

POWER SCHOTTKY RECTIFIER
MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	10 A
V_{RRM}	45 V
V_F	0.57 V

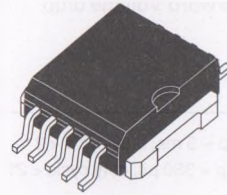
FEATURES AND BENEFITS

- 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.



Power SO-10™
 Plastic, non isolated SMD
 with copper tab

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		45	V
$I_{F(RMS)}$	RMS Forward Current (All pins connected)		27	A
$I_{F(AV)}$	Average Forward Current	$T_c = 135^\circ\text{C}$ $\delta = 0.5$	10	A
I_{FSM}	Surge Non Repetitive Forward Current (All pins connected)	$t_p = 10 \text{ ms}$ Sinusoidal	180	A
I_{RRM}	Repetitive Peak Reverse Current	$t_p = 2 \mu\text{s}$ $F = 1 \text{ KHz}$	1	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/ 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	2.2	°C/W

STATIC ELECTRICAL CHARACTERISTICS (Per diode)

Symbol	Tests Conditions	Tests Conditions	Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage Current	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$		100	μA
		$T_j = 125^\circ\text{C}$			15	mA
V_F^{**}	Forward Voltage drop	$T_j = 125^\circ\text{C}$	$I_F = 20\text{ A}$		0.72	V
		$T_j = 125^\circ\text{C}$	$I_F = 10\text{ A}$		0.57	
		$T_j = 25^\circ\text{C}$	$I_F = 20\text{ A}$		0.84	

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

To evaluate the conduction losses use the following equation :

$$P = 0.42 \times I_{F(AV)} + 0.015 I_{F(RMS)}^2$$

PIN OUT configuration in PowerSO-10 :

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

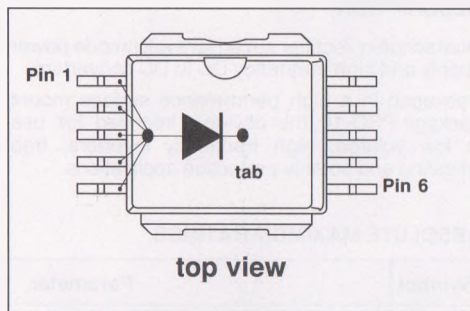


Fig. 1 : Average forward power dissipation versus average forward current.

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

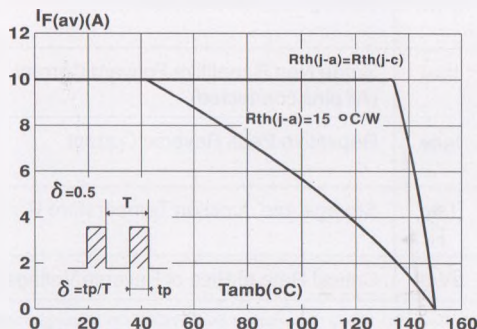
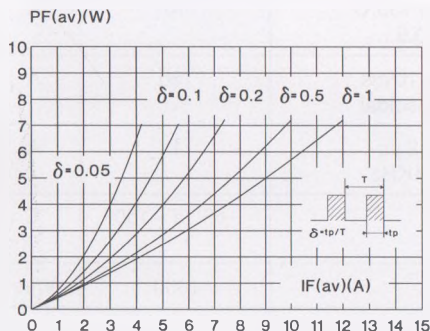


Fig. 3 : Non repetitive surge peak forward current versus overload duration. (Maximum values)

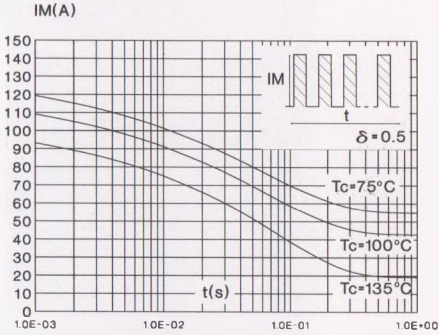


Fig. 4 : Relative variation of thermal transient impedance junction to case versus pulse duration.

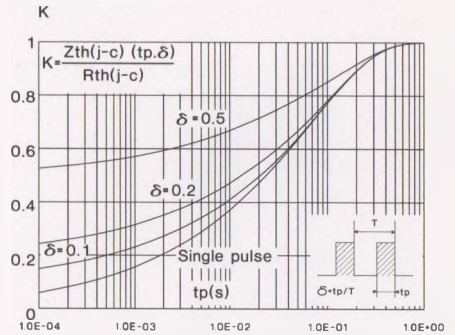


Fig. 5 : Reverse leakage current versus reverse voltage applied. (Typical values)

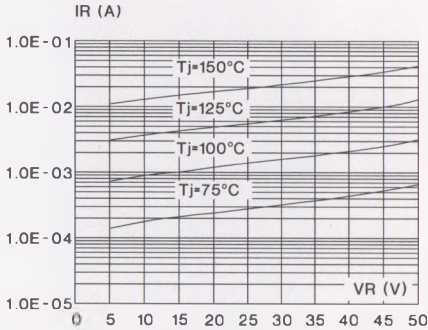


Fig. 6 : Junction capacitance versus reverse voltage applied. (Typical values)

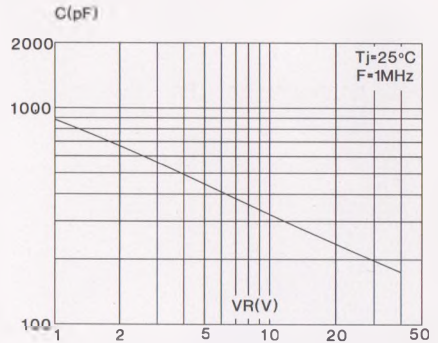


Fig. 7 : Forward voltage drop versus forward current. (Maximum values)

