

**FAST RECOVERY RECTIFIER DIODES****Table 1: Main Product Characteristics**

$I_{F(AV)}$	6 A
V_{RRM}	800 V
T_j	150°C
$V_F(\text{max})$	1.4 V
$t_{rr}(\text{max})$	300 ns

**FEATURES AND BENEFITS**

- High voltage capability
- Fast and soft recovery

DESCRIPTION

Single chip rectifier suited for power conversion and polarity protection applications.
This device is packaged in TO-220AC.

Table 2: Order Code

Part Number	Marking
BYT71-800	BYT71800

Table 3: Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive peak reverse voltage	800	V
$I_{F(RMS)}$	RMS forward current	12	A
$I_{F(AV)}$	Average forward current $\delta = 0.5$	6	A
I_{FSM}	Surge non-repetitive forward current	90	A
T_{stg}	Storage temperature range	-65 to + 150	°C
T_j	Maximum operating junction temperature	150	°C

BYT71-800**Table 4: Thermal Resistance**

Symbol	Parameter	Value (max).	Unit
$R_{th(j-c)}$	Junction to case	2.3	°C/W

Table 5: Static Electrical Characteristics

Symbol	Parameter	Test conditions	Min.	Typ	Max.	Unit
I_R^*	Reverse leakage current	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$		20	μA
		$T_j = 100^\circ\text{C}$			1	mA
V_F^{**}	Forward voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 6\text{A}$		1.4	V
		$T_j = 100^\circ\text{C}$			1.3	

Pulse test: * $t_p = 5\text{ ms}$, $\delta < 2\%$
 ** $t_p = 380\ \mu\text{s}$, $\delta < 2\%$

To evaluate the conduction losses use the following equation: $P = 1.15 \times I_{F(AV)} + 0.025 I_F^2(\text{RMS})$

Table 6: Recovery Characteristics

Symbol	Parameter	Test conditions	Min.	Typ	Max.	Unit
t_{rr}	Reverse recovery time	$T_j = 25^\circ\text{C}$ $I_F = 1\text{A}$ $di_F/dt = -15\text{ A}/\mu\text{s}$ $V_R = 30\text{V}$			300	ns

Figure 1: Average forward power dissipation versus average forward current

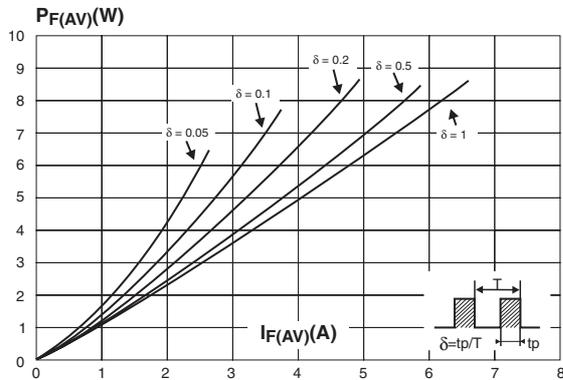


Figure 2: Average current versus ambient temperature ($\delta = 0.5$)

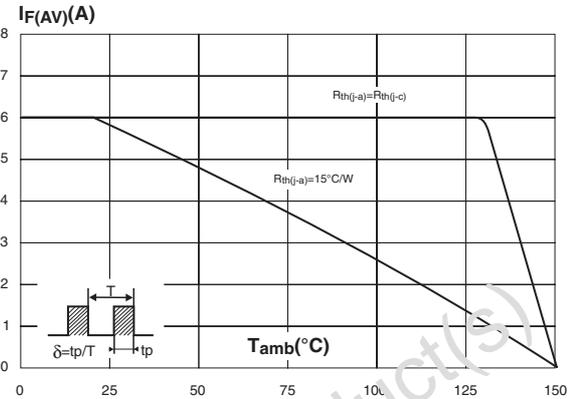


Figure 3: Relative variation of thermal impedance junction to case versus pulse duration

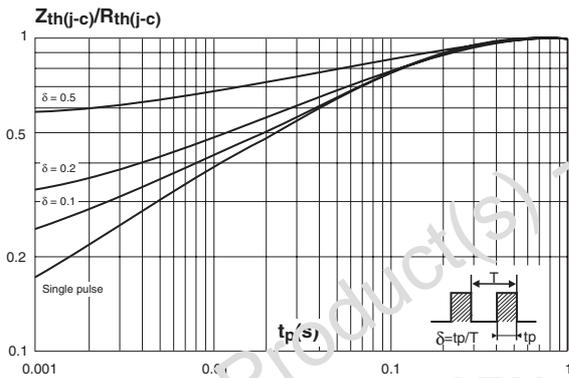


Figure 4: Peak current versus form factor

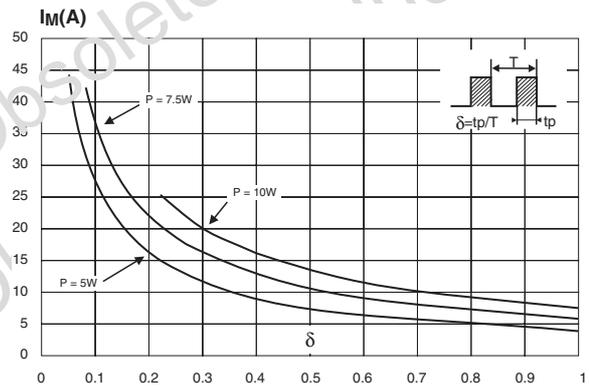


Figure 5: Peak reverse current versus di_F/dt (90% confidence)

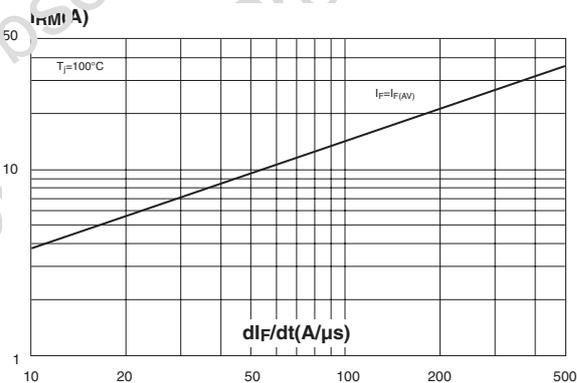


Figure 6: Forward voltage drop versus forward current (maximum values)

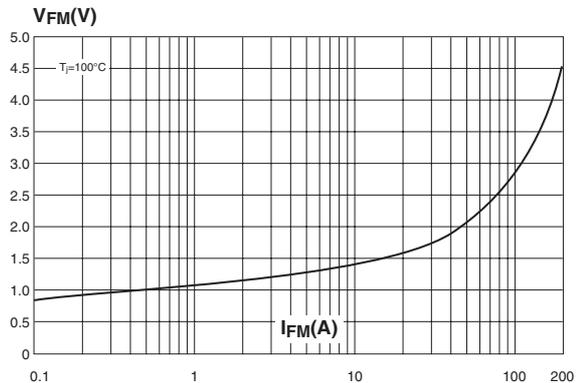


Figure 7: Recovery charges versus di_F/dt (90% confidence)

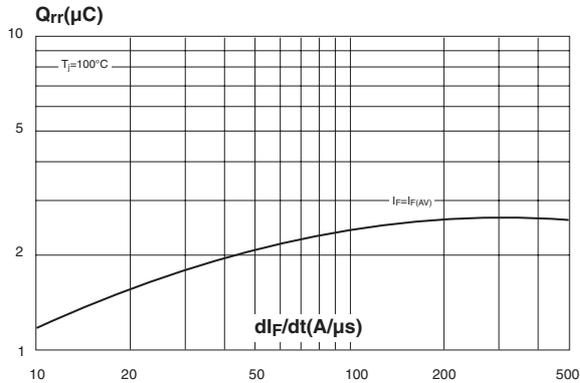


Figure 8: Peak forward voltage versus di_F/dt (90% confidence)

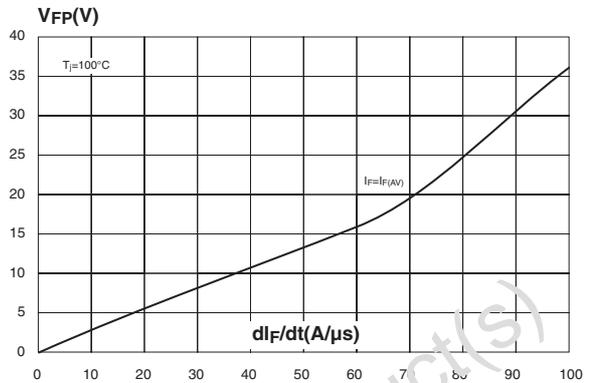


Figure 9: Recovery time versus di_F/dt (90% confidence)

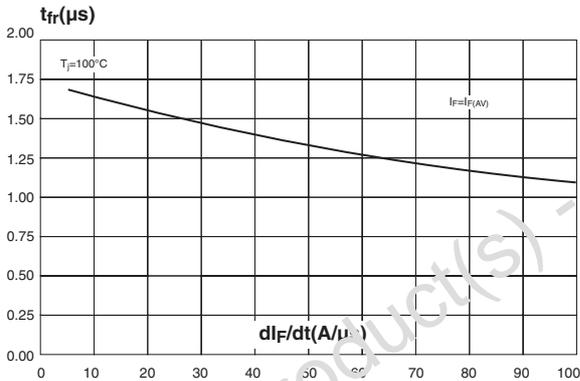


Figure 10: Junction capacitance versus reverse voltage applied (typical values)

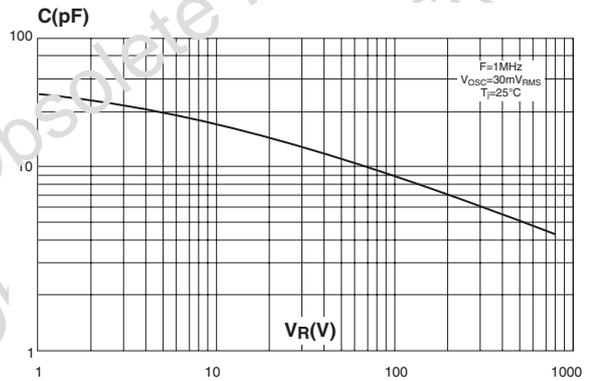


Figure 11: Dynamic parameters versus junction temperature

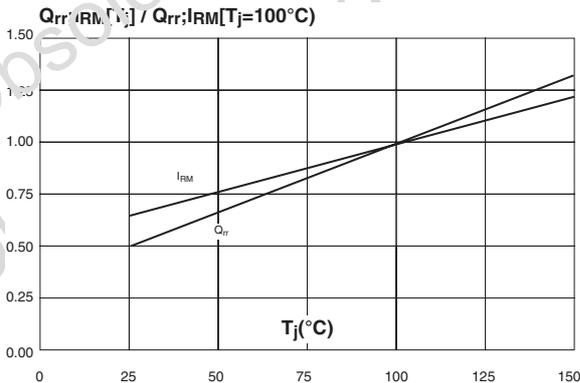


Figure 12: TO-220AC Package Mechanical Data

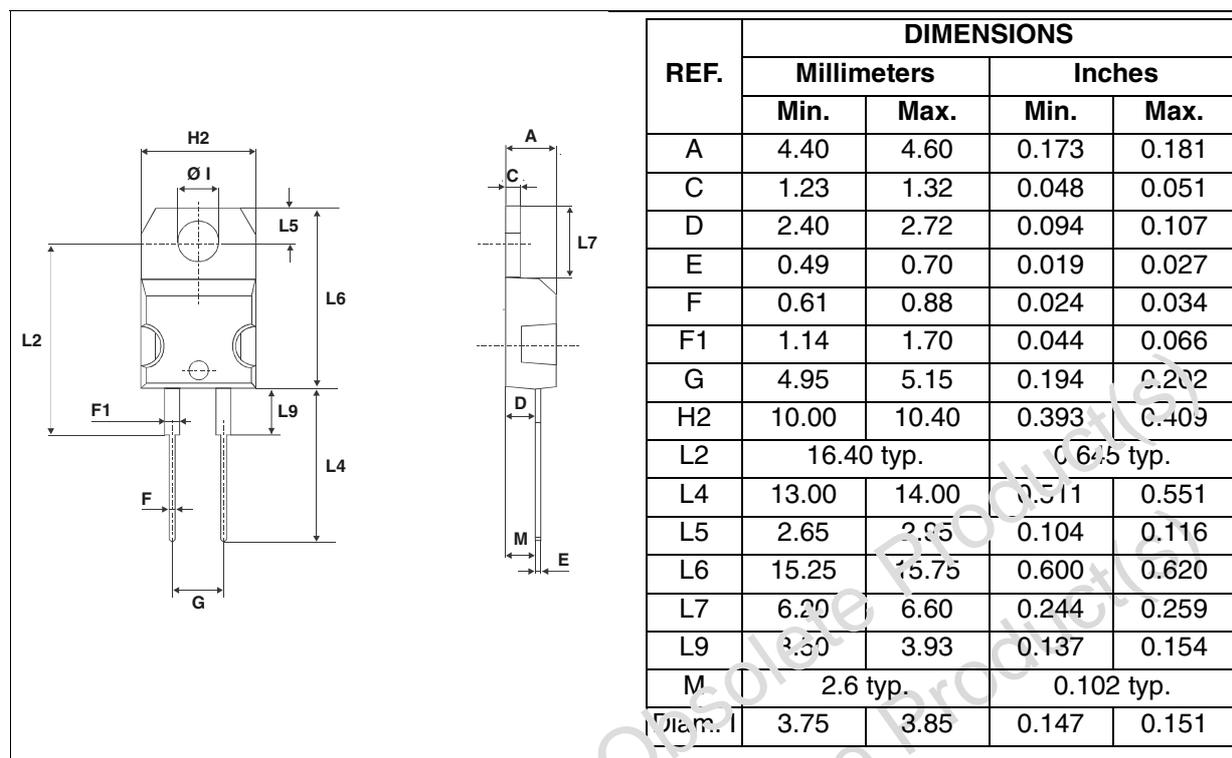


Table 7: Ordering Information

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
BYW71-800	BYW71800	TO-220AC	1.90 g	50	Tube

- Epoxy meets UL94, V0
- Cooling method: by conduction (C)
- Recommended torque value: 0.55 m.N. (TO-220AC)
- Maximum torque value: 0.70 m.N. (TO-220AC)

Table 8: Revision History

Date	Revision	Description of Changes
16-Apr-2005	1	First issue.

Obsolete Product(s) - Obsolete Product(s)
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