



ULTRAFAST, LOW SWITCHING LOSS RECTIFIER DIODE

DESCRIPTION

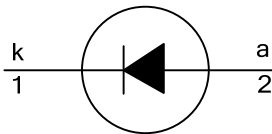
The UTC **BYC8-600** is a rectifier diode. It provides the designers with ultra-fast switching and low switching loss in associated MOSFET.

The UTC **BYC8-600** is generally applied in continuous current mode(CCM), power factor correction (PFC), half-bridge lighting ballasts and half-bridge/full-bridge switched mode power supplies.

FEATURES

- * Low Reverse Recovery Current
- * Ultra-Fast Switching
- * Low Switching Loss In Associated MOSFET
- * Low Thermal Resistance

SYMBOL

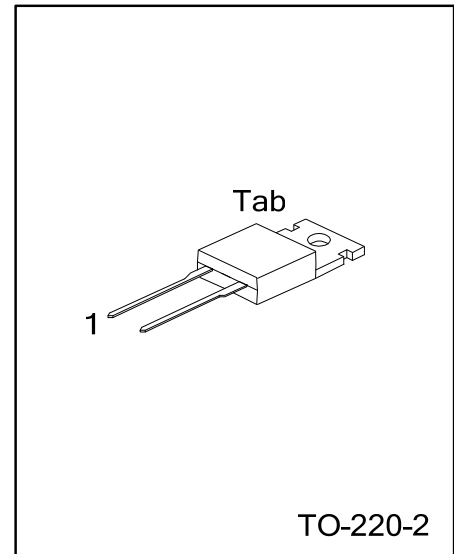


ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-------------------|-----------------|----------|----------------|---|-----|---------|
| Lead Free Plating | Halogen Free | | 1 | 2 | Tab | |
| BYC8L-600-TA2-T | BYC8G-600-TA2-T | TO-220-2 | K | A | K | Tube |

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

| | | |
|-----------------|-----------------|-----------------------------------|
| BYC8L-600-TA2-T | (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 |
| Average Forward Current | square-wave pulse; $\delta = 0.5$; $T_{Tab} \leq 109^{\circ}\text{C}$ | $I_{F(AV)}$ | 8 | A |
| Repetitive Peak Forward Current | square-wave pulse; $\delta = 0.5$; $t_p = 25\mu\text{s}$, $T_{Tab} \leq 109^{\circ}\text{C}$ | I_{FRM} | 16 | A |
| Non-Repetitive Peak Forward Current. | $t_p = 8.3\text{ms}$, sine-wave pulse; $T_J = 150^{\circ}\text{C}$ | I_{FSM} | 60 | A |
| | $t_p = 10\text{ms}$, sine-wave pulse; $T_J = 150^{\circ}\text{C}$ | | 55 | A |
| Operating 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.

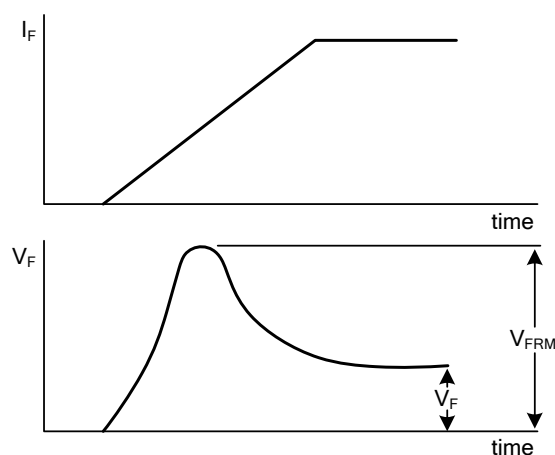
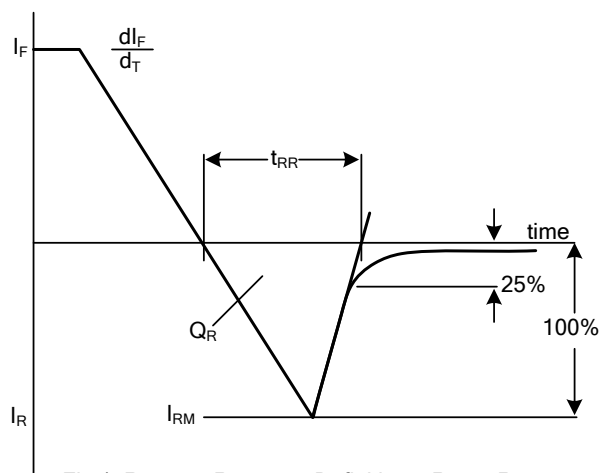
■ THERMAL DATA

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------|---------------|---------|------|
| Junction to Ambient | θ_{JA} | 60 | K/W |
| Junction to Tab | θ_{JB} | 2.2 | 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 | $I_F = 8\text{A}$, $T_J = 25^{\circ}\text{C}$ | | 2 | 2.9 | V |
| | | $I_F = 8\text{A}$, $T_J = 150^{\circ}\text{C}$ | | 1.4 | 1.85 | V |
| | | $I_F = 16\text{A}$, $T_J = 150^{\circ}\text{C}$ | | 1.7 | 2.3 | V |
| Reverse Current | I_R | $V_R = 600\text{V}$ | | 9 | 150 | μA |
| | | $V_R = 500\text{V}$, $T_J = 100^{\circ}\text{C}$ | | 1.1 | 3 | mA |
| Recovered Charge | Q_R | $I_F = 1\text{A}$, $dI_F/dt = 100\text{A}/\mu\text{s}$, $T_J = 25^{\circ}\text{C}$ | | 12 | | nC |
| Reverse Recovery Time | t_{RR} | $I_F = 1\text{A}$, $V_R = 30\text{V}$, $dI_F/dt = 50\text{A}/\mu\text{s}$, $T_J = 25^{\circ}\text{C}$ | | 30 | 52 | ns |
| | | $I_F = 8\text{A}$, $V_R = 400\text{V}$, $T_J = 100^{\circ}\text{C}$ | | 32 | 40 | ns |
| | | $dI_F/dt = 500\text{A}/\mu\text{s}$, $T_J = 25^{\circ}\text{C}$ (See Figure1) | | 19 | | ns |
| Peak Reverse Recovery Current | I_{RM} | $I_F = 8\text{A}$, $V_R = 400\text{V}$, $dI_F/dt = 50\text{A}/\mu\text{s}$, $T_J = 125^{\circ}\text{C}$ | | 1.5 | 5.5 | A |
| | | $I_F = 8\text{A}$, $V_R = 400\text{V}$, $dI_F/dt = 500\text{A}/\mu\text{s}$, $T_J = 100^{\circ}\text{C}$ | | 9.5 | 12 | A |
| Forward Recovery Voltage | V_{FR} | $I_F = 10\text{A}$, $dI_F/dt = 100\text{A}/\mu\text{s}$ (See Figure2) | | 8 | 10 | V |

■ TYPICAL CHARACTERISTICS



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