



RECTIFIER DIODE,
HYPERFAST

DESCRIPTION

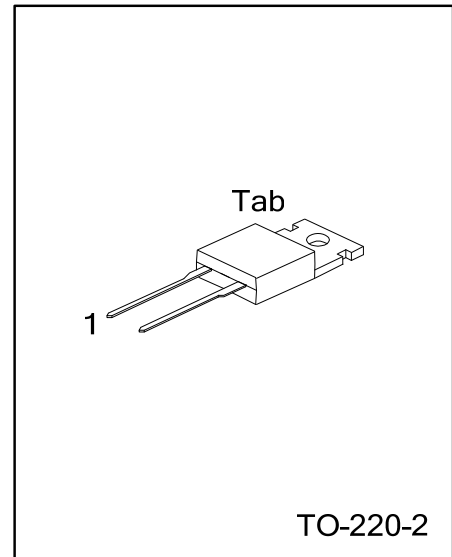
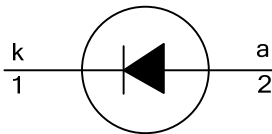
The UTC **BYC20-600** is a rectifier diode. It provides the designers with ultra-fast switching and low switching loss in associated MOSFET.

The UTC **BYC20-600** is ideally used in half-bridge lighting ballasts, half-bridge/full-bridge switched mode power supplies and continuous current mode (CCM) power factor correction (PFC).

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	
BYC20L-600-TA2-T	BYC20G-600-TA2-T	TO-220-2	K	A	K	Tube

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

<p>BYC20L-600-TA2-T</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Free</p>	<p>(1) T: Tube</p> <p>(2) TA2: TO-220-2</p> <p>(3) L: Lead Free, G: Halogen Free</p>
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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; $\delta = 1.0$; $T_{Tab} \leq 100^{\circ}C$	V_R	500	V
Average Forward Current	square-wave pulse; $\delta = 0.5$; $T_{Tab} \leq 93^{\circ}C$	$I_{F(AV)}$	20	A
Repetitive Peak Forward Current	square-wave pulse; $\delta = 0.5$; $t_p = 25\mu s, T_{Tab} \leq 93^{\circ}C$	I_{FRM}	40	A
Non-Repetitive Peak Forward Current	$t_p = 10ms, \text{sine-wave pulse};$	I_{FSM}	250	A
	$t_p = 8.3ms, \text{sine-wave pulse};$		274	A
Operating Junction Temperature		T_J	150	$^{\circ}C$
Storage Temperature		T_{STG}	-40 ~ +150	$^{\circ}C$

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}	1.2	K/W

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Forward Voltage	V_F	$I_F = 20A, T_J = 150^{\circ}C$		1.54	1.97	V
		$I_F = 40A, T_J = 150^{\circ}C$		1.95	2.34	V
		$I_F = 20A$		1.89	2.9	V
Reverse Current	I_R	$V_R = 600V$		16	200	μA
		$V_R = 500V, T_J = 100^{\circ}C$		1.6	3.0	mA
Reverse Recovery Time	t_{RR}	$I_F = 1A, V_R = 30V, \frac{dI_F}{dt} = 50A/\mu s$ (Figure 1)		35	55	ns
		$I_F = 20A, V_R = 400V, \frac{dI_F}{dt} = 500A/\mu s$ $T_J = 25^{\circ}C$ (Figure 1)		19		ns
		$T_J = 100^{\circ}C$		32	40	ns
Peak Reverse Recovery Current	I_{RM}	$I_F = 20A, V_R = 400V, \frac{dI_F}{dt} = 50A/\mu s$ $T_J = 125^{\circ}C$ (Figure 1)		3.0	7.5	A
		$\frac{dI_F}{dt} = 500A/\mu s$		9.5	12	A
Forward Recovery Voltage	V_{FR}	$I_F = 20A, \frac{dI_F}{dt} = 100A/\mu s$ (Figure 2)		8	11	V

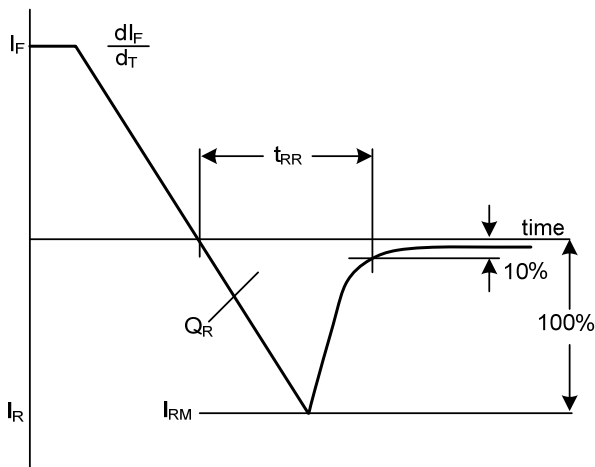


Fig 1. Reverse Recovery Definitions

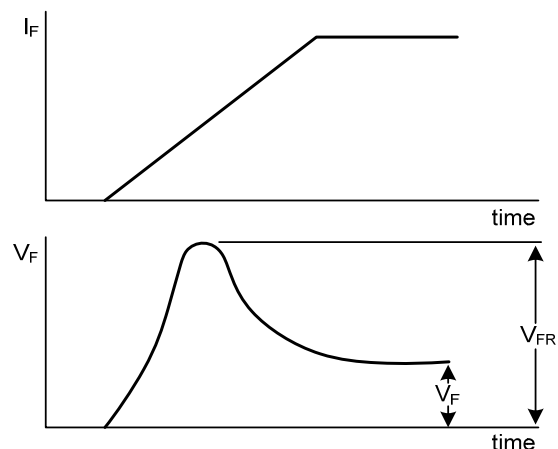


Fig 2. Forward Recovery Definitions

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