



## MGBR10V45

DIODE

### MOS GATED BARRIER RECTIFIER

#### DESCRIPTION

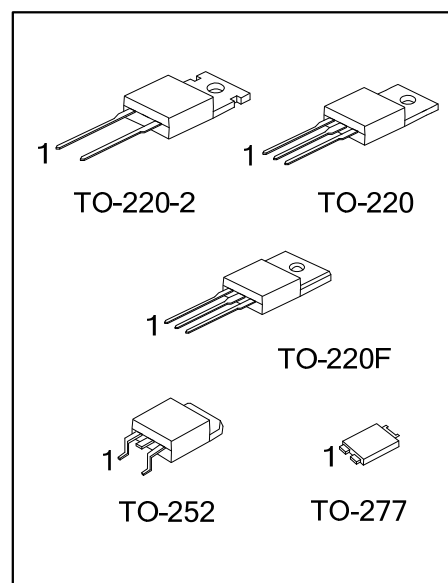
The UTC **MGBR10V45** is a surface mount mos gated barrier rectifier, it uses UTC's advanced technology to provide customers with low forward voltage drop and high switching speed, etc.

#### 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
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#### MARKING

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

# ■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ , 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 $T_C=140^{\circ}\text{C}$	$I_O$	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	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-65~+150	$^{\circ}\text{C}$

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	$\theta_{JA}$	60	$^{\circ}\text{C/W}$
		110	
		73 (Note 3)	
Junction to Case	$\theta_{JC}$	2	$^{\circ}\text{C/W}$
		3.31	
		2.5	
		13 (Note 3)	

# ■ ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified.)

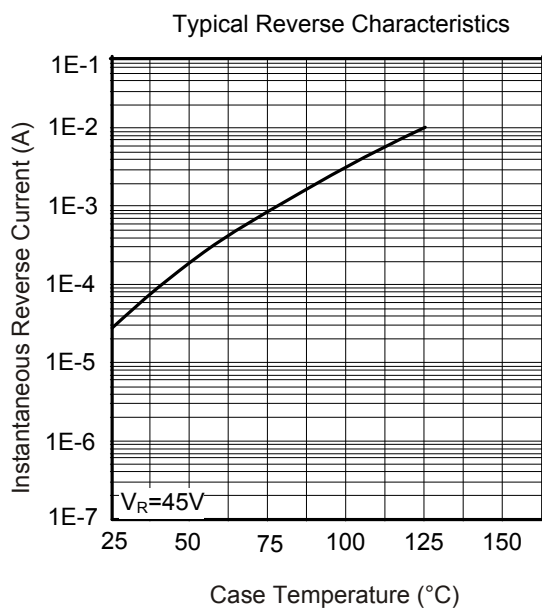
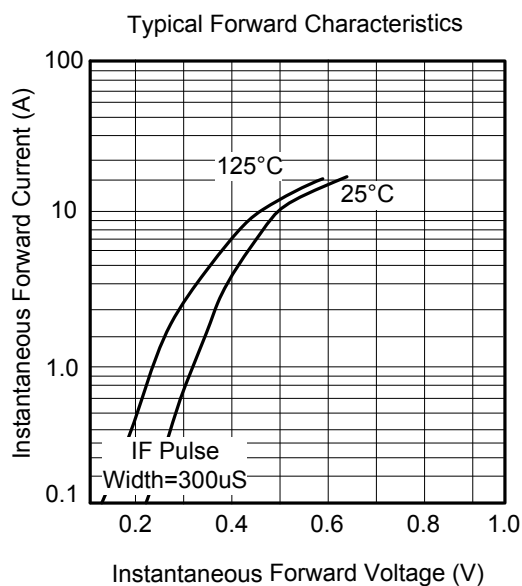
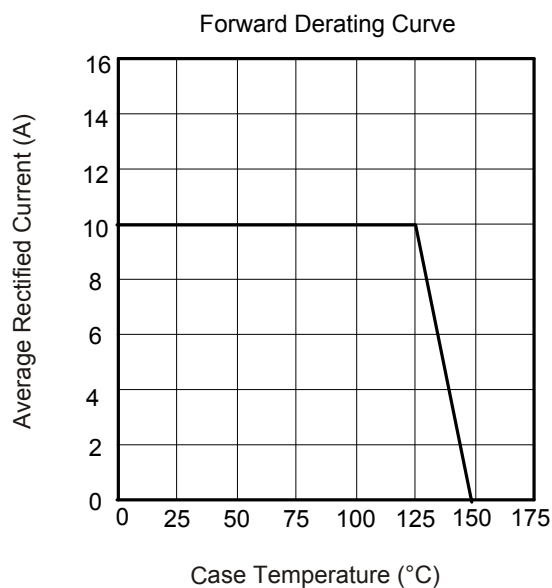
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	$I_R=0.5\text{mA}$	45			V
Instantaneous Forward Voltage	$V_{FM}$	$I_F=10\text{A}$ , $T_J=25^{\circ}\text{C}$			0.53	V
		$I_F=10\text{A}$ , $T_J=125^{\circ}\text{C}$			0.48	V
Leakage Current (Note 1)	$I_{RM}$	$V_R=45\text{V}$ , $T_J=25^{\circ}\text{C}$		50	500	$\mu\text{A}$
		$V_R=45\text{V}$ , $T_J=125^{\circ}\text{C}$		12	40	mA
Total Capacitance	$C_T$	$V_R=5\text{V}$ , $f=1\text{MHz}$ , $T_J=25^{\circ}\text{C}$		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<sup>2</sup> copper pad area.

## ■ TYPICAL CHARACTERISTICS



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