



## UUFR30120

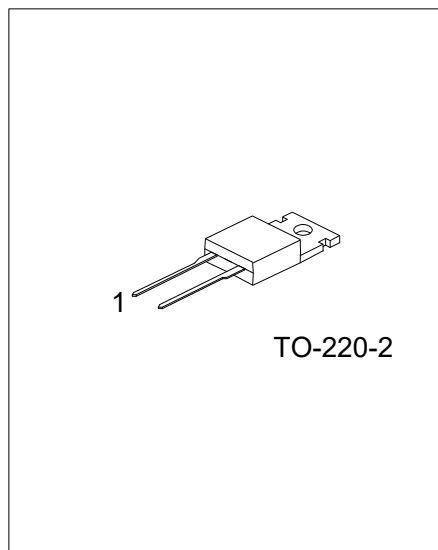
Preliminary

FAST RECOVERY EPITAXIAL DIODE

### ULTRAFAST RECOVERY RECTIFIER PLANAR FRED

#### DESCRIPTION

The UTC **UUFR30120** is a ultrafast recovery rectifier, featuring a unique combination of low conduction and switching losses, this rectifier is the right choice for high frequency converters, both soft switched / resonant. Specifically designed to improve efficiency of PFC and output rectification stages of EV / HEV battery charging stations, booster stage of solar inverters and UPS applications, these devices are perfectly matched to operate with MOSFETs or high speed IGBTs.



#### FEATURES

- \* Ultrafast, soft recovery
- \* Very low conduction and switching losses
- \* High frequency and or high pulsed current operation
- \* High reverse voltage capability
- \* High junction temperature

#### SYMBOL



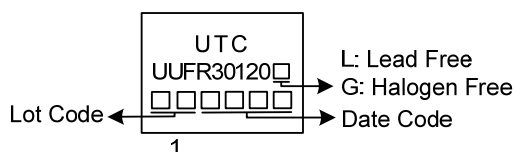
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
UUFR30120L-TA2-T	UUFR30120G-TA2-T	TO-220-2	K	A	Tube

Note: Pin Assignment: K: Cathode A: Anode

UUFR30120G-TA2-T	(1)Packing Type (2)Package Type (3)Green Package	(1) T: Tube (2) TA2: TO-220-2 (3) G: Halogen Free and Lead Free, L: Lead Free
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#### MARKING



### ■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

Ratings at  $25^\circ\text{C}$  ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.

PARAMETER	SYMBOL	RATINGS	UNIT
Repetitive Peak Reverse Voltage	$V_{RRM}$	1200	V
Average forward current, $\delta=0.5\%$	$I_{F(AV)}$	30	A
Repetitive peak forward current	$I_{FRM}$	60	A
Surge non repetitive forward current	$I_{FSM}$	175	A
Operating Junction Temperature	$T_J$	+150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-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 Case	$\theta_{JC}$	3	$^\circ\text{C/W}$

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

Ratings at  $25^\circ\text{C}$  ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Forward voltage drop (Note 1)	$V_F$	$I_F=30\text{A}$			1.9	V
		$T_J=25^\circ\text{C}$				
		$T_J=150^\circ\text{C}$			1.7	V
Junction to Case (Note 2)	$I_R$	$V_R=V_{RRM}$			10	$\mu\text{A}$
		$T_J=25^\circ\text{C}$				
		$T_J=150^\circ\text{C}$			1	mA
Reverse recovery time	$t_{rr}$	$I_F=1.0\text{A}, V_R=400\text{V}, dI_F/dt=-100\text{A}/\mu\text{s}, T_J=25^\circ\text{C}$		90		ns
		$I_F=30\text{A}, V_R=400\text{V}, dI_F/dt=-200\text{A}/\mu\text{s}, T_J=25^\circ\text{C}$		180		ns

Notes: 1. Pulse test:  $t_p = 380\text{ ms}$ ,  $\delta = 2\%$ .

2. Pulse test:  $t_p = 5\text{ ms}$ ,  $\delta = 2\%$ .

3. To evaluate the conduction losses use the following equation:  $P=1.6 \times I_{F(AV)} + 0.012 I_F^2 (\text{RMS})$ .

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