



## RECTIFIER DIODE, HYPERFAST

### DESCRIPTION

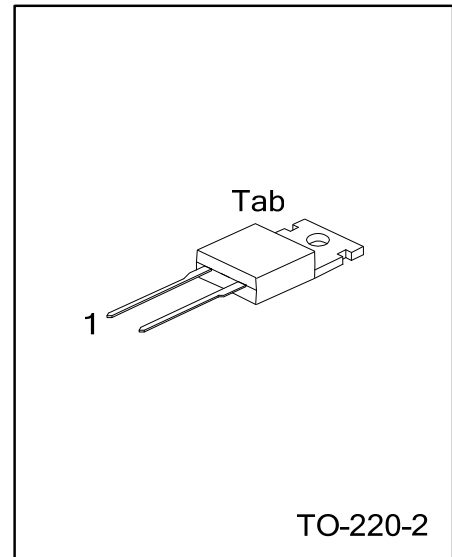
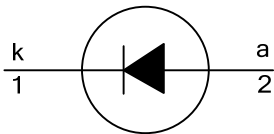
The UTC **BYC15-600** is a rectifier diode. It provides the designers with ultra-fast switching and low switching loss in associated MOSFET.

The UTC **BYC15-600** 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

### SYMBOL



### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free Plating	Halogen Free		1	2	Tab	
BYC15L-600-TA2-T	BYC15G-600-TA2-T	TO-220-2	K	A	K	Tube

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

BYC15L-600-TA2-T (1) Packing Type (2) Package Type (3) Lead Free	(1) T: Tube (2) TA2: TO-220-2 (3) L: Lead Free, G: Halogen Free
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### ■ 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; $\delta = 1.0$ ; $T_{Tab} \leq 100^{\circ}\text{C}$	$V_R$	500	V
Average Forward Current	square-wave pulse; $\delta = 0.5$ ; $T_{Tab} \leq 98^{\circ}\text{C}$	$I_{F(AV)}$	15	A
Repetitive Peak Forward Current	square-wave pulse; $\delta = 0.5$ ; $t_P = 25\mu\text{s}$ , $T_{Tab} \leq 98^{\circ}\text{C}$	$I_{FRM}$	30	A
Non-Repetitive Peak Forward Current.	$t_P = 10\text{ms}$ , sine-wave pulse;	$I_{FSM}$	200	A
			$t_P = 8.3\text{ms}$ , sine-wave pulse;	220
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$	
Storage Temperature	$T_{STG}$	-40 ~ +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 Ambient	$\theta_{JA}$	60	K/W
Junction to Tab	$\theta_{JB}$	1.5	K/W

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

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

■ TYPICAL CHARACTERISTICS

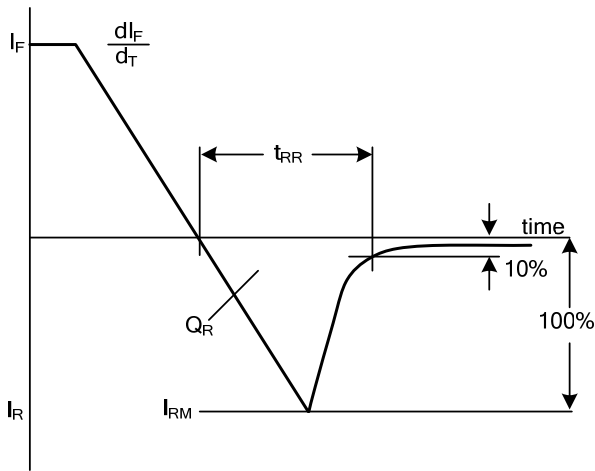


Fig 1. Reverse Recovery Definitions

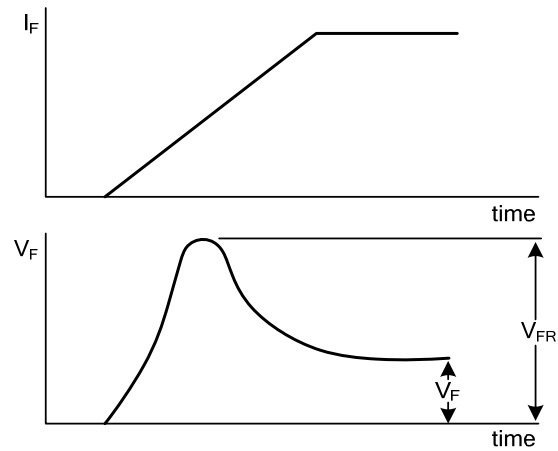


Fig 2. Forward Recovery Definitions

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