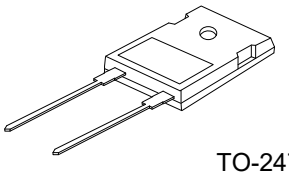
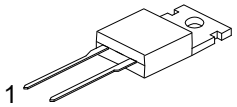
UFR30120

FAST RECOVERY EPITAXIAL DIODE

SUPERFAST RECOVERY RECTIFIER



TO-247-2



TO-220-2

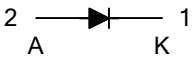
■ DESCRIPTION

The UTC **UFR30120** is a superfast recovery rectifier, it uses UTC's advanced technology to provide customers with low forward voltage drop, low leakage, high current capability and high surge capability etc. These characteristics make it ideal for heavy duty applications that demand long term reliability. also fit into auxiliary functions such as snubber, bootstrap, and demagnetization applications.

■ 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

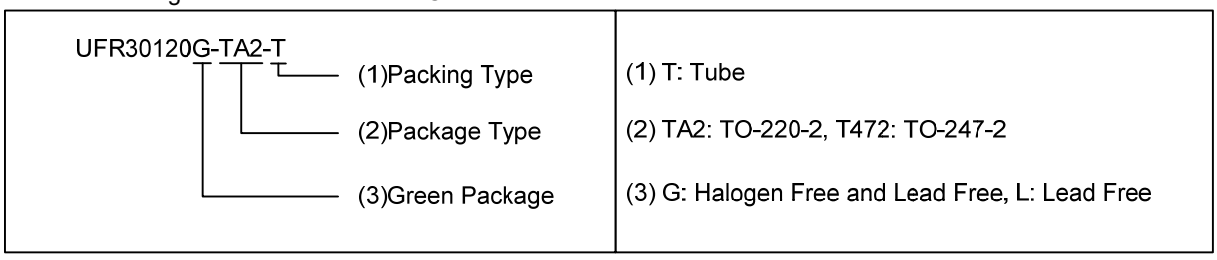
■ SYMBOL



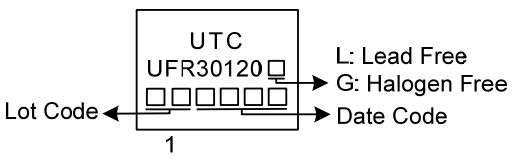
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
UFR30120L-TA2-T	UFR30120G-TA2-T	TO-220-2	K	A	Tube
UFR30120L-T472-T	UFR30120G-T472-T	TO-247-2	K	A	Tube

Note: Pin Assignment: A: Anode K: Cathode



■ 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}	300	A
Surge non repetitive forward current	t_P=10ms Sinusoidal	I_{FSM}	210	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	TO-220-2	θ_{JC}	1.2	°C/W
	TO-247-2		0.8	°C/W

■ ELECTRICAL CHARACTERISTICS

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			3.2	V
			T_J=150°C			2.6	V
Maximum Reverse Leakage Current (Note 2)	I_R	V_R=V_{RRM}	T_J=25°C			250	μA
			T_J=150°C			1	mA
Reverse recovery time	t_{rr}	I_F=1.0A,V_R=30V, dI_F/dt=-100A/μs, T_J=25°C				65	ns
		I_F=30A,V_R=30V, dI_F/dt=-100A/μs T_J=25°C				85	ns
Reverse recovery current	I_{RM}	I_F=30A,V_R=600V, dI_F/dt=-200A/μs, T_J=125°C			25	35	A
Softness factor	S	I_F=30A,V_R=600V, dI_F/dt=-200A/μs T_J=125°C			1.5		
Forward recovery time	t_{fr}	I_F=30A,V_R=100V, V_{FR}=1.5×V_{F_MAX}, T_J=25°C				550	ns
Forward recovery voltage	V_{FP}	I_F=30A, dI_F/dt=100A/μs T_J=25°C			6		V

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).