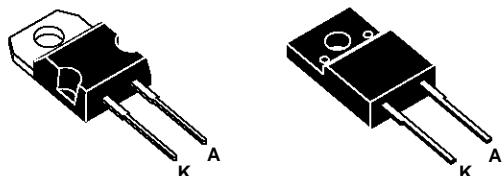


FAST RECOVERY RECTIFIER DIODES

FEATURES

- HIGH VOLTAGE CAPABILITY
- FAST AND SOFT RECOVERY
- INSULATED PACKAGE :
 - insulating voltage = 2000VDC
 - capacitance = 12 pF



DESCRIPTION

Single chip rectifier suited for power conversion and polarity protection applications.

This device is packaged in TO220AC and in ISOWATT220AC.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter			Value	Unit
I _F (RMS)	RMS on-state current			12	A
I _F (AV) δ = 0.5	Average forward current δ = 0.5	TO220AC	T _c =130°C	6	A
		ISOWATT220AC	T _c =105°C	6	
I _{FSM}	Surge non repetitive forward current		t _p =10ms sinusoidal	90	A
T _{stg} T _j	Storage and junction temperature range			- 65 to + 150 - 65 to + 150	°C °C

Symbol	Parameter	BYT71- (F)					Unit
		100	200	400	600	800	
V _{RRM}	Repetitive peak off-state voltage	100	200	400	600	800	V

BYT71(F)-800

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th} (j-c)	Junction to case	TO220AC	2.3
		ISOWATT220AC	4.9

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I _R **	T _j = 25°C	V _R = V _{RRM}			20	μA
	T _j = 100°C				1	mA
V _F *	T _j = 100°C	I _F = 6 A			1.3	V
	T _j = 25°C	I _F = 6 A			1.4	

Pulse test : * tp = 380 μs, duty cycle < 2 %

** tp = 5 ms, duty cycle < 2 %

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
trr	T _j = 25°C	I _F = 1A V _R = 30V	dI _F /dt = -15A/μs		300	ns

To evaluate the conduction losses use the following equations :

$$P = 1.15 \times I_F(AV) + 0.025 \times I_F^2(RMS)$$

Fig.1 : Average forward power dissipation versus average forward current.

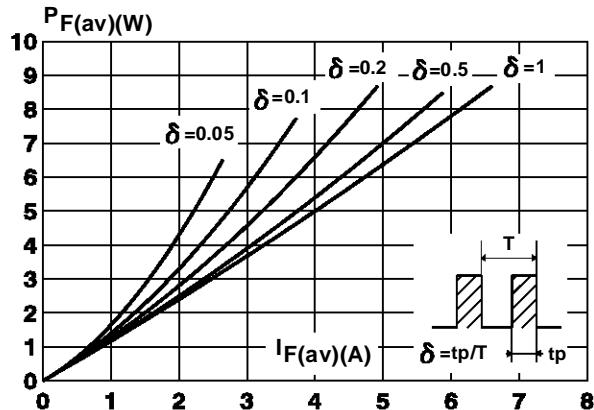


Fig.2 : Peak current versus form factor.

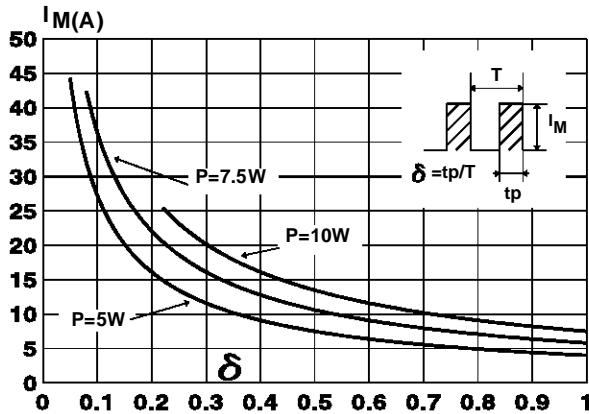


Fig.3 : Forward voltage drop versus forward current (maximum values).

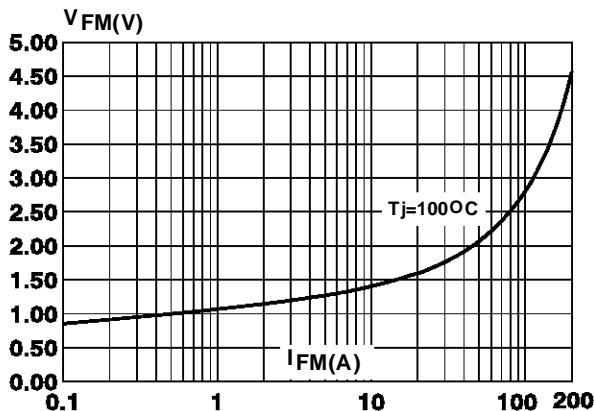


Fig.4 : Relative variation of thermal impedance junction to case versus pulse duration.
(TO 220 AC)

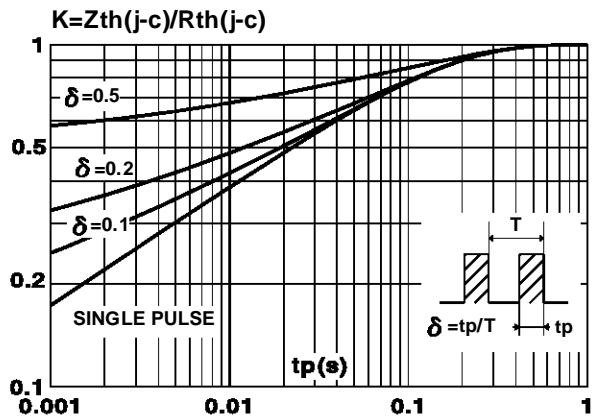
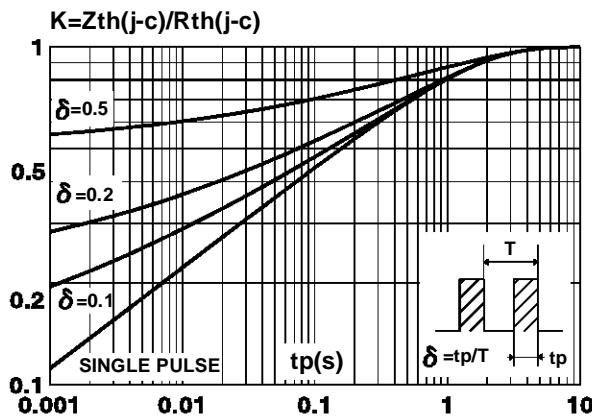


Fig.5 : Relative variation of thermal impedance junction to case versus pulse duration.
(ISOWATT220AC)



BYT71(F)-800

Fig.6 : Non repetitive surge peak forward current versus overload duration.
(TO 220 AB)

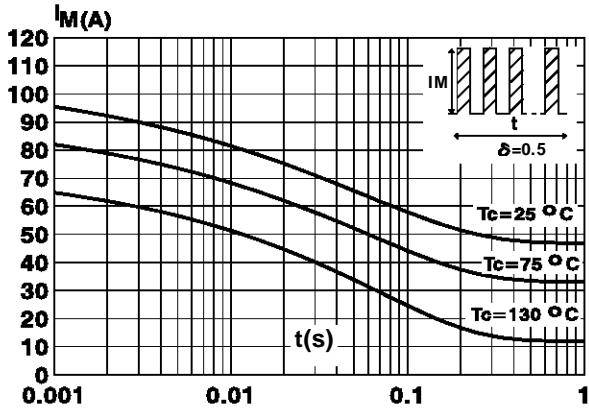


Fig.8 : Average current versus ambient temperature.
(duty cycle : 0.5) (TO 220 AB)

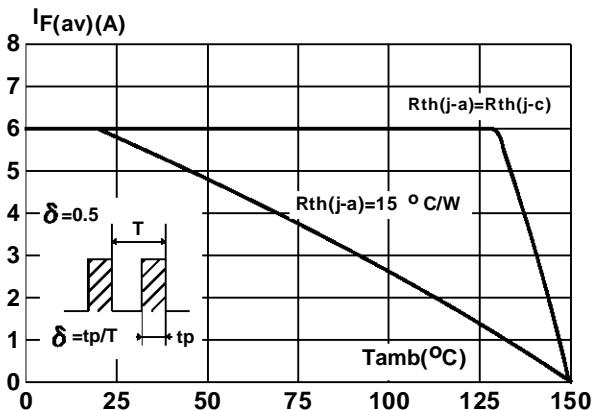


Fig.10 : Junction capacitance versus reverse voltage applied (Typical values).

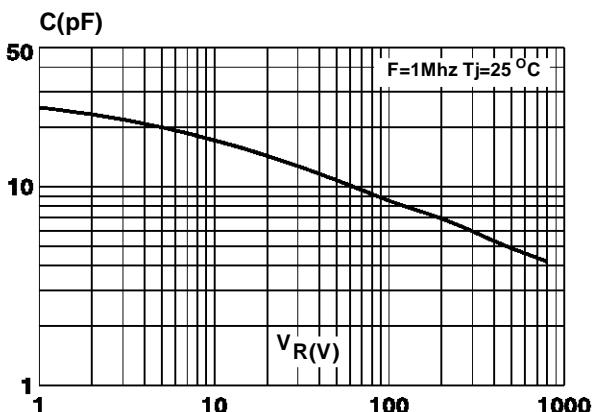


Fig.7 : Non repetitive surge peak forward current versus overload duration.
(ISOWATT220AB)

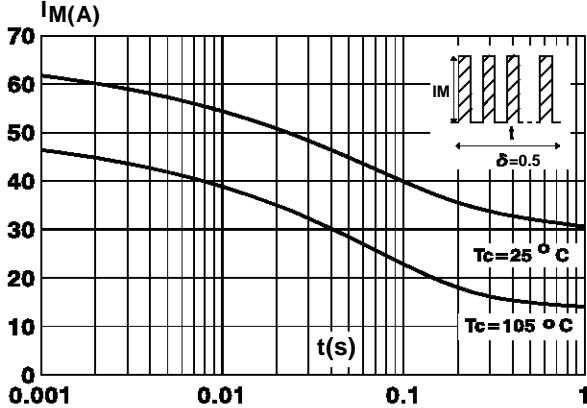


Fig.9 : Average current versus ambient temperature.
(duty cycle : 0.5) (ISOWATT220AB)

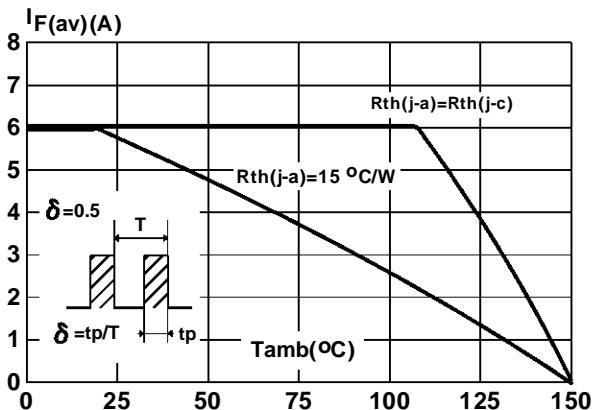


Fig.11 : Recovery charges versus dI_F/dt .

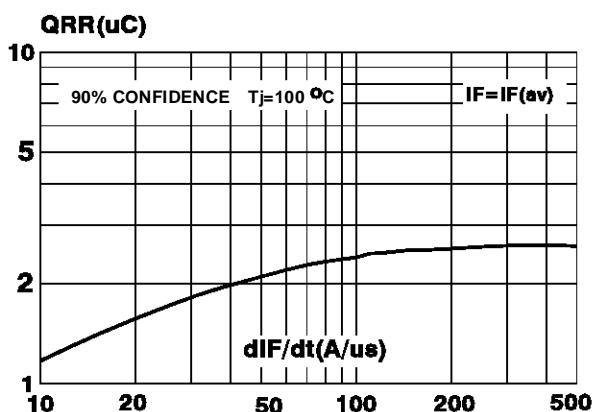


Fig.12 : Peak reverse current versus $dI/F/dt$.

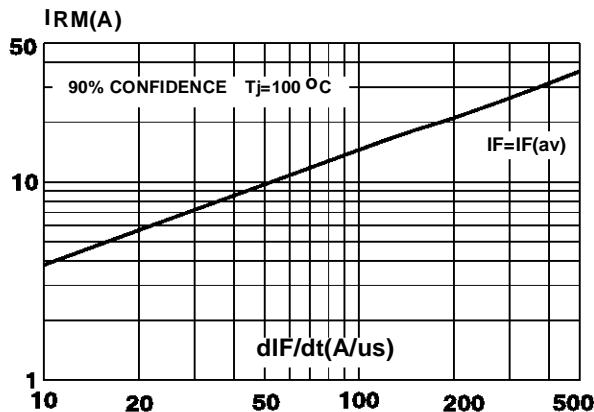


Fig.14 : Peak forward voltage versus $dI/F/dt$.

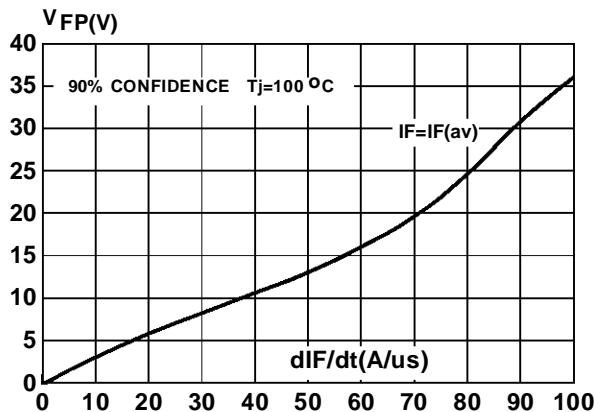


Fig.13 : Dynamic parameters versus junction temperature.

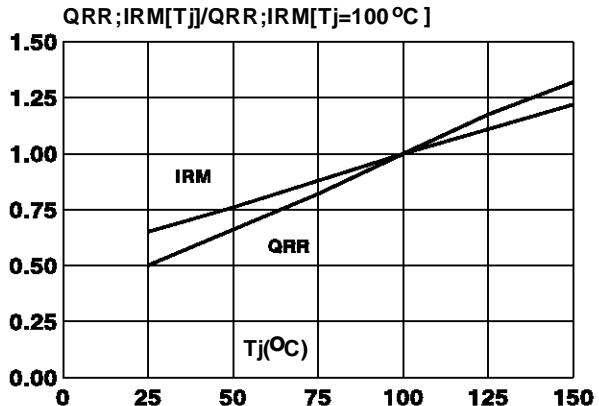
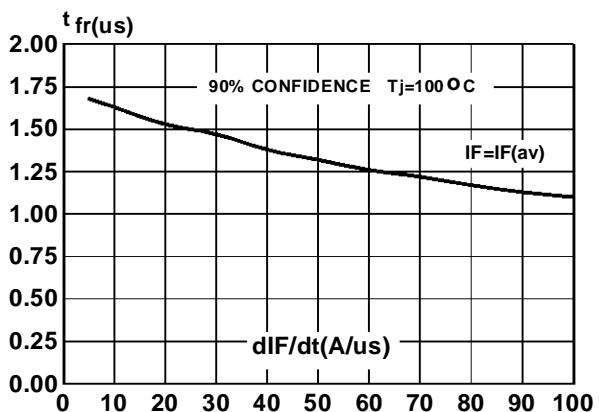


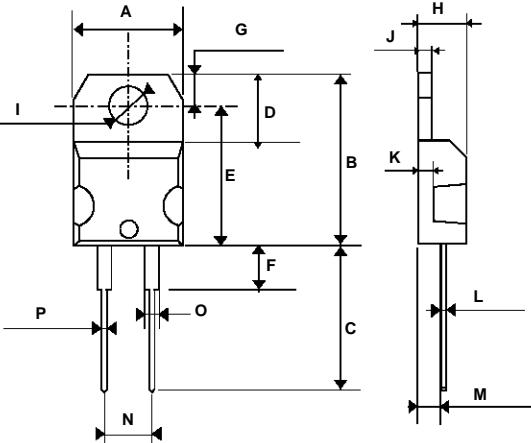
Fig.15 : Recovery time versus $dI/F/dt$.



BYT71(F)-800

PACKAGE MECHANICAL DATA

TO220 AC Plastic



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	9.66	10.66	0.380	0.419
B	15.2	15.9	0.598	0.626
C	13	14	0.511	0.551
D	6.2	6.6	0.244	0.260
E	16.4 typ.		0.645 typ.	
F	3.5	4.2	0.137	0.165
G	2.65	2.95	0.104	0.116
H	4.4	4.6	0.173	0.181
I	3.75	3.85	0.147	0.151
J	1.23	1.32	0.048	0.051
K	1.27 typ.		0.050 typ.	
L	0.49	0.70	0.019	0.027
M	2.4	2.72	0.094	0.107
N	4.95	5.15	0.194	0.203
O	1.14	1.70	0.044	0.067
P	0.61	0.88	0.024	0.034

Cooling method : C

Marking : Type number

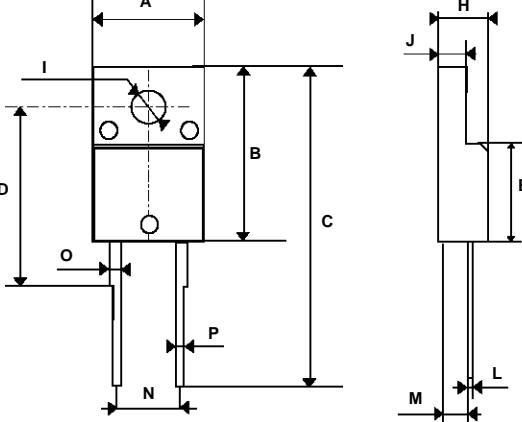
Weight : 1.9 g

Recommended torque value : 0.55m.N

Maximum torque value : 0.70m.N

PACKAGE MECHANICAL DATA

ISOWATT220AC Plastic



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	10	10.4	0.393	0.409
B	15.9	16.4	0.626	0.645
C	28.6	30.6	1.126	1.204
D	16 typ		0.630 typ	
E	9	9.3	0.354	0.366
H	4.4	4.6	0.173	0.181
I	3	3.2	0.118	0.126
J	2.5	2.7	0.098	0.106
L	0.4	0.7	0.015	0.027
M	2.4	2.75	0.094	0.108
N	4.95	5.2	0.195	0.204
O	1.15	1.7	0.045	0.067
P	0.75	1	0.030	0.039

Cooling method : C

Marking : Type number

Weight : 2 g

Recommended torque value : 0.55m.N

Maximum torque value : 0.70m.N

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