

UNISONIC TECHNOLOGIES CO., LTD

BYC5-600

Preliminary

DIODE

ULTRAFAST, LOW SWITCHING LOSS RECTIFIER DIODE

DESCRIPTION

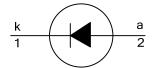
The UTC **BYC5-600** is a rectifier diode. It provides the designers with ultra-fast switching and low switching loss.

The UTC **BYC5-600** 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
- * Low Thermal Resistance

SYMBOL



ORDERING INFORMATION

Tab
TO-220-2

Ordering Number		Packago	Pin A	Assign	Packing	
Lead Free Plating	Halogen Free	Package	1	2	Tab	Facking
BYC5L-600-TA2-T	BYC5G-600-TA2-T	TO-220-2	K	Α	К	Tube
Note: Pin Assignment: A: Anode, K: Cathode, Tab: Mounting Base						

BYC5L-600- <u>TA2-T</u> (1)Packing Type	(1) T: Tube
(2)Package Type	(2) TA2: TO-220-2
(3)Lead Free	(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
Continuous Reverse Voltage	T _{Tab} ≤ 110°C	V _R	500	V
Average Forward Current	δ =0.5; with reapplied V _{RRM(max}); T _{Tab} ≤89°C I _{F(AV)} 5		5	А
Repetitive Peak Forward Current	δ =0.5; with reapplied V _{RRM(max}); T _{Tab} ≤ 89°C	I _{FRM}	10	А
	t = 10ms		40	А
Non-Repetitive Peak Forward Current	t = 8.3ms sinusoidal; T _J =150°C prior to surge with reapplied V _{RWM(max)}	I _{FSM}	44	А
Junction Temperature		TJ	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}	2.5	K/W

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

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
		I _F =5A, T _J =150°C			1.4	1.75	V
Forward Voltage		I _F =10A, Τ _J =150°C			1.75	2.2	V
		I _F =5A			2.0	2.9	V
Reverse Current	I _R	V _R =600V			9	100	μA
Reverse Current		V _R =500V, T _J =100°C			0.9	3.0	mA
	t _{RR}	I _F =1A, V _R =30V, dI _F /dt=50A/μs			30	50	ns
Reverse Recovery Time		I _F =5A, V _R =400V,			19		ns
		dI _F /dt=500A/µs	T_=100°C		25	30	ns
Peak Reverse Recovery Current	I _{RRM}	I _F =5A, V _R =400V, T _J =125°C	dl _F /dt=50A/µs		0.7	3	Α
			dl _F /dt=500A/µs		8	11	Α
Forward Recovery Voltage	V_{FR}	I _F =10A, dI _F /dt=100A/µs			9	11	V



TYPICAL CHARACTERISTICS

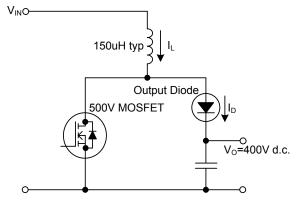


Fig.1. Typical application, output rectifier in boost converter power factor correction circuit. Continuous conduction mode, where the transistor turns on whilst forward current is still flowing in the diode.

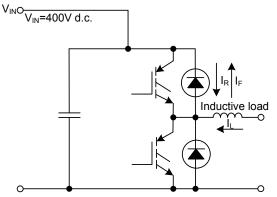


Fig.2. Typical application, freewheeling diode in half bridge converter. Continuous conduction mode, where each transistor turns on whilst forward current is still flowing in the other bridge leg diode.

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