



# MBR2045C

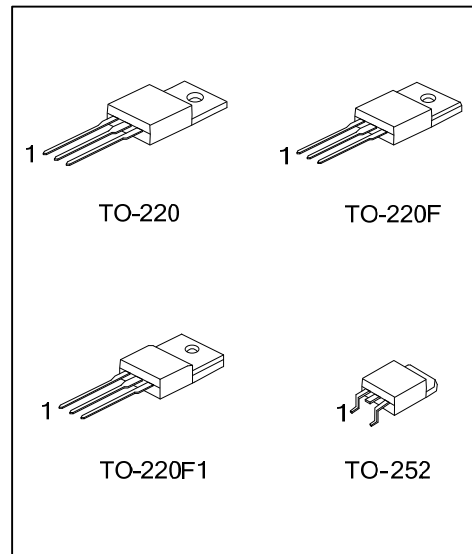
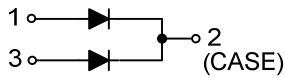
**DIODE**

## SCHOTTKY BARRIER RECTIFIER DIODES

■ **FEATURES**

- \* Guard Ring for Transient Protection
- \* Low Power Loss, High Efficiency
- \* High Surge Capability
- \* High Current Capability and Low Forward Voltage Drop

■ **SYMBOL**



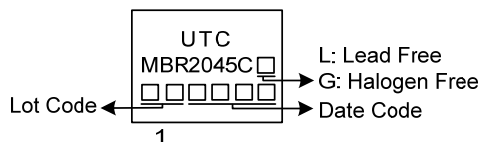
■ **ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MBR2045CL-TA3-T	MBR2045CG-TA3-T	TO-220	A	K	A	Tube
MBR2045CL-TF3-T	MBR2045CG-TF3-T	TO-220F	A	K	A	Tube
MBR2045CL-TF1-T	MBR2045CG-TF1-T	TO-220F1	A	K	A	Tube
MBR2045CL-TN3-R	MBR2045CG-TN3-R	TO-252	A	K	A	Tape Reel

Note: Pin Assignment: A: Anode K: Cathode

<p>MBR2045CG-TA3-T</p>	<p>(1) T: Tube                  (2) TA3: TO-220, TF1: TO-220F1, TF3: TO-220F, TN3: TO-252                  (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ **MARKING**



■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
DC Blocking Voltage		V <sub>R</sub>	45	V
Peak Repetitive Reverse Voltage		V <sub>RRM</sub>	45	V
Working Peak Reverse Voltage		V <sub>RWM</sub>	45	V
Maximum PMS Reverse Voltage		V <sub>R(RMS)</sub>	31.5	V
Average Rectified Forward Current (Rated V <sub>R</sub> ) T <sub>C</sub> =125°C (Note 1)	Per Leg	I <sub>O</sub>	10	A
	Total		20	A
Peak Repetitive Forward Current (Rated V <sub>R</sub> , Square Wave, 20 kHz) (T <sub>C</sub> =125°C)		I <sub>FRM</sub>	10	A
Non-Repetitive Peak Surge Current (Surge Applied At Rated Load Conditions Half Wave, Single Phase, 60Hz)		I <sub>FSM</sub>	150	A
Voltage Rate of Change (Rated V <sub>R</sub> )		dv/dt	10000	V/μs
Typical Junction Capacitance (Note 3)		C <sub>J</sub>	650	pF
Operating Junction Temperature (Note 3)		T <sub>J</sub>	-65 ~ +150	°C
Storage Temperature		T <sub>STG</sub>	-65 ~ +150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. The heat generated must be less than the thermal conductivity from Junction-to-Ambient:  $dP_D/dT_J < 1/\theta_{JA}$ .

3. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

■ THERMAL DATA (PER LEG)

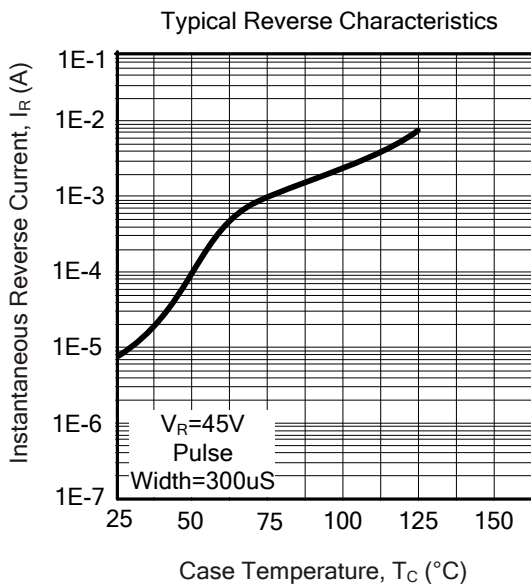
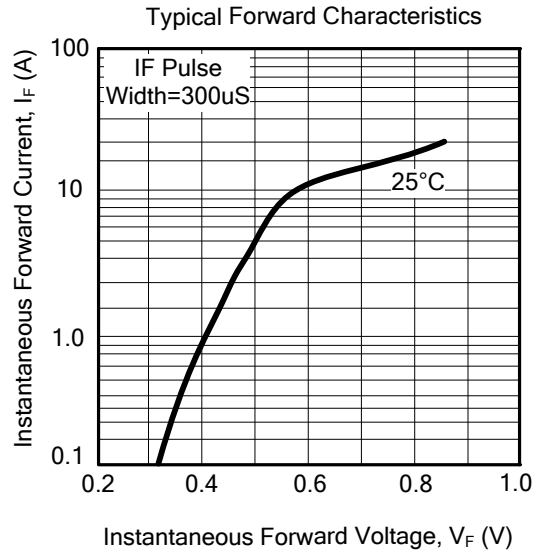
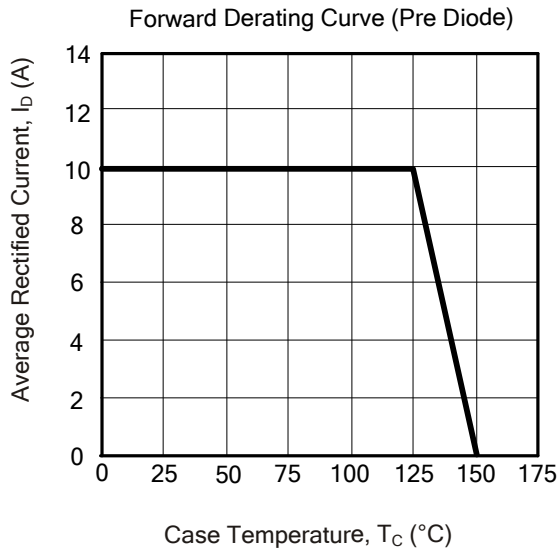
PARAMETER		SYMBOL	RATINGS	UNIT
Typical Thermal Resistance	TO-220	θ <sub>JC</sub>	2	°C/W
	TO-220F/TO-220F1		4	°C/W
	TO-252		6	°C/W

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Instantaneous Forward Voltage Drop	V <sub>FM</sub>	I <sub>F</sub> =10A, T <sub>C</sub> =25°C			0.70	V
		I <sub>F</sub> =10A, T <sub>C</sub> =125°C			0.57	
		I <sub>F</sub> =20A, T <sub>C</sub> =25°C			0.84	V
		I <sub>F</sub> =20A, T <sub>C</sub> =125°C			0.72	
Instantaneous Reverse Current	I <sub>RM</sub>	Rated DC Voltage, T <sub>C</sub> =25°C			0.1	mA
		Rated DC Voltage, T <sub>C</sub> =125°C			15	

Note: Pulse Test: Pulse Width = 300μs, Duty Cycle ≤ 2.0 %.

## TYPICAL CHARACTERISTICS



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