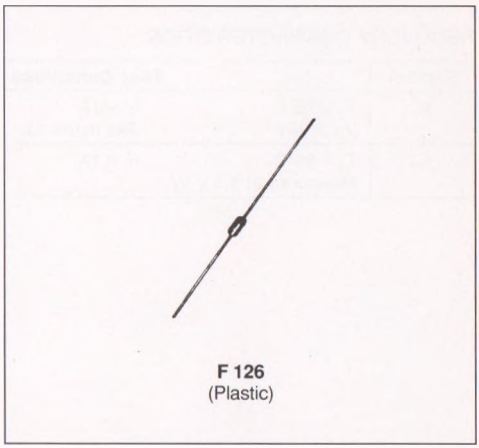
SGS-THOMSON MICROELECTRONICS

PLQ 08
PLQ 1

FAST RECOVERY RECTIFIER DIODES

- VERY FAST FORWARD AND REVERSE RECOVERY DIODES



F 126
(Plastic)

SUITED FOR

- SWITCHING POWER TRANSISTORS DRIVER CIRCUITS (SERIES DIODES IN ANTISATURATION CLAMP SPEED UP DIODE IN DISCRETE DARLINGTON...)
- THYRISTORS GATE DRIVER CIRCUITS
- HIGH FREQUENCY RECTIFICATION

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	20	A
$I_{F(AV)}$	Average Forward Current	$T_a = 25°C$ $\delta = 0.5$	1	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	20	A
P_{tot}	Power Dissipation*	$T_a = 25°C$	1.7	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 125	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

Symbol	Parameter	PLQ 08	PLQ 1	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	80	100	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	80	100	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction-ambient*	60	°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 = 1A			1.1	V

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A See figure 12	di_F/dt = – 50A/µs			50	ns
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 20ns			50	ns

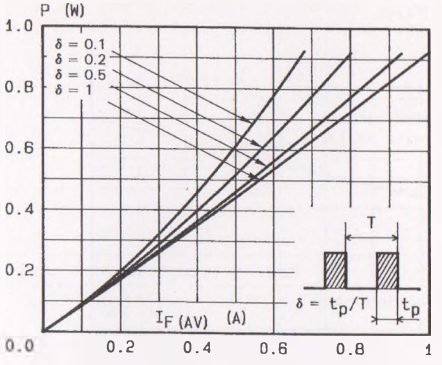


FIGURE 1 : Power losses versus average current.

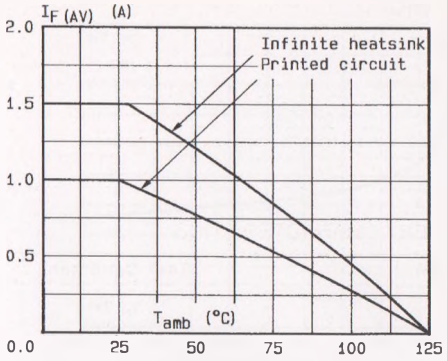


FIGURE 2 : Allowable DC current versus ambient temperature.

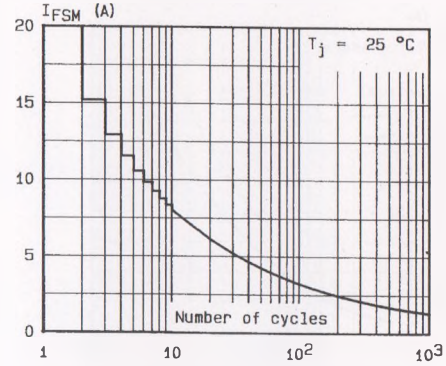


FIGURE 3 : Non repetitive surge peak current versus number of cycles.

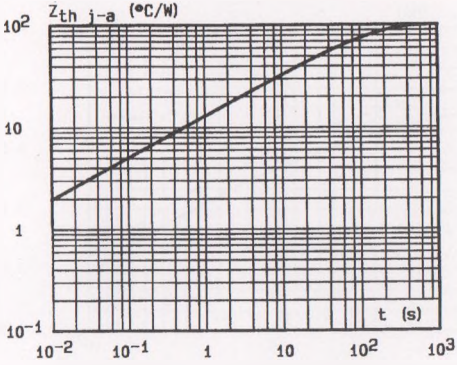


Fig.4 - Transient thermal impedance junction-ambient versus pulse duration (L = 10 mm). Printed circuit

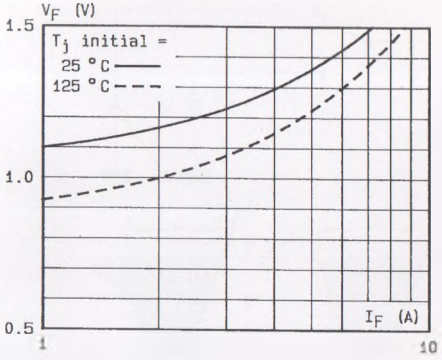


FIGURE 5 : Voltage drop versus forward current.

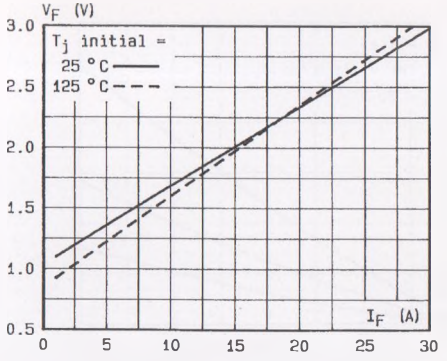


FIGURE 6 : Voltage drop versus forward current.

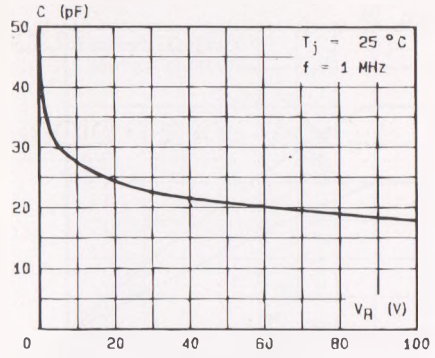


FIGURE 7 : Capacitance versus reverse voltage applied.

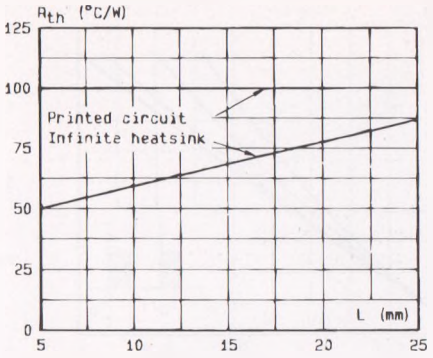


FIGURE 8 : Thermal resistance junction-ambient versus lead length.

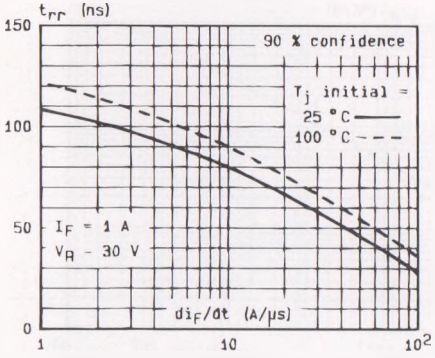


FIGURE 9 : Recovery time versus di_F/dt.

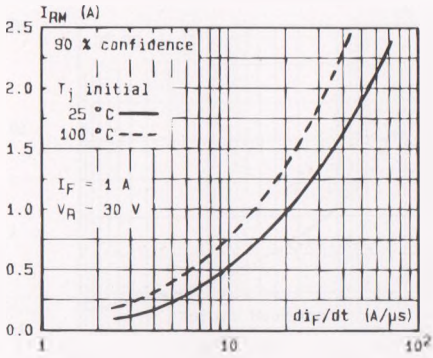


FIGURE 10 : Peak reverse current versus di_F/dt.

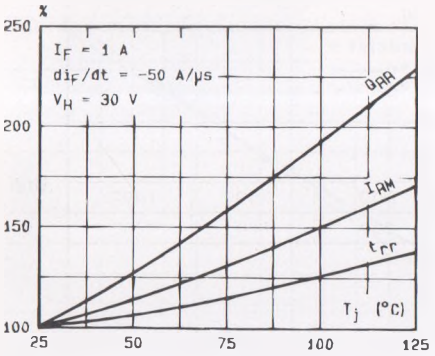


FIGURE 11 : Dynamic parameters versus junction temperature.

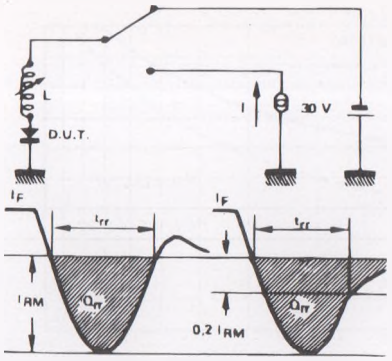


FIGURE 12 : Measurement of t_{rr} (fig.9) and I_{RM} (fig.10).