

POWER SCHOTTKY RECTIFIER
MAIN PRODUCT CHARACTERISTICS

| | |
|-------------|------------------|
| $I_{F(AV)}$ | 2 x 7.5 A |
| V_{RRM} | 45 V |
| V_F | 0.57 V |

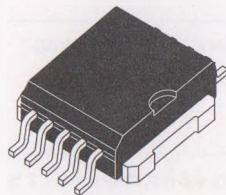
FEATURES AND BENEFITS

- 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.



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 | Per diode | 17 | A |
| $I_{F(AV)}$ | Average Forward Current $\delta = 0.5$ | $T_c = 130^\circ\text{C}$ | Per diode | 7.5 | A |
| | | | Per device | 15 | |
| I_{FSM} | Surge Non Repetitive Forward Current | $t_p = 10$ ms Sinusoidal All pins connected | Per diode | 150 | A |
| I_{RRM} | Repetitive Peak Reverse Current | $t_p = 2$ μs $F = 1\text{KHz}$ | Per diode | 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 | Per diode | 3.5 | $^{\circ}C/W$ |
| | | total | 2.2 | |
| $R_{TH(c)}$ | Coupling Thermal Resistance | | 0.7 | $^{\circ}C/W$ |

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 :
 $P = 0.42 \times I_{F(AV)} + 0.020 I_F^2_{(RMS)}$

PIN OUT configuration in PowerSO-10 :

- Anode 1 = pin 1 to 5
- Anode 2 = pin 6 to 10
- Cathodes = connected to base tab

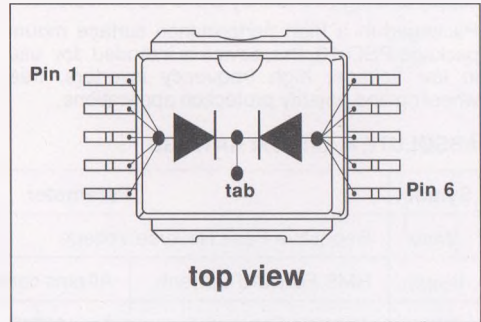


Fig. 1 : Average forward power dissipation versus average forward current. (Per diode)

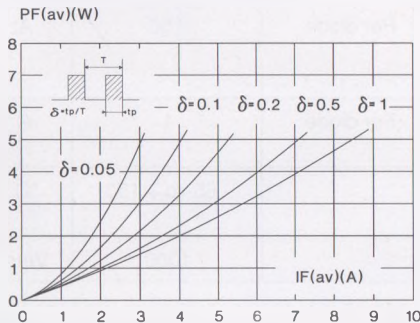


Fig. 2 : Average current versus ambient temperature.

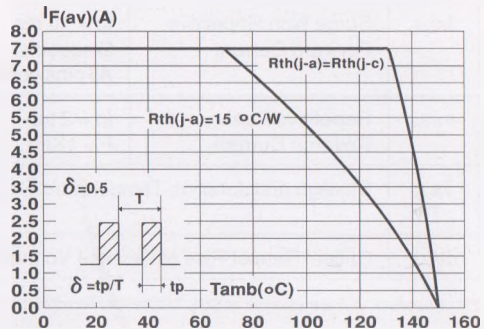


Fig. 3 : Non repetitive surge peak forward current versus overload duration. (Maximum values) (Per diode)

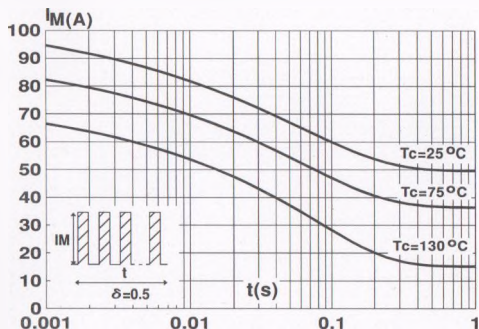


Fig. 4 : Relative variation of thermal transient impedance junction to case versus pulse duration.

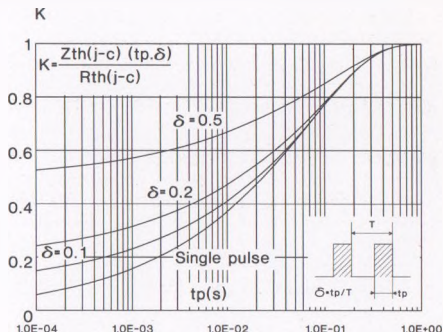


Fig. 5 : Reverse leakage current versus reverse voltage applied. (Typical values) (Per diode)

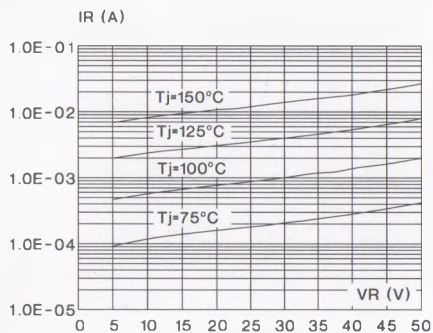


Fig. 6 : Junction capacitance versus reverse voltage applied. (Typical values) (Per diode)

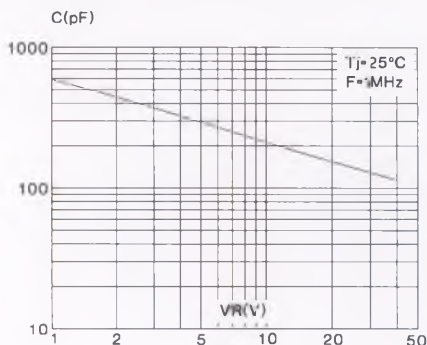


Fig. 7 : Forward voltage drop versus forward current. (Maximum values) (Per diode)

