



## MGBR12L40

Preliminary

DIODE

### MOS GATED BARRIER RECTIFIER

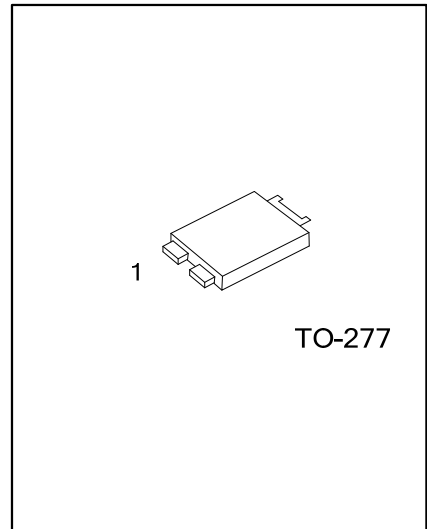
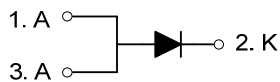
#### DESCRIPTION

The UTC **MGBR12L40** 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

- \* Low forward voltage drop
- \* High switching speed

#### SYMBOL



#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MGBR12L40L-T27-R	MGBR12L40G-T27-R	TO-277	A	K	A	Tape Reel

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

<p>MGBR12L40L-T27-R</p>	<p>(1) R: Tape Reel</p> <p>(2) T27: TO-227</p> <p>(3) L: Lead Free, G: Halogen Free</p>
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#### MARKING INFORMATION

PACKAGE	MARKING
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	$V_{RM}$	40	V
Working Peak Reverse Voltage	$V_{RWM}$	40	V
Peak Repetitive Reverse Voltage	$V_{RRM}$	40	V
Average Rectified Output Current	$I_O$	12	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	180	A
Repetitive Peak Avalanche Power (1 $\mu$ s, 25 $^{\circ}$ C)	$P_{ARM}$	5000	W
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 (Note 3)

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	73	$^{\circ}\text{C}/\text{W}$
Junction to Case	$\theta_{JC}$	13	$^{\circ}\text{C}/\text{W}$

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	$I_R=0.5\text{mA}$	40			V
Forward Voltage Drop	$V_{FM}$	$I_F=12\text{A}, T_J=25^{\circ}\text{C}$			0.57	V
		$I_F=12\text{A}, T_J=125^{\circ}\text{C}$			0.52	V
Leakage Current (Note 1)	$I_{RM}$	$V_R=40\text{V}, T_J=25^{\circ}\text{C}$		80	300	$\mu\text{A}$
		$V_R=40\text{V}, T_J=125^{\circ}\text{C}$		12	40	mA

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.

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