

POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

I_{F(AV)}	7.5 A
V_{RRM}	45 V
V_F	0.57 V

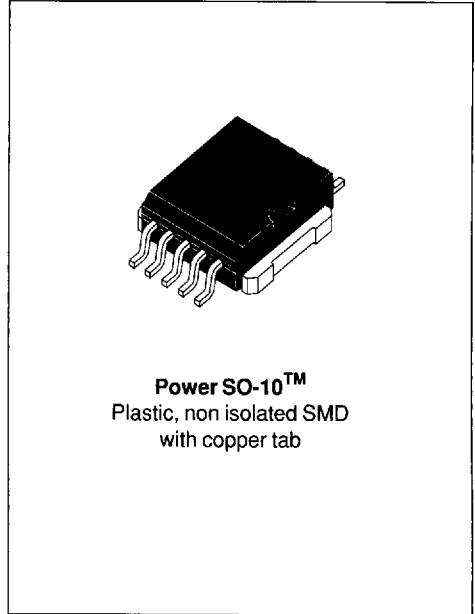
FEATURES AND BENEFITS

- 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)		17	A
I _{F(AV)}	Average Forward Current	T _c = 135°C δ = 0.5	7.5	A
I _{FSM}	Surge Non Repetitive Forward Current (All pins connected)	t _p = 10 ms Sinusoidal	150	A
I _{RRM}	Repetitive Peak Reverse Current	t _p = 2 μs F = 1KHz	1	A
T _{stg} T _J	Storage and Junction Temperature Range		- 65 to + 150	°C
dV/dt	Critical Rate of Rise of Reverse Voltage		1000	V/μs

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	3.0	$^{\circ}C/W$

STATIC ELECTRICAL CHARACTERISTICS (Per diode)

Symbol	Tests Conditions	Tests Conditions	Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage Current	$T_j = 25^{\circ}C$	$V_R = V_{RRM}$		100	μA
		$T_j = 125^{\circ}C$			15	mA
V_F^{**}	Forward Voltage drop	$T_j = 125^{\circ}C$	$I_F = 15 A$		0.72	V
		$T_j = 125^{\circ}C$	$I_F = 7.5 A$		0.57	
		$T_j = 25^{\circ}C$	$I_F = 15 A$		0.84	

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

To evaluate the conduction losses use the following equation :
 $P = 0.42 \times I_{F(AV)} + 0.020 I_{F(RMS)}^2$

PIN OUT configuration in PowerSO-10 :

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

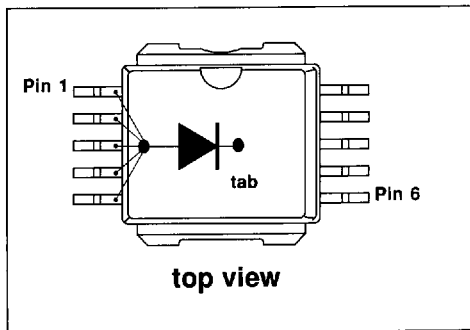


Fig. 1 : Average forward power dissipation versus average forward current.

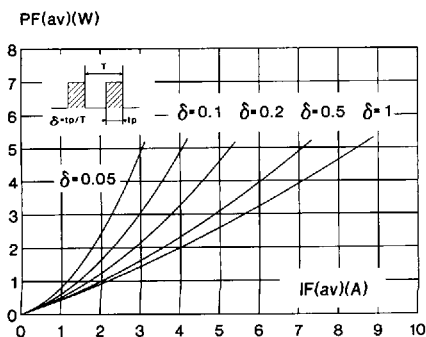


Fig. 2 : Average current versus ambient temperature. (duty cycle : 0.5)

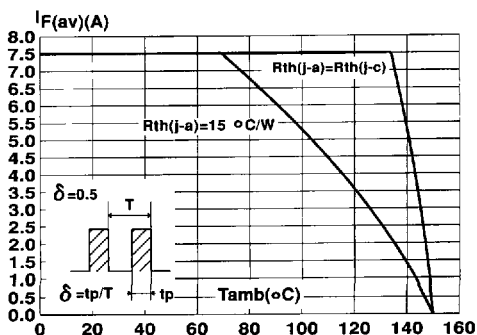


Fig. 3 : Non repetitive surge peak forward current versus overload duration. (Maximum values)

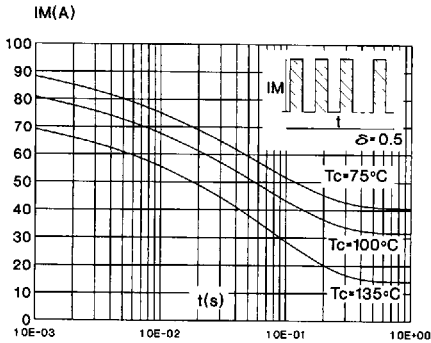


Fig. 5 : Reverse leakage current versus reverse voltage applied. (Typical values)

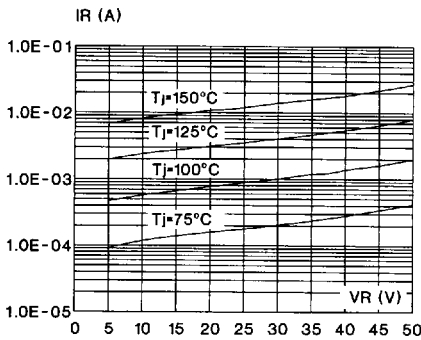


Fig. 7 : Forward voltage drop versus forward current. (Maximum values)

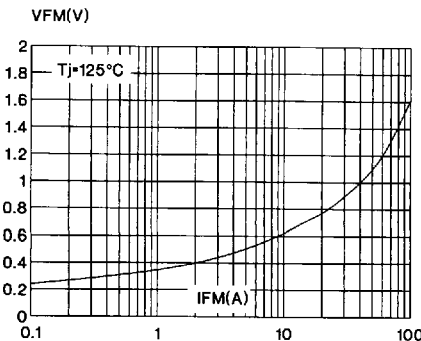


Fig. 4 : Relative variation of thermal transient impedance junction to case versus pulse duration.

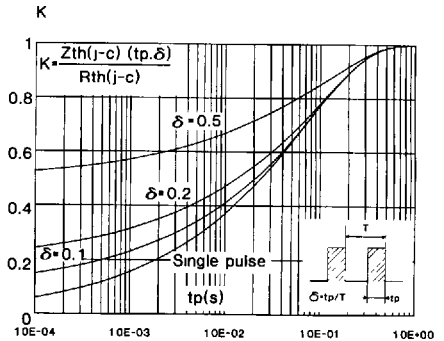


Fig. 6 : Junction capacitance versus reverse voltage applied. (Typical values)

