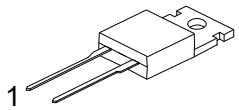
UUFR30120

Preliminary | ***FAST RECOVERY EPITAXIAL DIODE***

ULTRAFAST RECOVERY RECTIFIER PLANAR FRED



TO-220-2

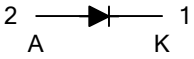
■ DESCRIPTION

The UTC **UHFR30120** 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



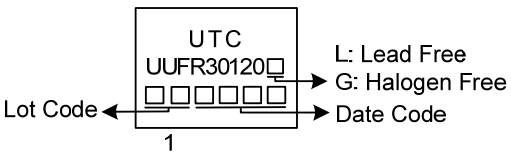
■ ORDERING INFORMATION

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

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

Ratings at 25°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, δ= 0.5%	T_C=130°C	$I_{F(AV)}$	30	A
Repetitive peak forward current	t_P=5μs, F=5kHz square	I_{FRM}	60	A
Surge non repetitive forward current	t_P=10ms Sinusoidal	I_{FSM}	175	A
Operating Junction Temperature		T_J	+150	°C
Storage Temperature Range		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 DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Case	θ_{JC}	3	°C/W

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

Ratings at 25°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=30A	T_J=25°C			1.9	V
			T_J=150°C			1.7	V
Junction to Case (Note 2)	I_R	V_R=V_{RRM}	T_J=25°C			10	μA
			T_J=150°C			1	mA
Reverse recovery time	t_{rr}	I_F=1.0A,V_R=400V, dI_F/dt=-100A/μs, T_J=25°C			90		ns
		I_F=30A,V_R=400V, dI_F/dt=-200A/μs T_J=25°C			180		ns

Notes: 1. Pulse test: t_P = 380 ms, δ= 2 %.
2. Pulse test: t_P = 5 ms, δ= 2 %.
3. To evaluate the conduction losses use the following equation: $P=1.6 \times I_{F(AV)} + 0.012\ I_F^2$ (RMS).