

## POWER SCHOTTKY RECTIFIER

### MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	30 A
$V_{RRM}$	45 V
$V_F$	0.63 V

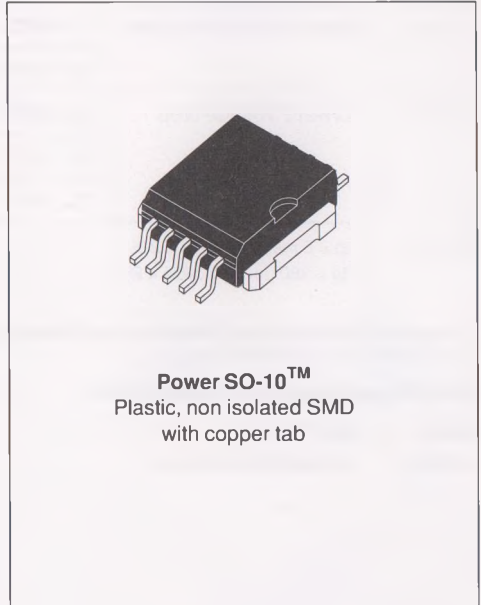
### FEATURES AND BENEFITS

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- HIGH AVALANCHE CAPABILITY
- HIGH DISSIPATION MINIATURE PACKAGE
- SURFACE MOUNT TECHNOLOGY COMPATIBLE

### DESCRIPTION

Dual schottky rectifier suited for switchmode power supply and high frequency DC to DC converters.

Packaged in a high performance surface mount package PSO-10, this device is intended for use in low voltage, high frequency inverters, free wheeling and polarity protection applications.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{RRM}$	Repetitive Peak Reverse Voltage	45	V
$I_{F(RMS)}$	RMS Forward Current (All pins connected)	44	A
$I_{F(AV)}$	Average Forward Current	$T_c = 125^\circ\text{C}$ $\delta = 0.5$	A
$I_{FSM}$	Surge Non Repetitive Forward Current (All pins connected)	$t_p = 10\text{ ms}$ Sinusoidal	A
$I_{RRM}$	Repetitive Peak Reverse Current	$t_p = 2\ \mu\text{s}$ $F = 1\text{ KHz}$	A
$T_{stg}$ $T_j$	Storage and Junction Temperature Range	- 65 to + 150	$^\circ\text{C}$
$dV/dt$	Critical Rate of Rise of Reverse Voltage	1000	V/ $\mu\text{s}$

TM : PowerSO-10 is a trademark of SGS-THOMSON Microelectronics.

**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
$R_{TH(j-c)}$	Junction to Case Thermal Resistance	1.0	$^{\circ}C/W$

**STATIC ELECTRICAL CHARACTERISTICS (Per diode)**

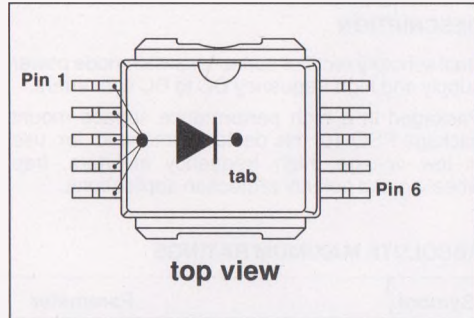
Symbol	Tests Conditions	Tests Conditions	Min.	Typ.	Max.	Unit	
$I_R^*$	Reverse leakage Current	$T_j = 25^{\circ}C$	$V_R = V_{RRM}$		500	$\mu A$	
		$T_j = 125^{\circ}C$				80	mA
$V_F^{**}$	Forward Voltage drop	$T_j = 125^{\circ}C$	$I_F = 60 A$		0.78	V	
		$T_j = 125^{\circ}C$	$I_F = 30 A$				0.63
		$T_j = 25^{\circ}C$	$I_F = 60 A$				0.84

Pulse test : \*  $t_p = 5 \text{ ms}$ , duty cycle  $< 2\%$   
 \*\*  $t_p = 380 \mu s$ , duty cycle  $< 2\%$

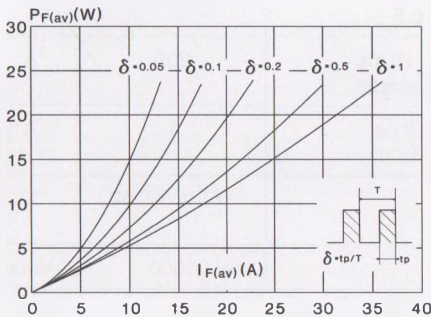
To evaluate the conduction losses use the following equation :  
 $P = 0.48 \times I_{F(AV)} + 0.005 I_F^2 (RMS)$

**PIN OUT configuration in PowerSO-10 :**

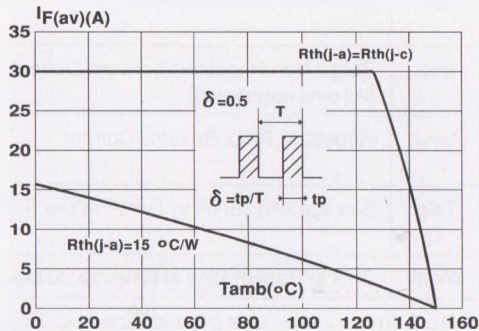
Anode = pin 1 to 5  
 Cathode = connected to base tab



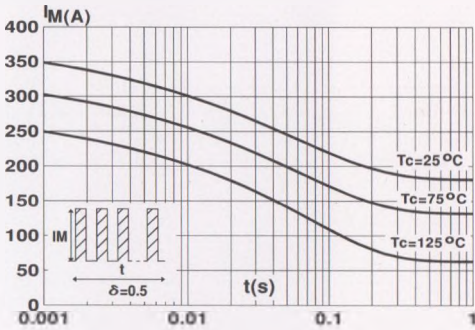
**Fig. 1 :** Average forward power dissipation versus average forward current.



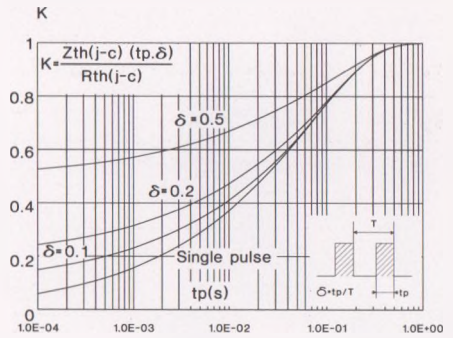
**Fig. 2 :** Average current versus ambient temperature. (duty cycle : 0.5)



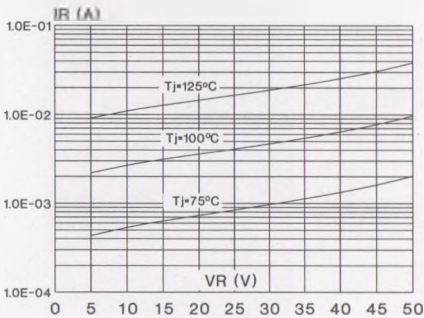
**Fig. 3 :** Non repetitive surge peak forward current versus overload duration. (Maximum values)



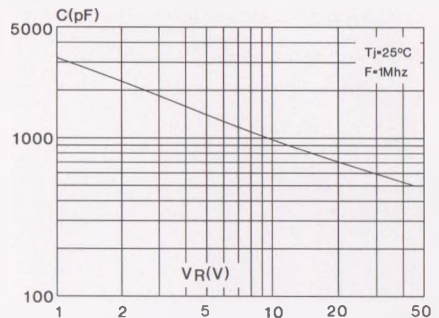
**Fig. 4 :** Relative variation of thermal transient impedance junction to case versus pulse duration.



**Fig. 5 :** Reverse leakage current versus reverse voltage applied. (Typical values)



**Fig. 6 :** Junction capacitance versus reverse voltage applied. (Typical values)



**Fig. 7 :** Forward voltage drop versus forward current. (Maximum values)

