

## HIGH EFFICIENCY SWITCHED MODE RECTIFIER

PRELIMINARY DATASHEET

### MAIN PRODUCT CHARACTERISTICS

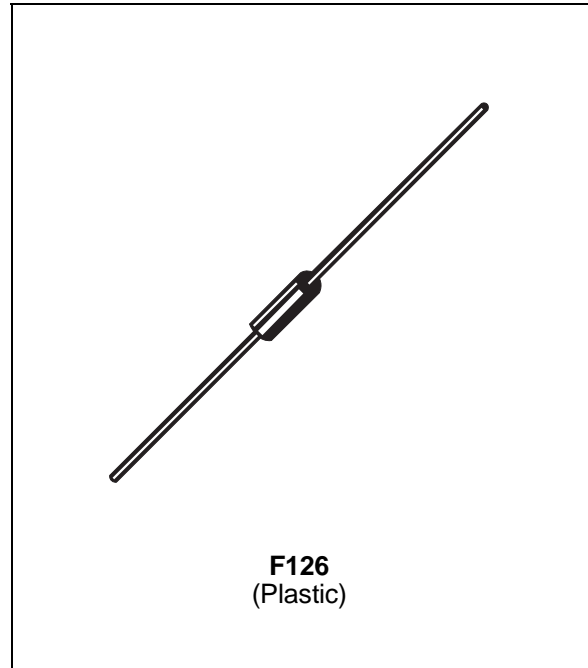
$I_{F(AV)}$	<b>2A</b>
$V_{RRM}$	<b>200V</b>
$V_F(max)$	<b>0.8V</b>

### 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 circuit.



### ABSOLUTE 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	$t_p < 20\mu s$	70	A
$I_{F(AV)}$	Average forward current *	$T_a = 75^\circ C$ $\delta = 0.5$	2	A
$I_{FSM}$	Surge non repetitive forward current	$t_p = 10ms$ Sinusoidal	70	A
$P_{tot}$	Power dissipation *	$T_a = 75^\circ C$	1.85	W
$T_{stg}$ $T_j$	Storage temperature range Maximum junction temperature		- 40 to + 150 150	$^\circ C$
$T_L$	Maximum lead temperature for soldering during 10s at 4mm from case		230	$^\circ C$

\* On infinite heatsink with 10mm lead length

## STSR220

### 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.

### STATIC ELECTRICAL CHARACTERISTICS

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

### RECOVERY CHARACTERISTICS

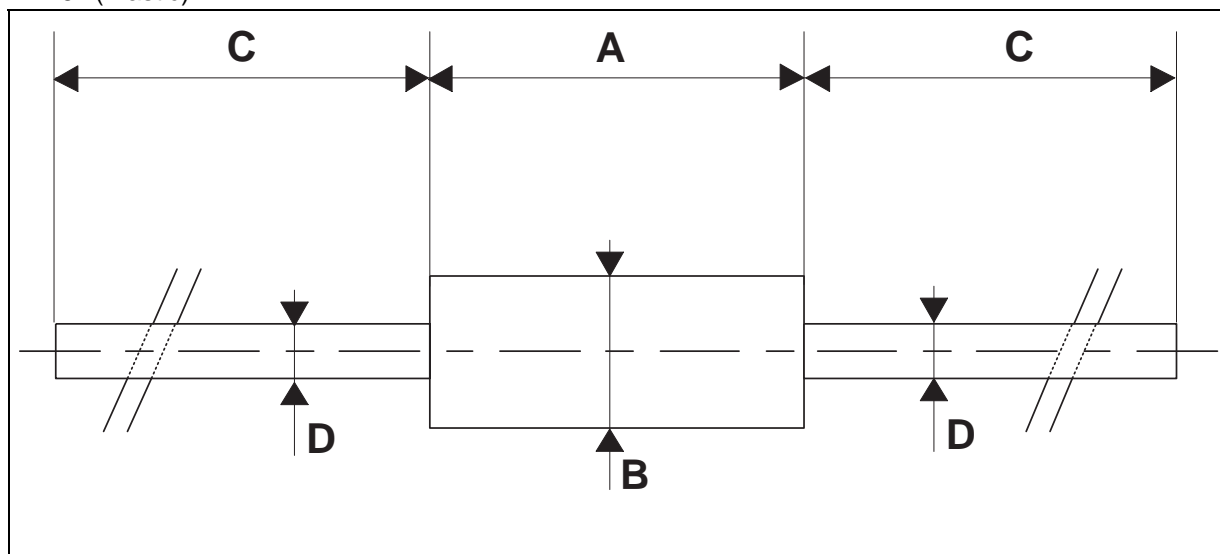
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$t_{rr}$	$T_j = 25^\circ\text{C}$ $V_R = 30\text{V}$	$I_F = 1\text{A}$	$di_F/dt = -50\text{A}/\mu\text{s}$			35	ns
$Q_{rr}$	$T_j = 25^\circ\text{C}$ $V_R < 30\text{V}$	$I_F = 2\text{A}$	$di_F/dt = -20\text{A}/\mu\text{s}$		12		nC
$t_{fr}$	$T_j = 25^\circ\text{C}$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

To evaluate the conduction losses use the following equation:

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

## PACKAGE MECHANICAL DATA

F126 (Plastic)



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.05	6.20	6.35	0.238	0.244	0.250
B	2.95	3.00	3.05	0.116	0.118	0.120
C	26		31	1.024		1.220
D	0.76	0.81	0.86	0.030	0.032	0.034

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

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