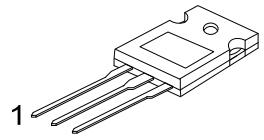
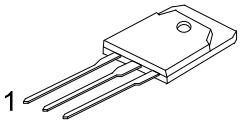
UFR8060C

FAST RECOVERY EPITAXIAL DIODE

ULTRAFAST SOFT RECOVERY RECTIFIER DIODE



TO-247



TO-3P

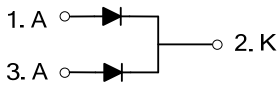
■ DESCRIPTION

The UTC **UFR8060C** utilizes advanced processing techniques to achieve ultrafast recovery times and higher forward current. Its soft recovery characteristics and high reliability suit for wide industrial applications.

■ FEATURES

* Ultrafast Recovery Time
* Soft Recovery Characteristics
* Low Recovery Loss
* Low Forward Voltage
* High Surge Current Capability
* Low Leakage Current

■ SYMBOL



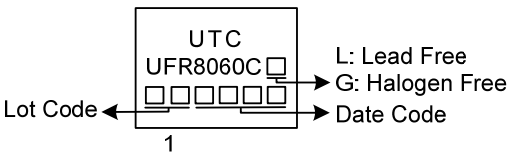
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UFR8060CL-T47-T	UFR8060CG-T47-T	TO-247	A	K	A	Tube
UFR8060CL-T3P-T	UFR8060CG-T3P-T	TO-3P	A	K	A	Tube

Note: Pin Assignment: A: Anode K: Cathode

UFR8060CG-T47-T (1)Packing Type (2)Package Type (3)Green Package	(1) T: Tube (2) T47: TO-247, T3P: TO-3P (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



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

PARAMETER		SYMBOL	RATINGS	UNIT
Maximum D.C. Reverse Voltage		V_R	600	V
Maximum Peak Repetitive Reverse Voltage		V_{RRM}	600	V
Maximum Working Peak Reverse Voltage		V_{RWM}	600	V
Maximum Average Forward Current (T_C=110°C)	Per Leg	$I_{F(AV)}$	40	A
	Total		80	A
Non-Repetitive Forward Surge Current (T_J=45°C, t=10ms, 50Hz, Sine)		I_{FSM}	330	A
Operating Temperature Range		T_J	-40 ~ +150	°C
Storage Temperature Range		T_{STG}	-40 ~ +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.

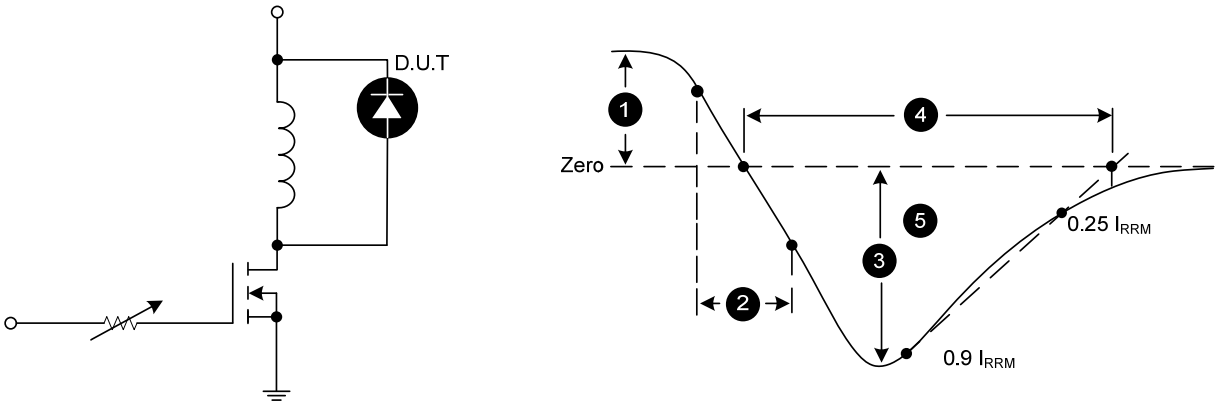
■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Case	θ_{JC}	0.8	°C/W

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
STATIC PARAMETERS						
Forward Voltage	V_F	I_F=40A			2.0	V
		I_F=40A, T_J=150°C			1.8	V
Maximum Reverse Leakage Current	I_{RM}	V_R=600V			100	μA
		V_R=600V, T_J=150°C			500	μA
DYNAMIC PARAMETERS						
Reverse Recovery Time	t_{rr}	I_F=1A, di_F/dt=-100A/μs, V_R=400V		64	80	ns
Reverse Recovery Time	t_{rr}	I_F=30A, di_F/dt=-100A/μs, V_R=400V, T_J=25°C		85	105	ns

■ TEST CIRCUITS AND WAVEFORMS

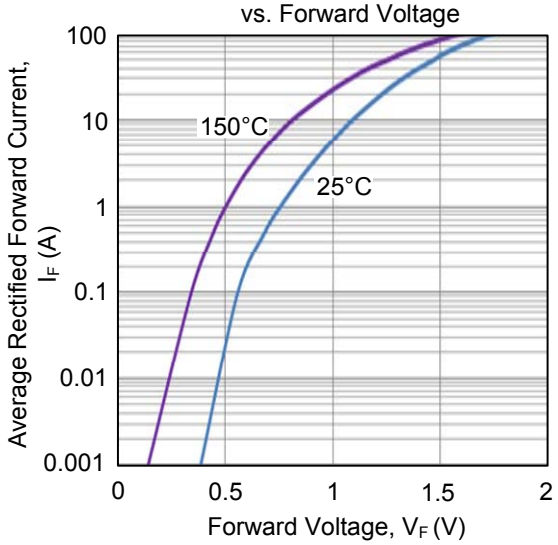


Diode Reverse Recovery Test Circuit and Waveform

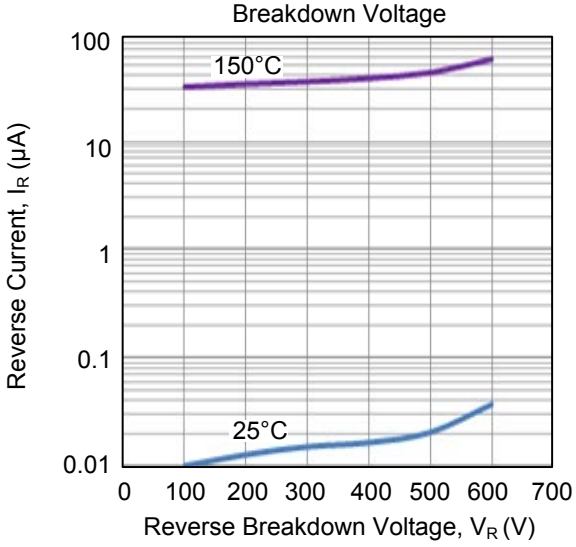
1. I_F - Forward Conduction Current
2. di_F/dt - Rate of Diode Current Change Through Zero Crossing.
3. I_{RRM} - Maximum Reverse Recovery Current.
4. t_{rr} - Reverse Recovery Time, measured from zero crossing where diode current goes from positive to negative, to the point at which the straight line through I_{RRM} and $0.25 \cdot I_{RRM}$ passes through zero.
5. Qrr - Area Under the Curve Defined by I_{RRM} and t_{rr}.

■ TYPICAL CHARACTERISTICS

Average Rectified Forward Current vs. Forward Voltage



Reverse Current Vs. Reverse Breakdown Voltage



Power Dissipation vs. Junction Temperature