



BYC5

Preliminary

DIODE

ULTRAFAST, LOW SWITCHING LOSS RECTIFIER DIODE

DESCRIPTION

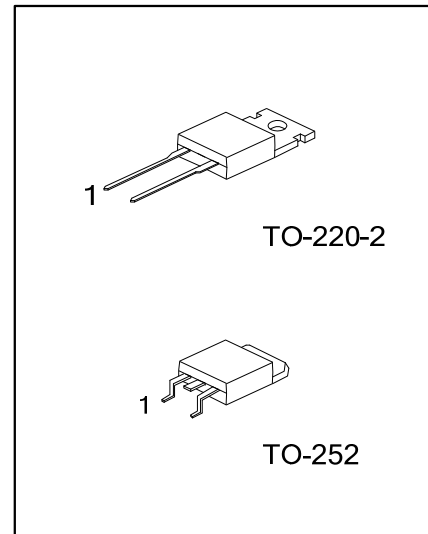
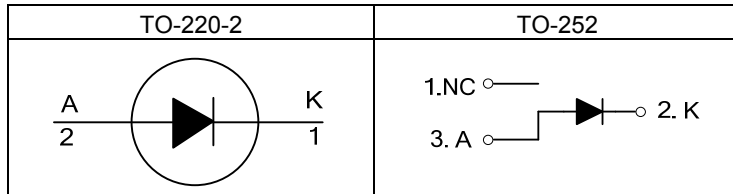
The UTC **BYC5** is a rectifier diode. It provides the designers with ultra-fast switching and low switching loss.

The UTC **BYC5** 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



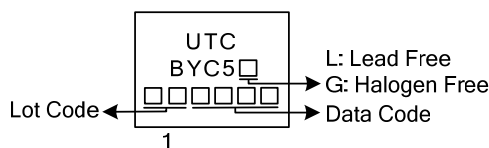
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BYC5L-6-TA2-T	BYC5G-6-TA2-T	TO-220-2	K	A	NC	Tube
BYC5L-6-TN3-T	BYC5G-6-TN3-T	TO-252	NC	K	A	Tube
BYC5L-6-TN3-R	BYC5G-6-TN3-R	TO-252	NC	K	A	Tape Reel

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

<p>BYC5L-6-TA2-T</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package 	<ul style="list-style-type: none"> (1) T: Tube (2) TA2: TO-220-2, TN3: TO-252 (3) L: Lead Free, G: Halogen Free and Lead Free
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MARKING



■ 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	V_R	500	V
Average Forward Current	$I_{F(AV)}$	5	A
Repetitive Peak Forward Current	I_{FRM}	10	A
Non-Repetitive Peak Forward Current	I_{FSM}	40	A
		44	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 CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	60	°C/W
		80	°C/W
Junction to Case	θ_{JC}	2.5	°C/W
		3.5	°C/W

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Forward Voltage	V_F	$I_F = 5\text{A}, T_J = 150^\circ\text{C}$		1.4	1.75	V
		$I_F = 10\text{A}, T_J = 150^\circ\text{C}$		1.75	2.2	V
		$I_F = 5\text{A}$		2.0	2.9	V
Reverse Current	I_R	$V_R = 600\text{V}$		9	100	μA
		$V_R = 500\text{V}, T_J = 100^\circ\text{C}$		0.9	3.0	mA
Reverse Recovery Time	t_{RR}	$I_F = 1\text{A}, V_R = 30\text{V}, dI_F/dt = 50\text{A}/\mu\text{s}$		30	50	ns
		$I_F = 5\text{A}, V_R = 400\text{V}, dI_F/dt = 500\text{A}/\mu\text{s}$		19		ns
Peak Reverse Recovery Current	I_{RRM}	$I_F = 5\text{A}, V_R = 400\text{V}, T_J = 125^\circ\text{C}$	$dI_F/dt = 50\text{A}/\mu\text{s}$	0.7	3	A
			$dI_F/dt = 500\text{A}/\mu\text{s}$	8	11	A
Forward Recovery Voltage	V_{FR}	$I_F = 10\text{A}, dI_F/dt = 100\text{A}/\mu\text{s}$		9	11	V

■ TYPICAL CHARACTERISTICS

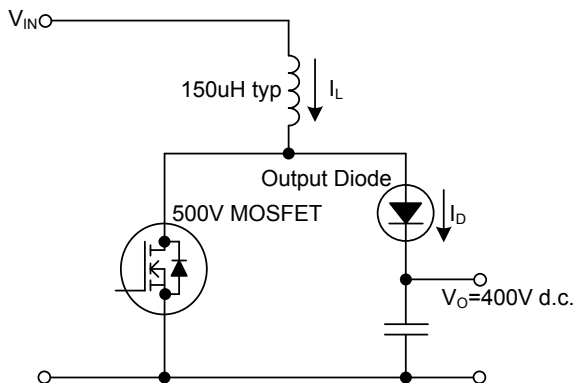


Fig.1. Typical application, output rectifier in boost converter power factor correction circuit. Continuous conduction mode, where the transistor turns on whilst forward current is still flowing in the diode.

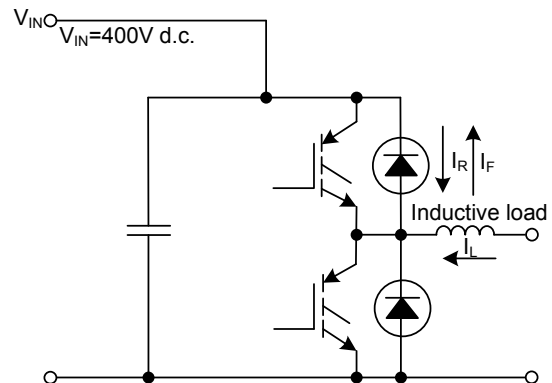


Fig.2. Typical application, freewheeling diode in half bridge converter. Continuous conduction mode, where each transistor turns on whilst forward current is still flowing in the other bridge leg diode.

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