UNISONIC TECHNOLOGIES CO., LTD

MGBR20V45C

DIODE

DUAL MOS GATED BARRIER RECTIFIERS
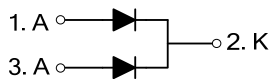

TO-220 TO-220F

TO-263 TO-252

■ **DESCRIPTION**

The UTC **MGBR20V45C** is a dual mos gated barrier rectifiers, it uses UTC's advanced technology to provide customers with high current capability, low forward voltage and high switching speed, etc.

■ **FEATURES**

* Very low forward voltage
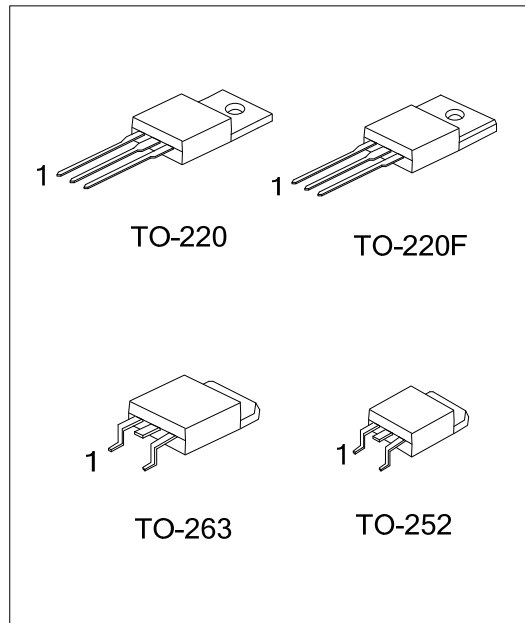* High switching speed
* High current capability

■ **SYMBOL**

1. A
3. A
2. K

■ **ORDERING**

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MGBR20V45CL-TA3-T	MGBR20V45CG-TA3-T	TO-220	A	K	A	Tube
MGBR20V45CL-TF3-T	MGBR20V45CG-TF3-T	TO-220F	A	K	A	Tube
MGBR20V45CL-TN3-R	MGBR20V45CG-TN3-R	TO-252	A	K	A	Tape Reel
MGBR20V45CL-TQ2-T	MGBR20V45CG-TQ2-T	TO-263	A	K	A	Tube
MGBR20V45CL-TQ2-R	MGBR20V45CG-TQ2-R	TO-263	A	K	A	Tape Reel

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

MGBR20V45CL-TA3-T

(1)Packing Type

(2)Package Type

(3)Green Package

(1) T: Tube, R: Tape Reel

(2) TA3: TO-220, TF3: TO-220F, TN3: TO-252
     TQ2: TO-263

(3) L: Lead Free, G: Halogen Free and Lead Free

■ **MARKING**

TO-220 / TO-220F	TO-252
UTC MGBR20V45C□ Lot Code L: Lead Free G: Halogen Free Data Code 1	UTC MGBR 20V45C□ Lot Code L: Lead Free G: Halogen Free Data Code 1

MGBR20V45C

■ **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
Average Rectified Forward Current (Rated VR-20KHz Square Wave) – 50% duty cycle	Per Leg	I_O	10	A
	Total		20	A
Peak Forward Surge Current - 1/2 60Hz		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.
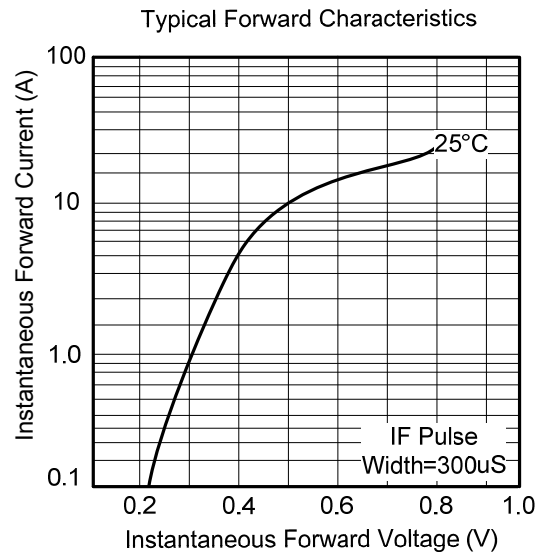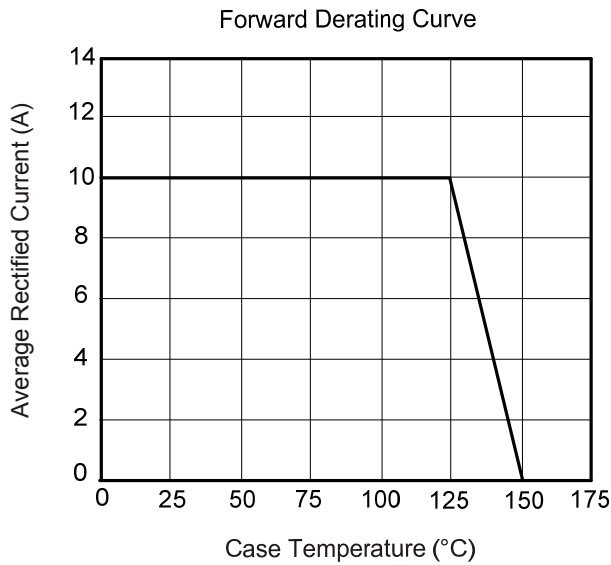
■ **THERMAL CHARACTERISTICS (PER LEG)**

PARAMETER		SYMBOL	RATINGS	UNIT
Typical Thermal Resistance	TO-220	θ_{JC}	2	°C/W
	TO-220F		4	°C/W
	TO-252		6	°C/W
	TO-263		3	°C/W

■ **ELECTRICAL CHARACTERISTICS (PER LEG)** (T_A =25°C unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reverse Breakdown Voltage	$V_{(BR)R}$	I_R=0.45mA	45			V
Instantaneous Forward Voltage	V_{FM}	I_F=10A, T_J=25°C			0.59	V
		I_F=10A, T_J=125°C			0.52	V
Leakage Current	I_{RM}	V_R=45V, T_J=25°C			500	µA
		V_R=45V, T_J=125°C			100	mA

Note: Pulse Test: Pulse width ≤ 300µs, Duty cycle ≤ 2%.

■ **TYPICAL CHARACTERISTICS**

Forward Derating Curve

Average Rectified Current (A)

Case Temperature (°C)

Typical Forward Characteristics

Instantaneous Forward Current (A)

25°C

IF Pulse
Width=300uS

Instantaneous Forward Voltage (V)