

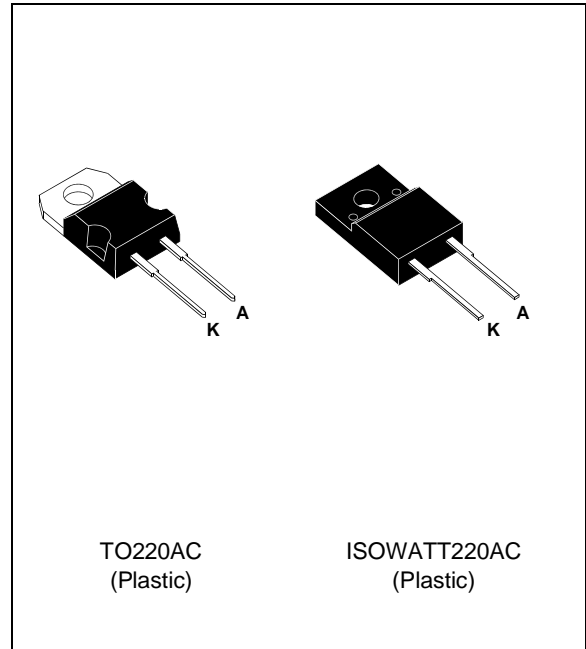
FAST RECOVERY RECTIFIER DIODES

FEATURES

- HIGH VOLTAGE CAPABILITY
- FAST AND SOFT RECOVERY
- INSULATED PACKAGE :
insulating voltage = 2000V_{DC}
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)}	Average forward current $\delta = 0.5$	TO220AC	T _c =130°C	6	A
		ISOWATT220AC	T _c =105°C	6	
I _{FSM}	Surge non repetitive forward current		tp=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
		600	800	
V _{RRM}	Repetitive peak off-state voltage	600	800	V

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
Rth (j-c)	Junction to case	TO220AC	2.3	°C/W
		ISOWATT220AC	4.9	

ELECTRICAL CHARACTERISTICS
STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I _R **	T _j = 25°C	V _R = V _R RM			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.

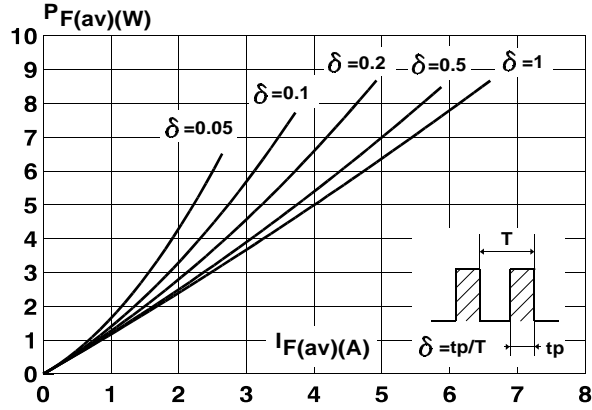


Fig.2 : Peak current versus form factor.

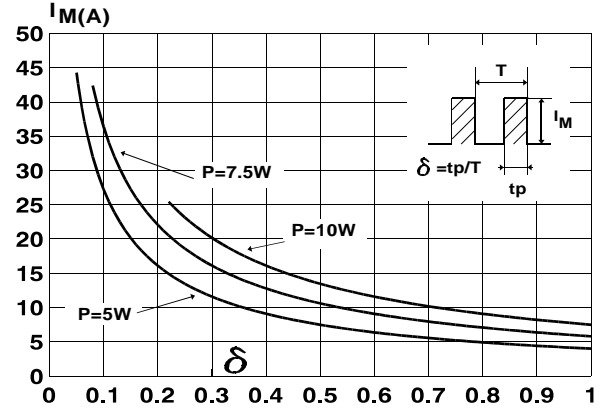


Fig.3 : Forward voltage drop versus forward current (maximum values).

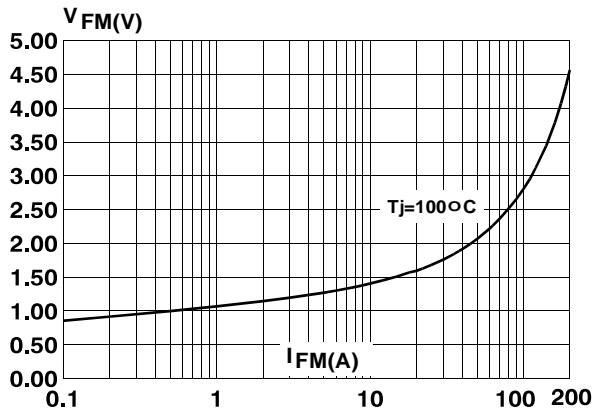


Fig.4 : Relative variation of thermal impedance junction to case versus pulse duration. (TO 220 AC)

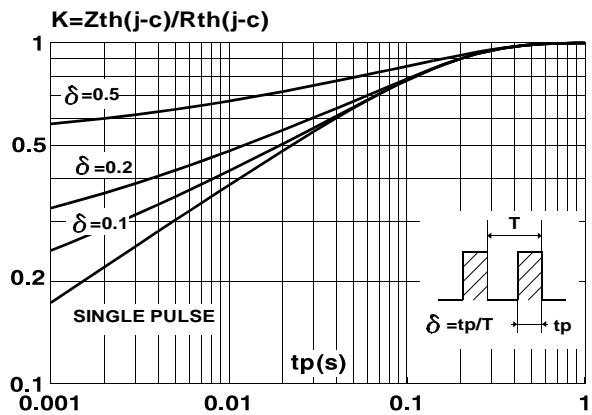


Fig.5 : Relative variation of thermal impedance junction to case versus pulse duration. (ISOWATT220AC)

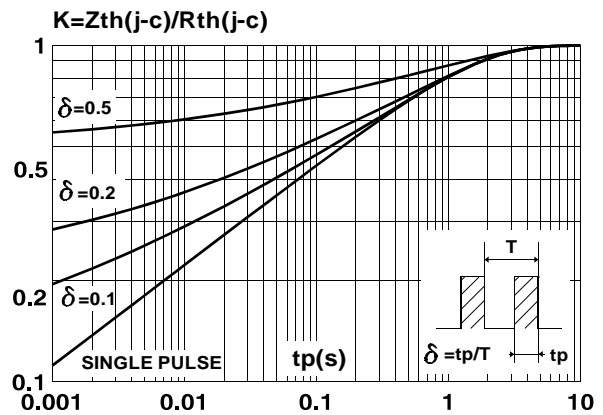


Fig.6 : Non repetitive surge peak forward current versus overload duration. (TO 220 AB)

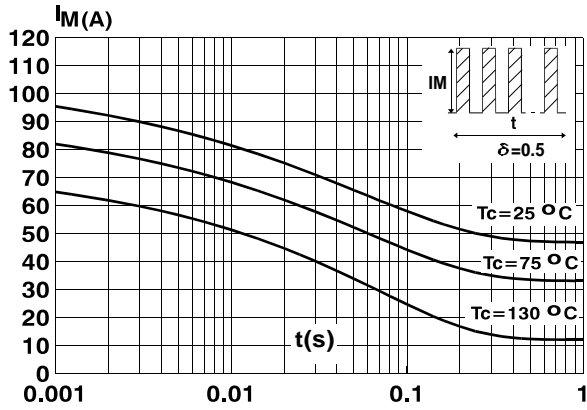


Fig.7 : Non repetitive surge peak forward current versus overload duration. (ISOWATT220AB)

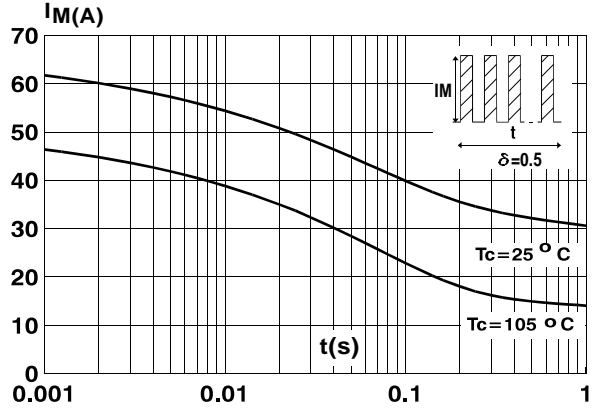


Fig.8 : Average current versus ambient temperature. (duty cycle : 0.5) (TO 220 AB)

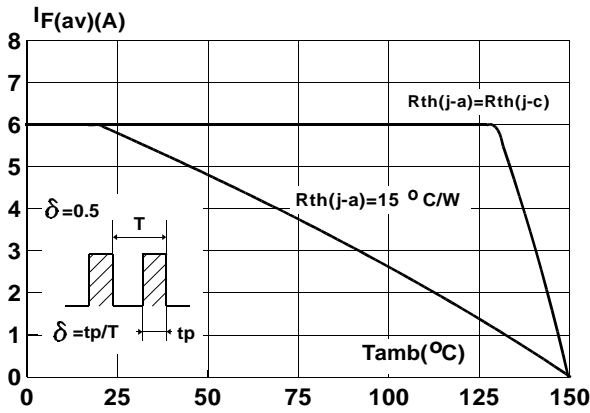


Fig.9 : Average current versus ambient temperature. (duty cycle : 0.5) (ISOWATT220AB)

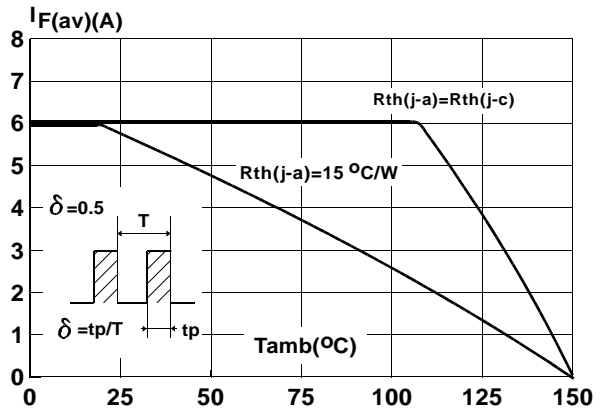


Fig.10 : Junction capacitance versus reverse voltage applied (Typical values).

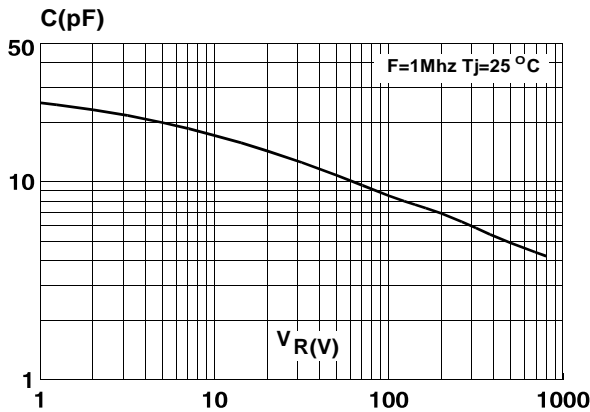


Fig.11 : Recovery charges versus dIF/dt.

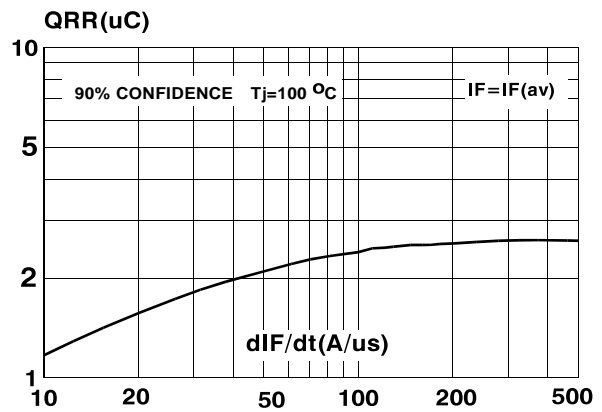


Fig.12 : Peak reverse current versus dIF/dt.

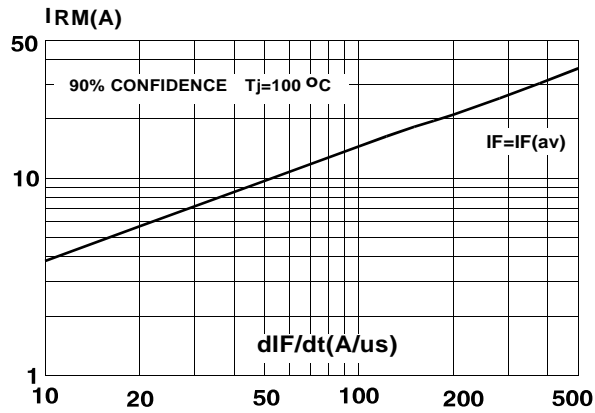


Fig.14 : Peak forward voltage versus dIF/dt.

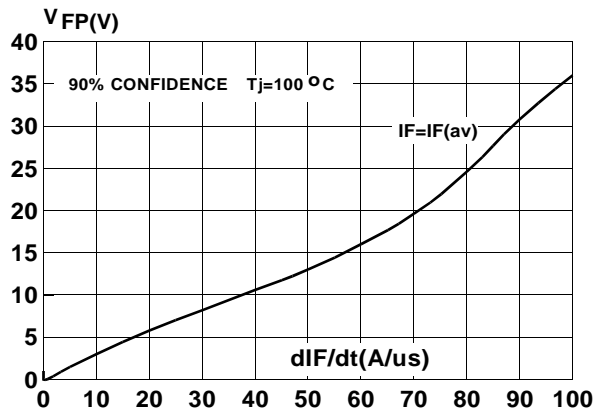


Fig.13 : Dynamic parameters versus junction temperature.

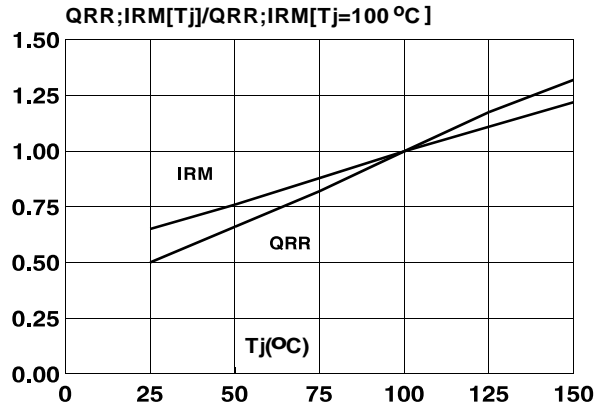
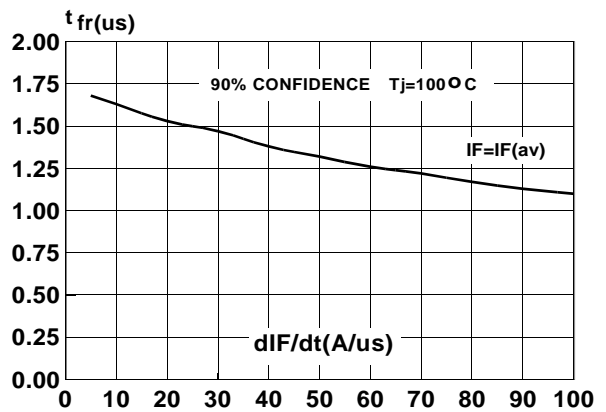
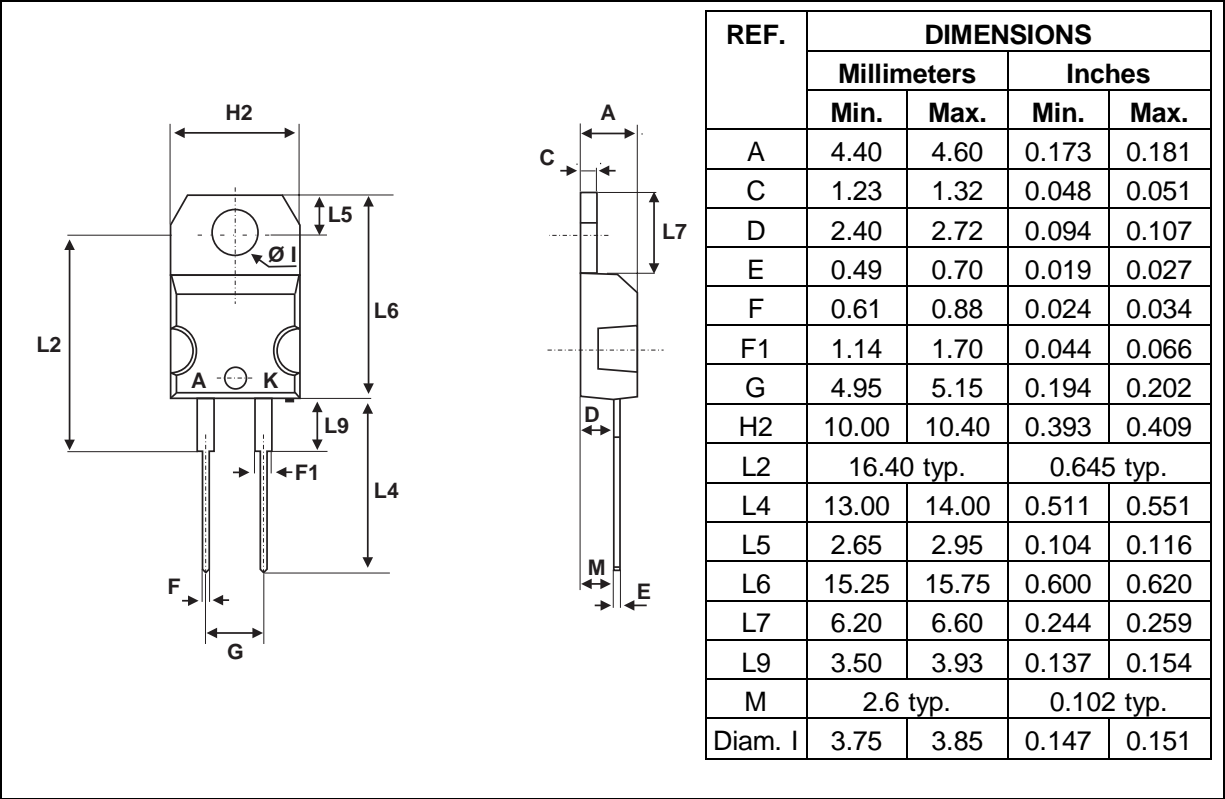


Fig.15 : Recovery time versus dIF/dt.



PACKAGE MECHANICAL DATA

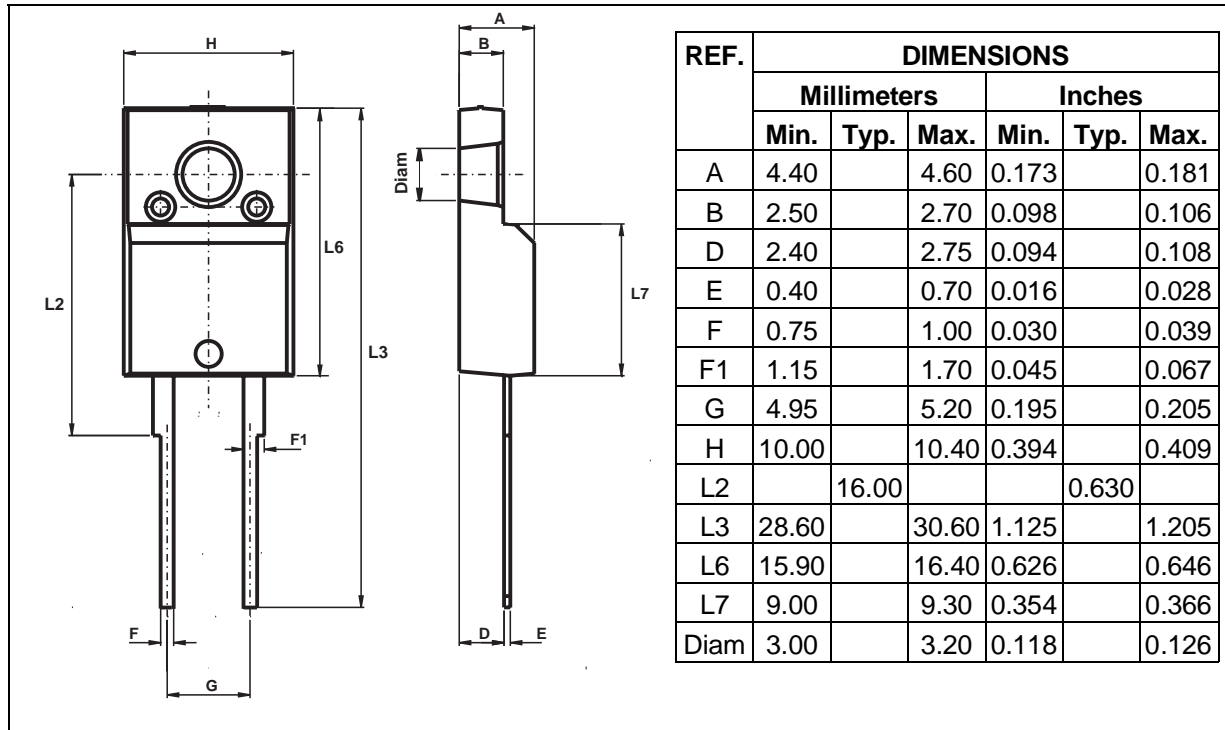
TO220 AC Plastic



- **Marking** : Type number
- **Cooling method** : C
- **Weight** : 1.86 g
- **Recommended torque value** : 0.55m.N
- **Maximum torque value** : 0.70m.N

PACKAGE MECHANICAL DATA

ISOWATT220AC Plastic



- **Marking** : Type number
- **Cooling method** : C
- **Weight** : 2 g
- **Recommended torque value** : 0.55m.N
- **Maximum torque value** : 0.70m.N

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