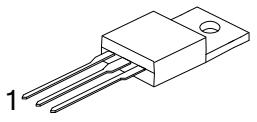
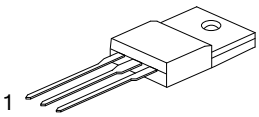
MBR1045C **Preliminary** ***DIODE***

10A SCHOTTKY BARRIER RECTIFIER



TO-220



TO-220F1

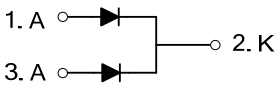
■ DESCRIPTION

The UTC **MBR1045C** is a Schottky Barrier Rectifier with high efficiency, low power dissipation and high current capacity. It can be applied in high frequency, low voltage inverters, polarity protection and free wheeling applications.

■ FEATURES

* High surge capability
* High efficiency, low power dissipation, high current capability, low forward voltage drop
* Guardring for overvoltage protection

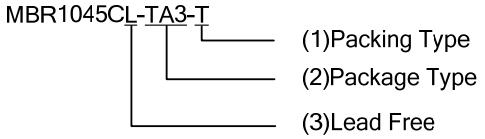
■ SYMBOL



■ ORDERING INFORMATION

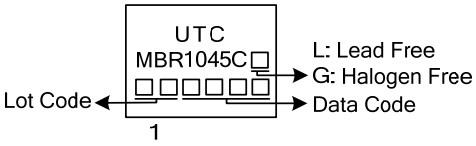
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MBR1045CL-TA3-T	MBR1045CG-TA3-T	TO-220	A	K	A	Tube
MBR1045CL-TF1-T	MBR1045CG-TF1-T	TO-220F1	A	K	A	Tube

Note: Pin Assignment: A: Anode K: Cathode



(1) T: Tube
(2) TA3: TO-220, TF1: TO-220F1
(3) L: Lead Free, G: Halogen Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

PARAMETER		SYMBOL	RATINGS	UNIT
DC Blocking Voltage		V_{RM}	45	V
Working Peak Reverse Voltage		V_{RWM}	45	V
Peak Repetitive Reverse Voltage		V_{RRM}	45	V
RMS Reverse Voltage		$V_{R(RMS)}$	31.5	V
Average Rectified Output Current (T_C=105°C)	Per Leg	I_O	5	A
	Total		10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load		I_{FSM}	100	A
Repetitive Peak Avalanche Power (1μs, 25°C)		P_{ARM}	5000	W
Operating Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55~+150	°C

Note: 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. Thermal resistance junction to case mounted on heatsink.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient		θ_{JA}	60	°C/W
Junction to Case	TO-220	θ_{JC}	2	°C/W
	TO-220F1		4	°C/W

■ ELECTRICAL CHARACTERISTICS (Per Leg) (T_A=25°C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	I_R=0.45mA	45			V
Forward Voltage Drop	V_{FM}	I_F=5A, T_J=25°C			0.65	V
		I_F=5A, T_J=125°C			0.55	V
Leakage Current (Note 1)	I_{RM}	V_R=45V, T_J=25°C			100	μA
		V_R=45V, T_J=125°C			15	mA
Typical Junction Capacitance (Note 3)	C_J				150	pF

Notes: 1. Short duration pulse test used to minimize self-heating effect.
2. Thermal resistance junction to case mounted on heatsink.
3. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.