SGS-THOMSON MICROELECTRONICS

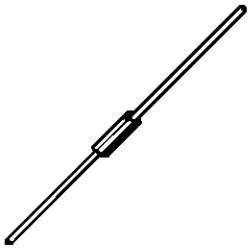
STSR220

HIGH EFFICIENCY SWITCHED MODE RECTIFIER

PRELIMINARY DATASHEET

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	**2 A**
V_{RRM}	**200 V**
V_F **(max)**	**0.8 V**



F126
(Plastic)

FEATURES AND BENEFITS

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT

DESCRIPTION

Low voltage drop rectifiers suited for Switched Mode Power Supplies and for switching mode base drive and transistor circuits.

ABSOLUTE MAXIMUM RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		220	V
I_{FRM}	Repetive Peak Forward Current	$t_p \leq 20\mu s$	70	A
$I_{F(AV)}$	Average Forward Current*	$T_{a=}$ 75°C $\delta = 0.5$	2	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoidal	70	A
P_{tot}	Power Dissipation *	$T_{a=}$ 75°C	1.85	W
T_{stg} T_j	Storage Temperature Range Max. Junction Temperature		- 40 to + 150 + 150	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

* On infinite heatsink with 10mm lead length.

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j\ -\ a)}$	Junction to ambient thermal resistance *	40	°C/W

* On infinite heatsink with 10mm lead length.

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_R	Reverse leakage current	$V_R = V_{RRM}$	T_j = 25°C			10	µA
			T_j = 100°C			0.5	mA
V_F	Forward voltage drop	I_F = 2A	T_j = 25°C			1	V
		I_F = 2A	T_j = 100°C			0.8	

RECOVERY CHARACTERISTICS

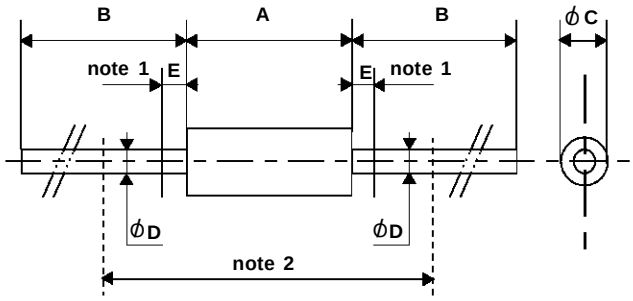
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	di_F/dt = - 50A/µs			35	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	di_F/dt = - 20A/µs		12		nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 10ns		20		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 10ns		5		V

To evaluate the conduction losses use the following equation:

$P = 0.68 \times I_{F(AV)} + 0.06\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

F126 (Plastic)



REF.	DIMENSIONS				NOTES
	Millimeters		Inches		
	Min.	Max.	Min.	Max.	
A	6.05	6.35	0.238	0.250	1 - The lead diameter ∅ D is not controlled over zone E 2 - The minimum axial lengh within which the device may be placed with its leads bent at right angles is 0.59”(15 mm)
B	26		1.024		
∅ C	2.95	3.05	0.116	0.120	
∅ D	0.76	0.86	0.029	0.034	
E		1.27		0.050	

Cooling method: by convection (method A)
Marking: type number; ring at cathode end
Weight: 0.4g