



**MGBR20L50**

Preliminary

**DIODE**

**MOS GATED BARRIER  
RECTIFIER**

■ DESCRIPTION

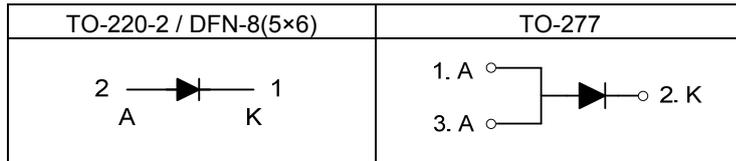
The UTC **MGBR20L50** is a surface mount mos gated barrier rectifier, it uses UTC's advanced technology to provide customers with low forward voltage drop and high switching speed etc.

The UTC **MGBR20L50** suitable for supply applications.

■ FEATURES

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

■ SYMBOL

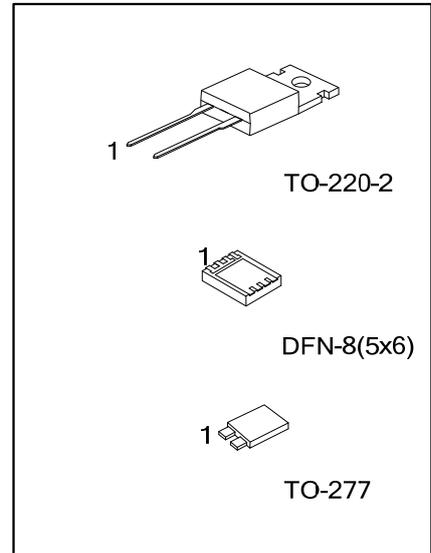


■ ORDERING INFORMATION

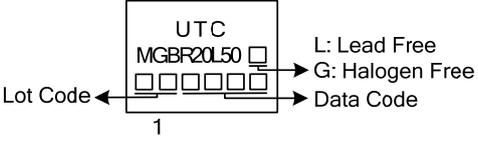
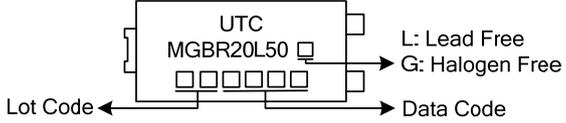
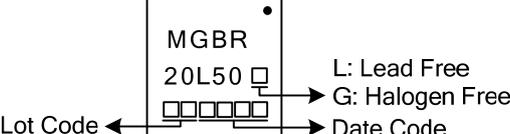
Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
MGBR20L50L-TA2-T	MGBR20L50G-TA2-T	TO-220-2	K	A	-	-	-	-	-	-	Tube
MGBR20L50L-T27-T	MGBR20L50G-T27-T	TO-277	A	K	A	-	-	-	-	-	Tape Reel
MGBR20L50L-K08-5060-R	MGBR20L50G-K08-5060-R	DFN-8(5x6)	A	A	A	NC	K	K	K	K	Tape Reel

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

<p>MGBR20L50L-TA2-T</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Free</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) TA2: TO-220-2, K08-5060: DFN-8(5x6)</p> <p>(3) L: Lead Free, G: Halogen Free</p>
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### MARKING INFORMATION

PACKAGE	MARKING
TO-220-2	 <p>Diagram showing a TO-220-2 package with markings: UTC, MGBR20L50, Lot Code (left), Data Code (right), L: Lead Free, and G: Halogen Free. A '1' is shown below the package.</p>
TO-277	 <p>Diagram showing a TO-277 package with markings: UTC, MGBR20L50, Lot Code (left), Data Code (right), L: Lead Free, and G: Halogen Free.</p>
DFN-8(5x6)	 <p>Diagram showing a DFN-8(5x6) package with markings: MGBR, 20L50, Lot Code (left), Data Code (right), L: Lead Free, and G: Halogen Free.</p>

■ 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	$V_{RM}$	50	V
Working Peak Reverse Voltage	$V_{RWM}$	50	V
Peak Repetitive Reverse Voltage	$V_{RRM}$	50	V
Average Rectified Forward Current (Rated VR-20Khz Square Wave) - 50% Duty Cycle	$I_O$	20	A
Peak Forward Surge Current - 1/2 60hz	$I_{FSM}$	250	A
Peak Repetitive Reverse Surge Current (2uS-1Khz)	$I_{RRM}$	2	A
Maximum Rate of Voltage Change ( at Rated $V_R$ )	dv/dt	10000	V/ $\mu$ S
Operating Junction Temperature	$T_J$	-65~+150	$^{\circ}\text{C}$
Storage Junction 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 DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-220-2	60	$^{\circ}\text{C}/\text{W}$
	TO-277	73 (Note 3)	
	DFN-8(5x6)	72	

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	$I_R=0.50\text{mA}$	50			V
Forward Voltage	$V_{FM}$	$I_F=20\text{A}, T_J=25^{\circ}\text{C}$			0.63	V
		$I_F=20\text{A}, T_J=125^{\circ}\text{C}$			0.58	V
Reverse Current (Note 1)	$I_{RM}$	$V_R=50\text{V}, T_J=25^{\circ}\text{C}$			300	$\mu\text{A}$
		$V_R=50\text{V}, T_J=125^{\circ}\text{C}$			100	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 100  $\text{cm}^2$  copper pad area.

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