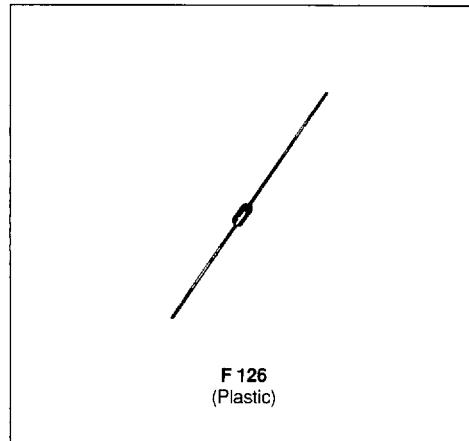


HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS



DESCRIPTION

Low voltage drop rectifiers suited for switching mode base drive and transistor circuits

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
$I_{F\text{RM}}$	Repetitive Peak Forward Current	50	A
$I_F(\text{AV})$	Average Forward Current*	1.5	A
I_{FSM}	Surge non Repetitive Forward Current	50	A
P_{tot}	Power Dissipation*	1.3	W
T_{Stg} T_J	Storage and Junction Temperature Range	- 40 to 150	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case	230	°C

Symbol	Parameter	BYW 100-				Unit
		.50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{\text{th}}(j, a)$	Junction-ambient*	45	°C/W

* On infinite heatsink with 10mm lead length

ELECTRICAL CHARACTERISTICS**STATIC CHARACTERISTICS**

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I _R	T _J = 25°C	V _R = V _{RRM}			10	μA
	T _J = 100°C				0.5	mA
V _F	T _J = 25°C	I _F = 4.5A			1.2	V
	T _J = 100°C	I _F = 1.5A			0.85	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t _{rr}	T _J = 25°C V _R = 30V	I _F = 1A See figure 10	dI _F /dt = - 50A/μs			35	ns
Q _{rr}	T _J = 25°C V _R ≤ 30V	I _F = 1A	dI _F /dt = - 20A/μs		10		nC
t _{fr}	T _J = 25°C Measured at 1.1 x V _F	I _F = 1A	t _r = 10ns		30		ns
V _{FP}	T _J = 25°C	I _F = 1A	t _r = 10ns		5		V

To evaluate the conduction losses use the following equations :

$$V_F = 0.66 + 0.075 I_F$$

$$P = 0.06 \times I_{F(AV)} + 0.075 I_F^2 (\text{RMS})$$

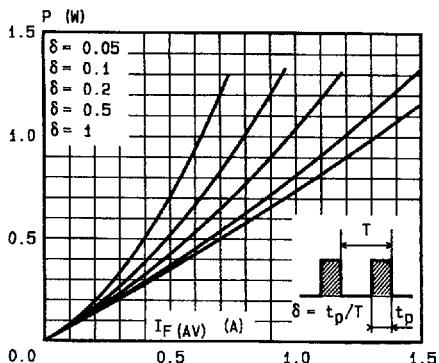


Fig.1 - Maximum average power dissipation versus average forward current.

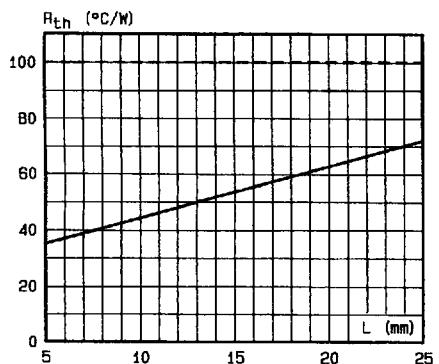


Fig.3 - Thermal resistance versus lead length.

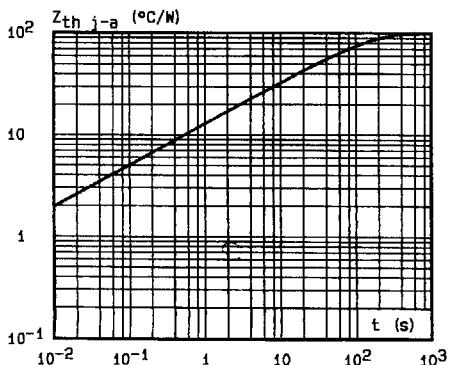


Fig.4 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration ($L = 10$ mm).

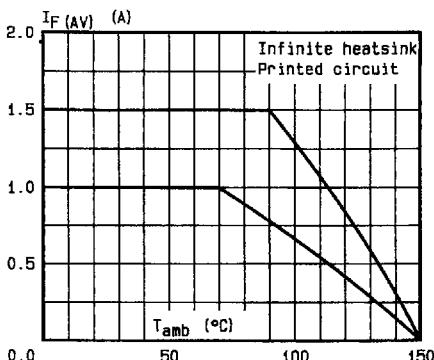


Fig.2 - Average forward current versus ambient temperature.

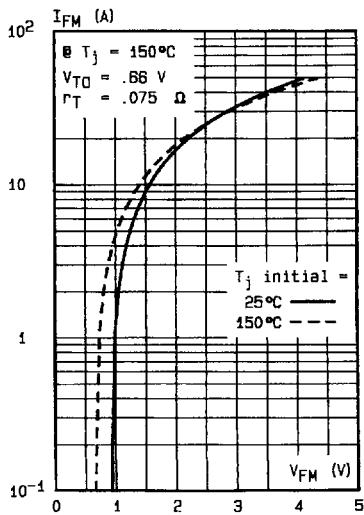
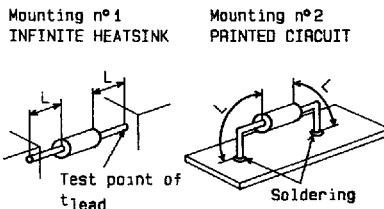


Fig.5 - Peak forward current versus peak forward voltage drop (maximum values).

■ 7929237 0059873 663 ■

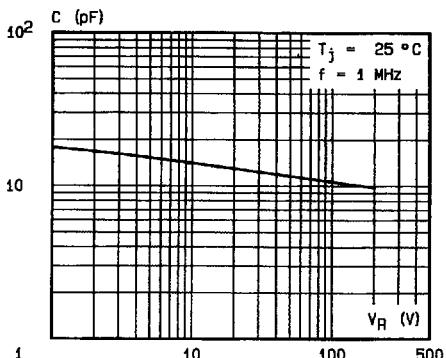


Fig.6 - Capacitance versus reverse voltage applied.

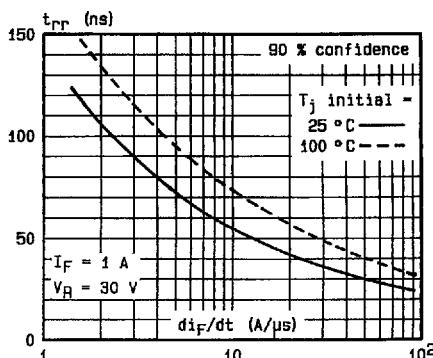


Fig.7 - Recovery time versus dI/dt .

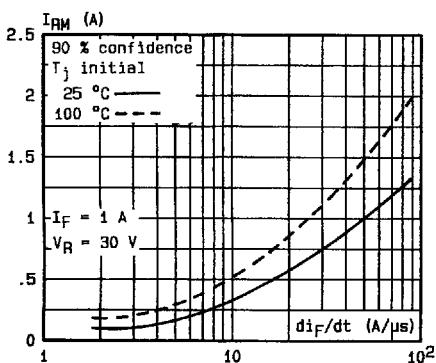


Fig.8 - Peak reverse current versus dI/dt .

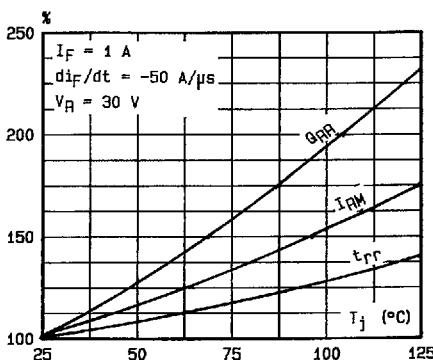


Fig.9 - Dynamic parameters versus junction temperature.

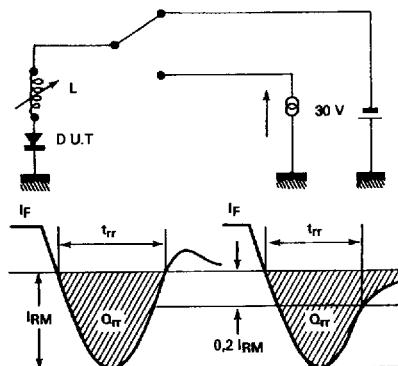


Fig.10 - Measurement of t_{rr} (Fig.7) and I_{RM} (Fig.8).