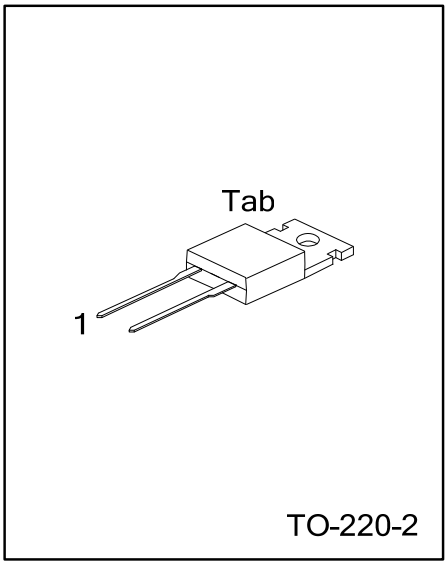
RECTIFIER DIODE, HYPERFAST



TO-220-2

■ DESCRIPTION

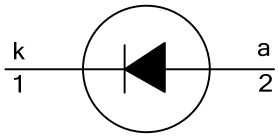
The UTC **BYC20-600** is a rectifier diode. It provides the designers with ultra-fast switching and low switching loss in associated MOSFET.

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

BYC20L-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

■ 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} ≤93°C	$I_{F(AV)}$	20	A
Repetitive Peak Forward Current	square-wave pulse; δ =0.5; t_P = 25μs, T_{Tab} ≤93°C	I_{FRM}	40	A
Non-Repetitive Peak Forward Current	t_P=10ms,sine-wave pulse;	I_{FSM}	250	A
	t_P=8.3ms,sine-wave pulse;		274	A
Operating 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	$θ_{JB}$	1.2	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 =20A, T_J =150°C			1.54	1.97	V
		I_F =40A, T_J =150°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°C			1.6	3.0	mA
Reverse Recovery Time	t_{RR}	I_F =1A, V_R=30V, dI_F/dt=50A/μs(Figure 1)			35	55	ns
		I_F=20A,V_R=400V, dI_F/dt=500A/μs (Figure 1)	T_J=25°C		19		ns
			T_J=100°C		32	40	ns
Peak Reverse Recovery Current	I_{RM}	I_F=20A,V_R=400V, T_J=125°C (Figure 1)	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 =20A, dI_F/dt=100A/μs (Figure 2)			8	11	V

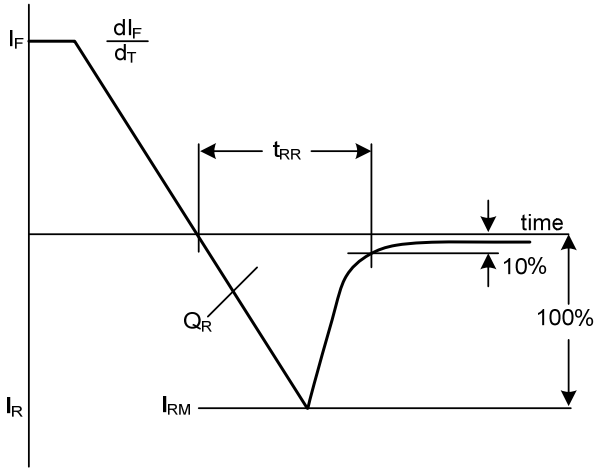


Fig 1. Reverse Recovery Definitions

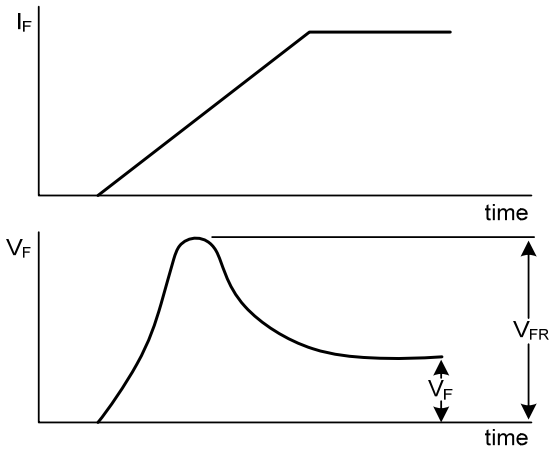


Fig 2. Forward Recovery Definitions