



MGBR20S50

Preliminary

DIODE

MOS GATED BARRIER RECTIFIER

■ DESCRIPTION

The UTC **MGBR20S50** 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.

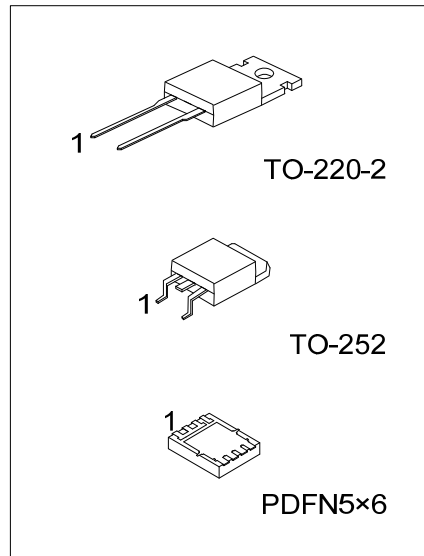
The UTC **MGBR20S50** suitable for supply applications.

■ FEATURES

- * Super low forward voltage drop
- * High switching speed

■ SYMBOL

TO-220-2	TO-252	PDFN5×6



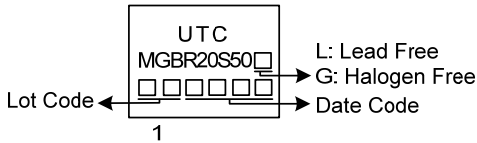
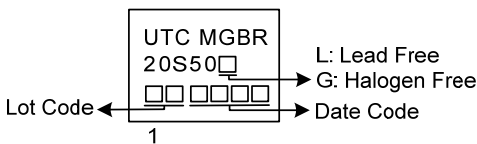
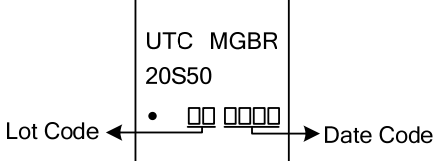
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing	
Lead Free	Halogen Free		1	2	3	4	5	6	7	8		
MGBR20S50L-TA2-T	MGBR20S50G-TA2-T	TO-220-2	K	A	-	-	-	-	-	-	-	Tube
MGBR20S50L-TN3-R	MGBR20S50G-TN3-R	TO-252	A	K	A	-	-	-	-	-	-	Tape Reel
MGBR20S50L-P5060-R	MGBR20S50G-P5060-R	PDFN5×6	A	A	A	NC	K	K	K	K	K	Tape Reel

Note: Pin Assignment: A: Anode K: Cathode

<p>MGBR20S50G-TA2-T</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) TA2: TO-220-2, TN3: TO-252, P5060: PDFN5×6</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING

PACKAGE	MARKING
TO-220-2	 <p>Marking diagram for TO-220-2 package. The marking area contains the text "UTC" and "MGBR20S50" followed by a small square. Below this is a row of five squares. An arrow labeled "Lot Code" points to the first square, and an arrow labeled "Date Code" points to the last square. A "1" is centered below the row of squares. To the right of the marking area, the text "L: Lead Free" and "G: Halogen Free" is present.</p>
TO-252	 <p>Marking diagram for TO-252 package. The marking area contains the text "UTC MGBR" and "20S50" followed by a small square. Below this is a row of five squares. An arrow labeled "Lot Code" points to the first square, and an arrow labeled "Date Code" points to the last square. A "1" is centered below the row of squares. To the right of the marking area, the text "L: Lead Free" and "G: Halogen Free" is present.</p>
PDFN5x6	 <p>Marking diagram for PDFN5x6 package. The marking area contains the text "UTC MGBR" and "20S50". Below this is a row of five squares. An arrow labeled "Lot Code" points to the first square, and an arrow labeled "Date Code" points to the last square. A "1" is centered below the row of squares.</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}	300	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/ μ 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-252	100	$^{\circ}\text{C}/\text{W}$
	PDFN5x6	72	$^{\circ}\text{C}/\text{W}$

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	$I_R=0.50\text{mA}$	50			V
Forward Voltage	V_{FM}	$I_F=20\text{A}, T_J=25^{\circ}\text{C}$			0.53	V
		$I_F=20\text{A}, T_J=125^{\circ}\text{C}$			0.48	V
Reverse Current (Note 1)	I_{RM}	$V_R=50\text{V}, T_J=25^{\circ}\text{C}$			500	μA
		$V_R=50\text{V}, T_J=125^{\circ}\text{C}$			100	mA

Notes: 1. Short duration pulse test used to minimize self-heating effect.

2. Thermal resistance junction to case mounted on heatsink.

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