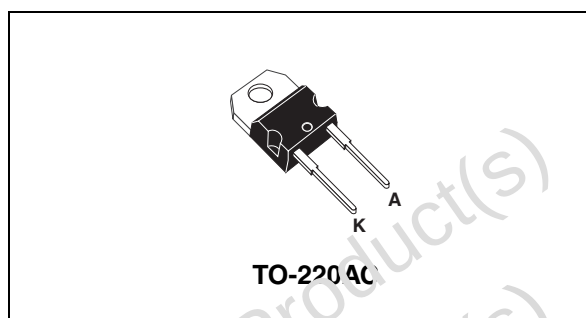


**BYT71-800****FAST RECOVERY RECTIFIER DIODES****Table 1: Main Product Characteristics**

$I_{F(AV)}$	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 $\delta = 0.5$	$T_c = 130^\circ\text{C}$	6	A
I_{FSM}	Surge non repetitive forward current	$t_p = 10\text{ms sinusoidal}$	90	A
T_{stg}	Storage temperature range		-65 to + 150	°C
T_j	Maximum operating junction temperature		150	°C

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: * $t_p = 5\text{ ms}$, $\delta < 2\%$

** $t_p = 380\text{ }\mu\text{s}$, $\delta < 2\%$

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

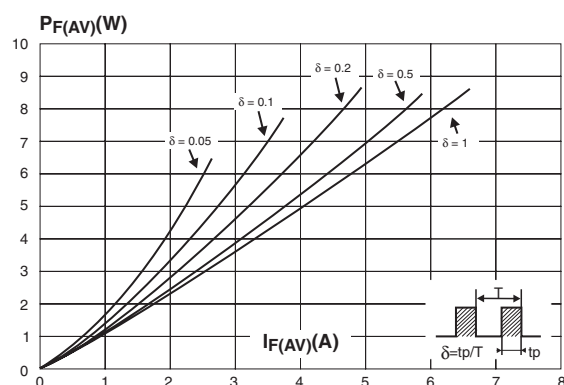


Figure 2: Average current versus ambient temperature ($\delta = 0.5$)

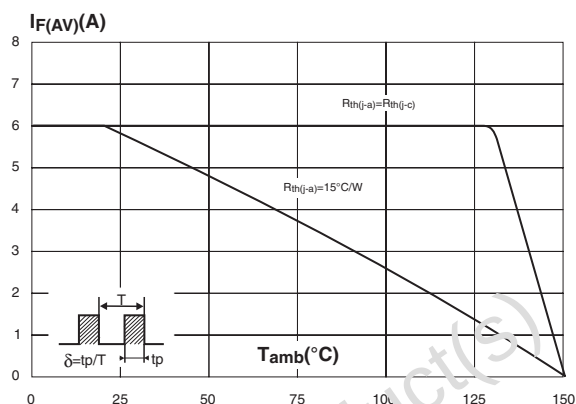


Figure 3: Relative variation of thermal impedance junction to case versus pulse duration

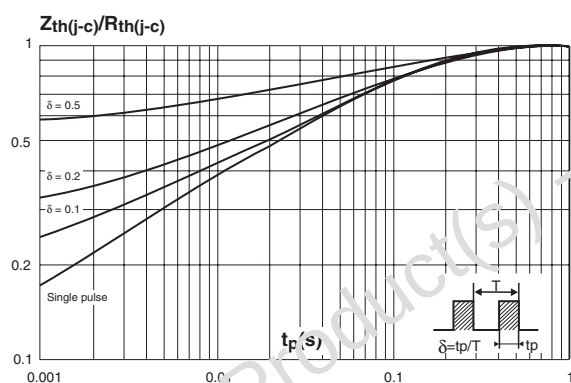


Figure 4: Peak current versus form factor

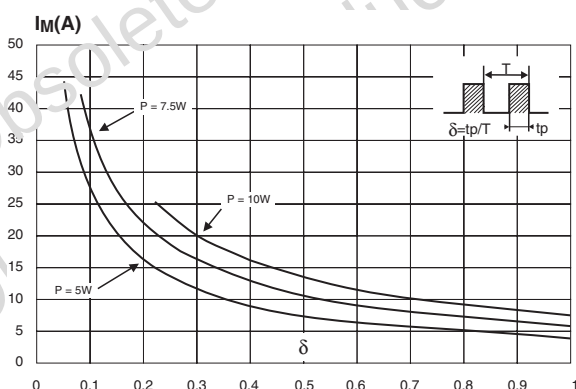


Figure 5: Peak reverse current versus di_F/dt (90% confidence)

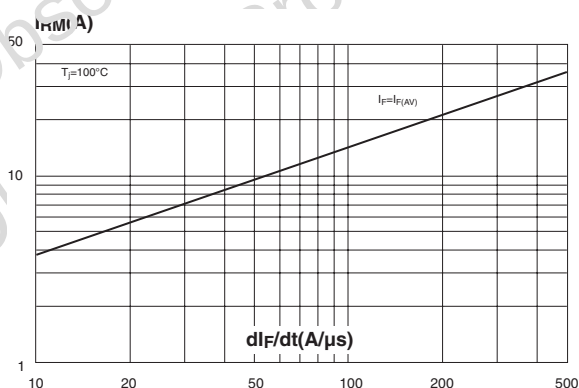


Figure 6: Forward voltage drop versus forward current (maximum values)

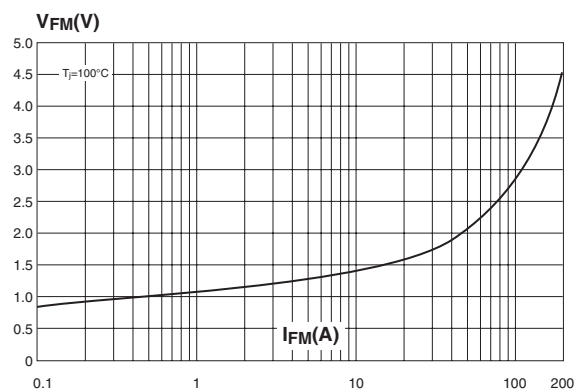


Figure 7: Recovery charges versus di_F/dt (90% confidence)

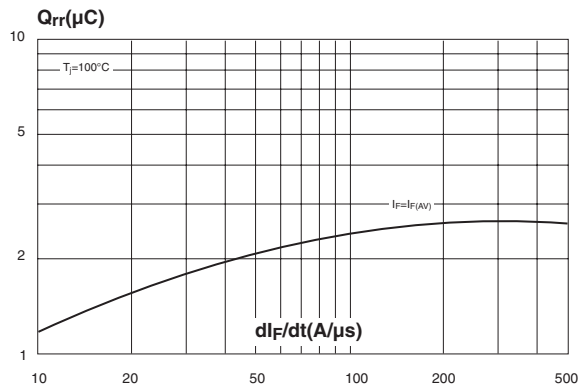


Figure 8: Peak forward voltage versus di_F/dt (90% confidence)

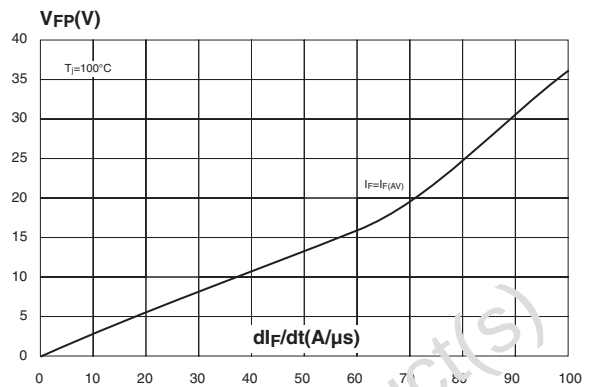


Figure 9: Recovery time versus di_F/dt (90% confidence)

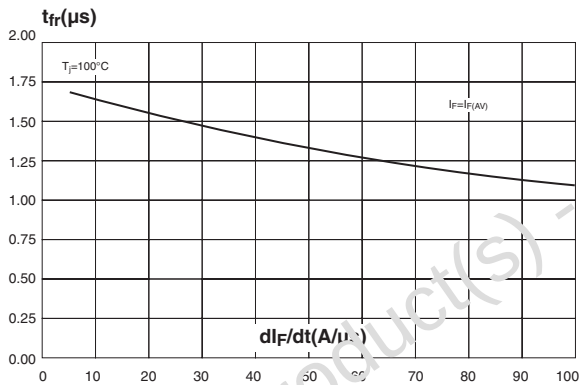


Figure 10: Junction capacitance versus reverse voltage applied (typical values)

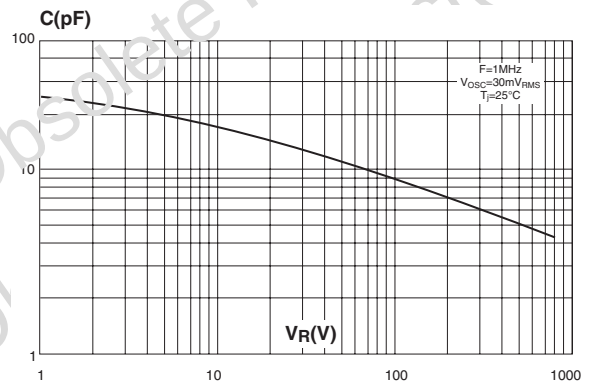


Figure 11: Dynamic parameters versus junction temperature

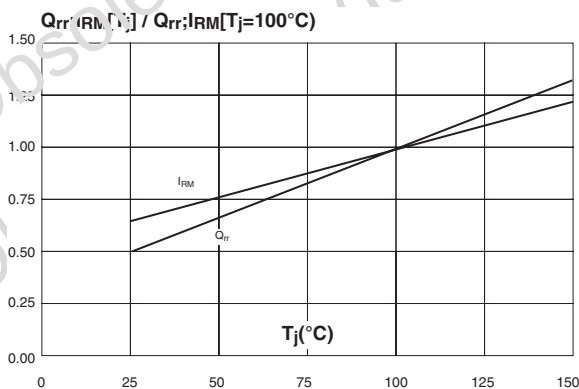


Figure 12: TO-220AC Package Mechanical Data

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	0.181
C	1.23	1.32	0.048	0.051
D	2.40	2.72	0.094	0.107
E	0.49	0.70	0.019	0.027
F	0.61	0.88	0.024	0.034
F1	1.14	1.70	0.044	0.066
G	4.95	5.15	0.194	0.202
H2	10.00	10.40	0.393	0.409
L2	16.40 typ.		0.645 typ.	
L4	13.00	14.00	0.511	0.551
L5	2.65	2.95	0.104	0.116
L6	15.25	15.75	0.600	0.620
L7	6.20	6.60	0.244	0.259
L9	3.50	3.93	0.137	0.154
M	2.6 typ.		0.102 typ.	
Diam. I	3.75	3.85	0.147	0.151

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)
Obsolete Product(s) - Obsolete Product(s)

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics.
All other names are the property of their respective owners

© 2005 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America
www.st.com

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[STMicroelectronics:](#)

[BYT71-800](#)