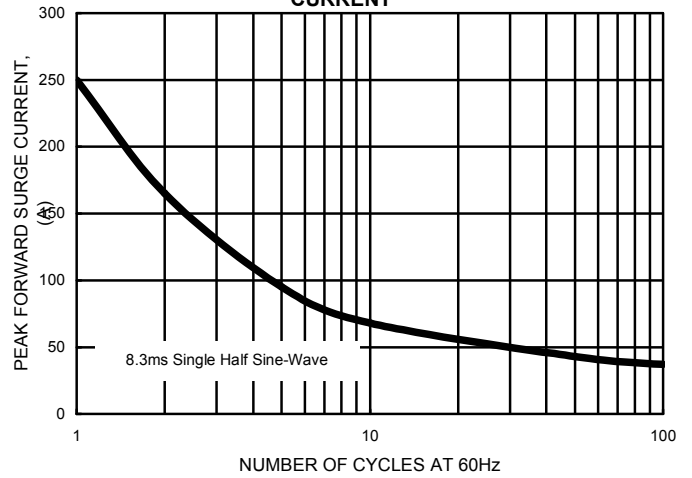
- (1) 300us Pulse Width, 2% Duty Cycle.
- (2) Thermal Resistance test performed in accordance with JESD-51.  $R_{\theta JL}$  is measured at the PIN 2,  $R_{\theta JC}$  is measured at the top centre of body.

**REV. 3. Oct-2010, KTHC59**

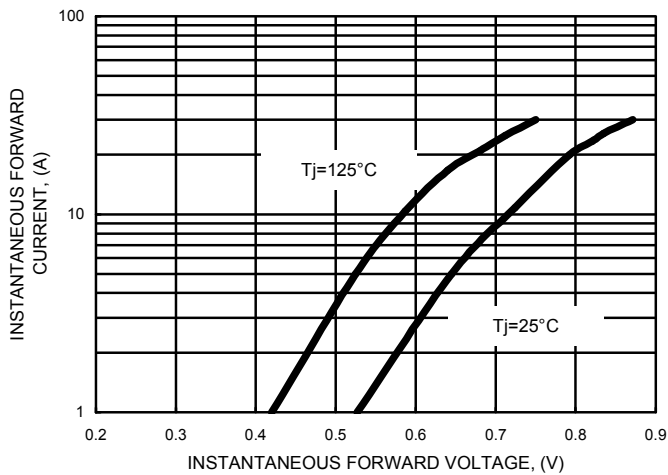
**FIG.1- FORWARD CURRENT DERATING CURVE**



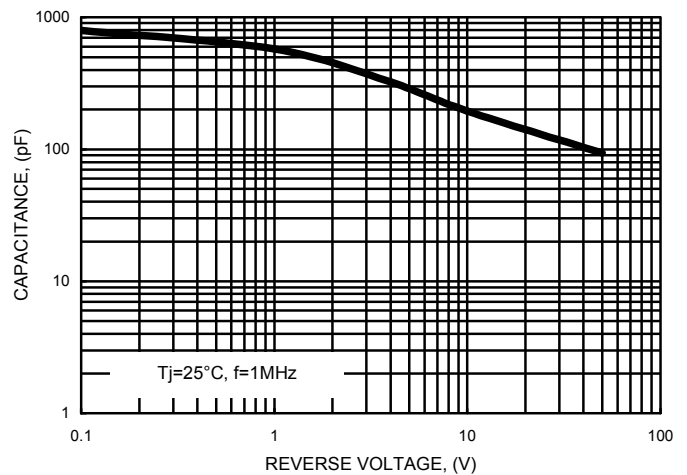
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



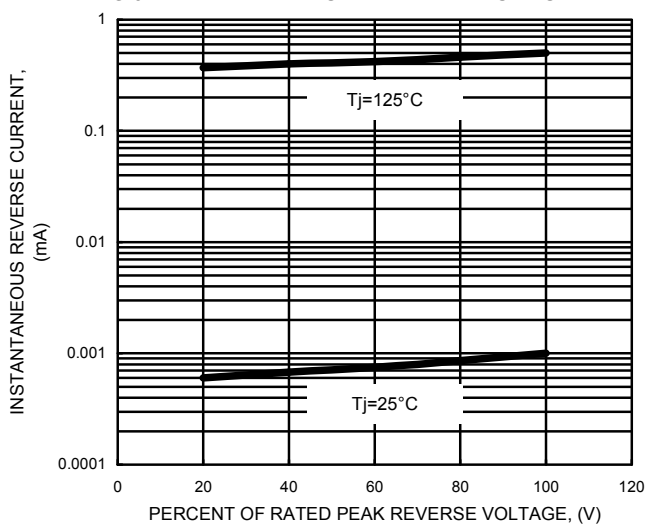
**FIG.3- TYPICAL FORWARD CHARACTERISTICS**



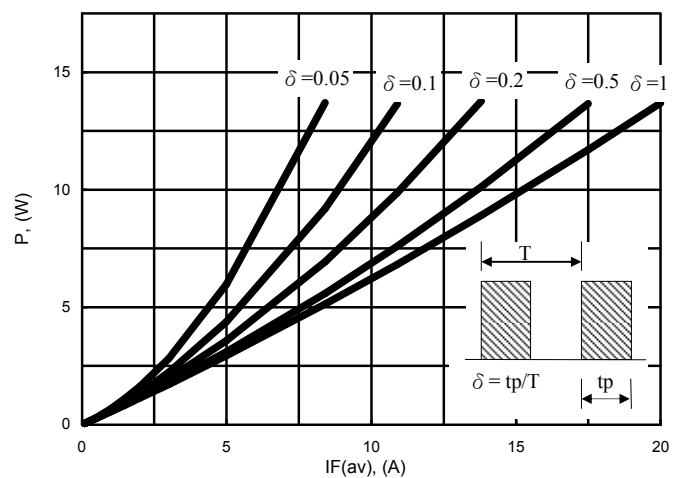
**FIG.4- TYPICAL JUNCTION CAPACITANCE**



**FIG.5- TYPICAL REVERSE CHARACTERISTICS**



**FIG.6- Conduction losses vs. average current**



Equation use for evaluate the maximum conduction losses :

$$P = 0.557 * I_{F(av)} + 0.0064 * I_{F(RMS)}^2$$

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