UTC UNISONIC TECHNOLOGIES CO., LTD

BYC15　　　Preliminary　　　*DIODE*

RECTIFIER DIODE, HYPERFAST

■ DESCRIPTION

The UTC **BYC15** is a rectifier diode. It provides the designers with ultra-fast switching and low switching loss in associated MOSFET.

The UTC **BYC15** is suitable for half-bridge lighting ballasts, half-bridge/full-bridge switched mode power supplies and active power factor correction applications.

■ FEATURES

* Low Reverse Recovery Current
* Ultra-Fast Switching
* Low Switching Loss in associated MOSFET
* Low Thermal Resistance

Tab

1

TO-220-2

■ SYMBOL

K 1   A 2
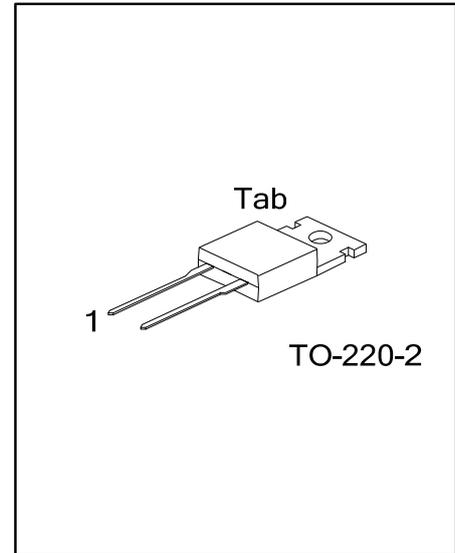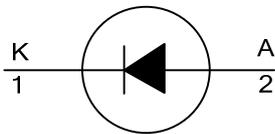
■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
Lead Free	Halogen Free		1	2	Tab	
BYC15L-6-TA2-T	BYC15G-6-TA2-T	TO-220-2	K	A	K	Tube

Note: Pin Assignment: A: Anode　　K: Cathode　　Tab: Mounting Base

BYC15L-6-TA2-T

(1)Packing Type　　　(1) T: Tube

(2)Package Type　　　(2) TA2: TO-220-2

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

■ MARKING

UTC
BYC15□

Lot Code

1

L: Lead Free
G: Halogen Free
Data Code

BYC15   **Preliminary**   *DIODE*
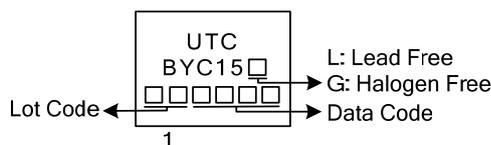
■ **ABSOLUTE MAXIMUM RATINGS**

PARAMETER		SYMBOL	RATINGS	UNIT
Peak Repetitive Reverse Voltage		V_{RRM}	600	V
Crest Working Reverse Voltage		V_{RWM}	600	V
Reverse Voltage	square-wave pulse;δ =1.0; T_{Tab} ≤100°C	V_R	500	V
Average Forward Current	square-wave pulse;δ =0.5; T_{Tab} ≤98°C	$I_{F(AV)}$	15	A
Repetitive Peak Forward Current	square-wave pulse; δ =0.5; t_P = 25μs, T_{Tab} ≤98°C	I_{FRM}	30	A
Non-Repetitive Peak Forward Current.	t_P=10ms,sine-wave pulse;	I_{FSM}	200	A
	t_P=8.3ms,sine-wave pulse;		220	A
Junction Temperature		T_J	150	°C
Storage Temperature		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 Ambient	θ_{JA}	60	K/W
Junction to Tab	θ_{JB}	1.5	K/W

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

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Forward Voltage	V_F	I_F =15A, T_J =150°C			1.32	2.03	V
		I_F =30A, T_J =150°C			1.64	2.34	V
		I_F =15A			1.89	2.9	V
Reverse Current	I_R	V_R=600V			12	200	μA
		V_R=500V, T_J=100°C			1.1	3.0	mA
Reverse Recovery Time	t_{RR}	I_F =1A, V_R=30V, dI_F/dt=50A/μs (Figure1)			35	55	ns
		I_F=15A,V_R=400V,I_F/dt=500A/μs (Figure1)	T_J=25°C		19		ns
			T_J=100°C		32	40	ns
Peak Reverse Recovery Current	I_{RM}	I_F=15A,V_R=400V, T_J=125°C (Figure1)	dI_F/dt=50A/μs		3.0	7.5	A
			dI_F/dt=500A/μs		9.5	12	A
Forward Recovery Voltage	V_{FR}	I_F =15A, dI_F/dt=100A/μs (Figure2)			8	11	V

■ **TYPICAL CHARACTERISTICS**
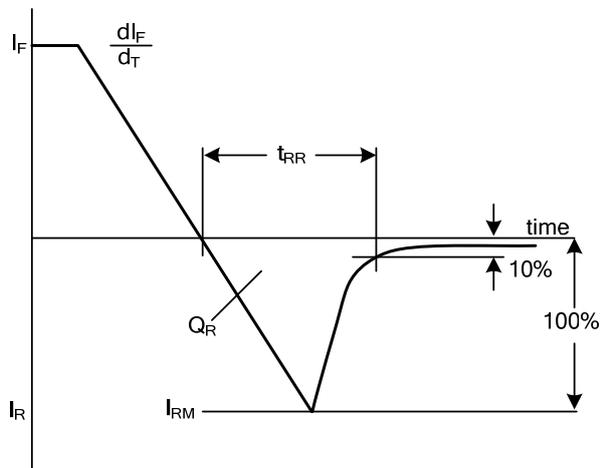
Fig 1. Reverse Recovery Definitions
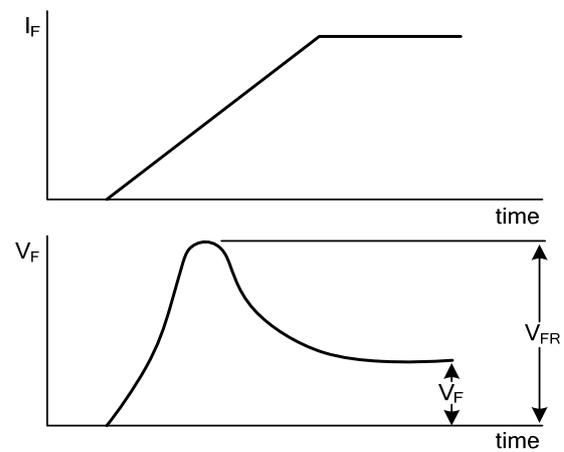
Fig 2. Forward Recovery Definitions