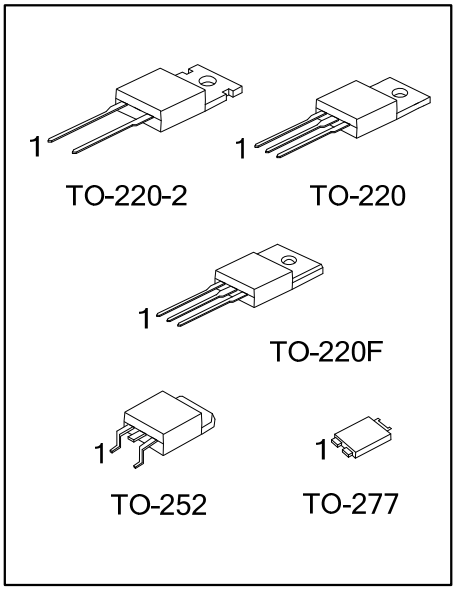
MGBR10V45

DIODE

MOS GATED BARRIER RECTIFIER



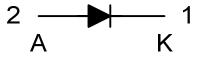
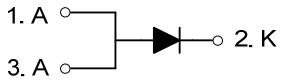
■ DESCRIPTION

The UTC **MGBR10V45** is a surface mount mos gated barrier rectifier, it uses UTC's advanced technology to provide customers with low forward voltage drop and high switching speed, etc.

■ FEATURES

* Very low forward voltage drop
* High switching speed

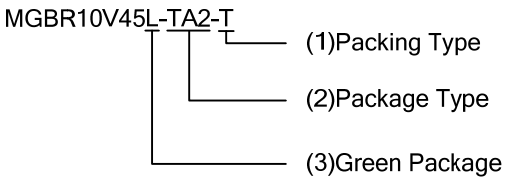
■ SYMBOL

TO-220-2	TO-220 / TO-220F TO-252 / TO-277
	

■ ORDERING INFORMATION

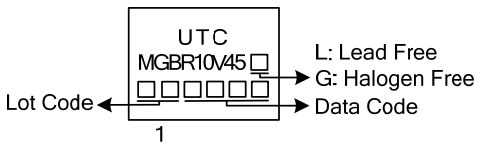
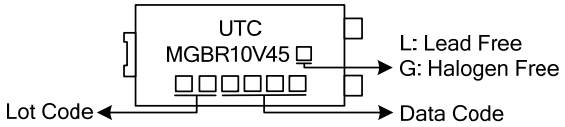
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MGBR10V45L-TA2-T	MGBR10V45G-TA2-T	TO-220-2	K	A	-	Tube
MGBR10V45L-TA3-T	MGBR10V45G-TA3-T	TO-220	A	K	A	Tape Reel
MGBR10V45L-TF3-T	MGBR10V45G-TF3-T	TO-220F	A	K	A	Tape Reel
MGBR10V45L-TN3-R	MGBR10V45G-TN3-R	TO-252	A	K	A	Tape Reel
MGBR10V45L-T27-R	MGBR10V45G-T27-R	TO-277	A	K	A	Tape Reel

Note: Pin Assignment: A: Anode K: Common Cathode



(1) T: Tube, R: Tape Reel
(2) TA2: TO-220-2, TA3: TO-220, TF3: TO-220F, TN3: TO-252, T27: TO-277
(3) L: Lead Free, G: Halogen Free and Lead Free

■ MARKING

TO-220-2 / TO-220 / TO-220F / TO252	TO-277
	

■ 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		$V_{R(RMS)}$	32	V
Average Rectified Output Current	T_C=140°C	I_O	10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load		I_{FSM}	150	A
Operating Junction Temperature		T_J	-65~+150	°C
Storage Temperature		T_{STG}	-65~+150	°C

Note: 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.

■ THERMAL CHARACTERISTICS

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-220-2/TO-220 TO-220F	θ_{JA}	60	°C/W
	TO-252		110	
	TO-277		73 (Note 3)	
Junction to Case	TO-220-2/TO-220	θ_{JC}	2	°C/W
	TO-220F		3.31	
	TO-252		2.5	
	TO-277		13 (Note 3)	

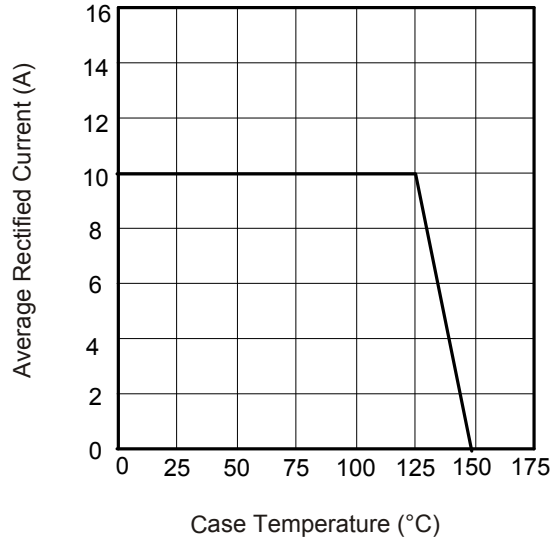
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	I_R=0.5mA	45			V
Instantaneous Forward Voltage	V_{FM}	I_F=10A, T_J=25°C			0.53	V
		I_F=10A, T_J=125°C			0.48	V
Leakage Current (Note 1)	I_{RM}	V_R=45V, T_J=25°C		50	500	μA
		V_R=45V, T_J=125°C		12	40	mA
Total Capacitance	C_T	V_R=5V, f=1MHz, T_J=25°C		400		pF

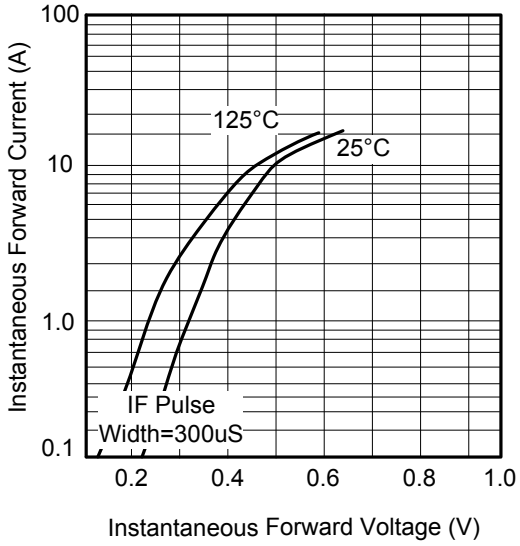
Notes: 1. Short duration pulse test used to minimize self-heating effect.
2. Thermal resistance junction to case mounted on heatsink.
3. Mounted on an FR4 PCB, single-sided copper, with 100cm^2 copper pad area.

■ TYPICAL CHARACTERISTICS

Forward Derating Curve



Typical Forward Characteristics



Typical Reverse Characteristics