



## LOW DROP OR-ing POWER SCHOTTKY RECTIFIER

### MAIN PRODUCT CHARACTERISTICS

|             |          |
|-------------|----------|
| $I_{F(AV)}$ | 2 x 40 A |
| $V_{RRM}$   | 15 V     |
| $V_F$ (max) | 0.33 V   |

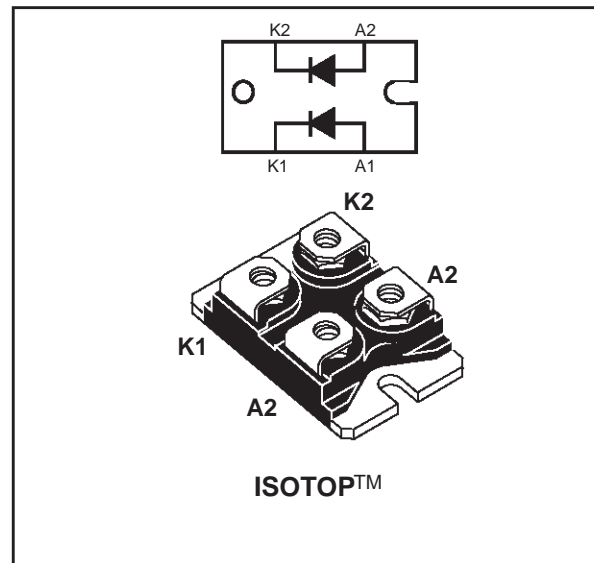
### FEATURES AND BENEFITS

- VERY LOW DROP FORWARD VOLTAGE FOR LESS POWER DISSIPATION AND REDUCED HEATSINK
- OPTIMIZED CONDUCTION / REVERSE LOSSES TRADE-OFF WHICH MEANS THE HIGHEST YIELD IN THE EQUIPMENTS
- INSULATED PACKAGE:  
Insulated voltage = 2500 V<sub>(RMS)</sub>  
Capacitance = 45 pF

### DESCRIPTION

Dual Schottky rectifier suited for Switched Mode Power Supplies and DC to DC power converters.

Packaged in ISOTOP™, this device is especially intended for use as an OR-ing diode in fault tolerant Power Supplies equipments.



### ABSOLUTE RATINGS (limiting values)

| Symbol       | Parameter                                |  | Value         | Unit             |
|--------------|--|--|---------------|------------------|
| $V_{RRM}$    | Repetitive peak reverse voltage          |  | 15            | V                |
| $I_{F(RMS)}$ | RMS forward current                      |  | 100           | A                |
| $I_{F(AV)}$  | Average forward current                  | $T_c = 80^\circ\text{C}$<br>$\delta = 0.5$   | 40            | A                |
| $I_{FSM}$    | Surge non repetitive forward current     | $t_p = 10 \text{ ms}$<br>Sinusoidal          | 700           | A                |
| $I_{RRM}$    | Repetitive peak reverse current          | $t_p = 2 \mu\text{s}$<br>$F = 1 \text{ kHz}$ | 2             | A                |
| $T_{stg}$    | Storage temperature range                |  | - 65 to + 150 | $^\circ\text{C}$ |
| $T_j$        | Maximum operating junction temperature   |  | 100           |                  |
| dV/dt        | Critical rate of rise of reverse voltage |  | 10000         | V/ $\mu\text{s}$ |

# STPS80L15TV

## THERMAL RESISTANCES

| Symbol               | Parameter        | Value     | Unit |
|----------------------|------------------|-----------|------|
| R <sub>th(j-c)</sub> | Junction to case | Per diode | 1    |
|                      |                  | Total     | 0.55 |
| R <sub>th(c)</sub>   | Coupling         | 0.1       |      |

## STATIC ELECTRICAL CHARACTERISTICS (per diode)

| Symbol           | Parameter               | Tests Conditions       | Min.                  | Typ. | Max. | Unit |    |
|------------------|-------------------------|------------------------|-----------------------|------|------|------|----|
| I <sub>R</sub> * | Reverse leakage current | T <sub>j</sub> = 100°C | V <sub>R</sub> = 5V   |      | 220  |      | mA |
|                  |                         | T <sub>j</sub> = 25°C  | V <sub>R</sub> = 10V  |      |      | 11   |    |
|                  |                         | T <sub>j</sub> = 100°C |                       |      | 0.32 | 1.1  | A  |
| V <sub>F</sub> * | Forward voltage drop    | T <sub>j</sub> = 25°C  | I <sub>F</sub> = 40 A |      |      | 0.43 | V  |
|                  |                         | T <sub>j</sub> = 100°C | I <sub>F</sub> = 40 A |      | 0.28 | 0.33 |    |

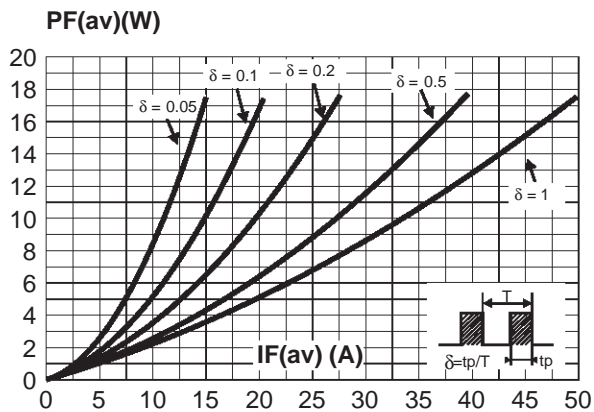
Pulse test : \* tp = 5 ms, δ < 2 %

\*\* tp = 380 μs, δ < 2%

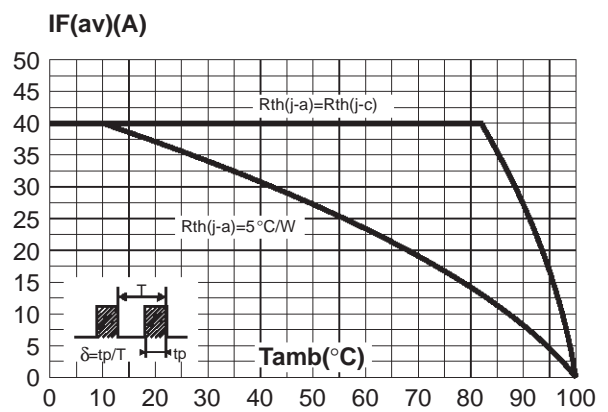
To evaluate the conduction losses use the following equation :

$$P = 0.19 \times I_{F(AV)} + 3.25 \times 10^{-3} \times I_{F(RMS)}^2$$

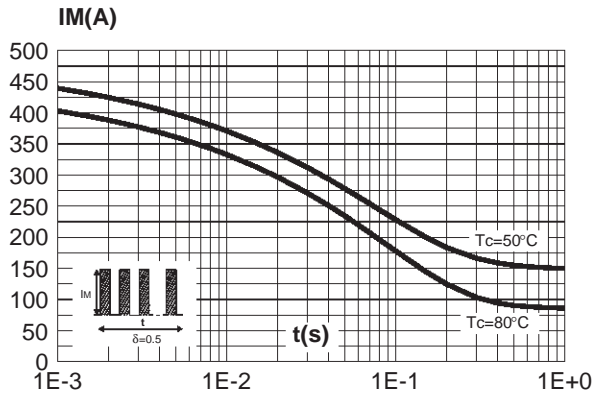
**Fig. 1:** Average forward power dissipation versus average forward current (per diode).



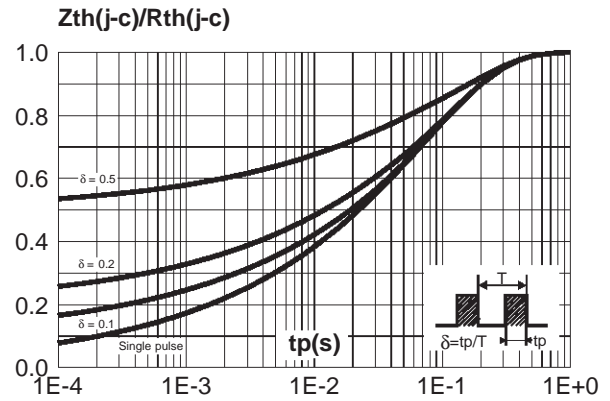
**Fig. 2:** Average forward current versus ambient temperature (δ=0.5, per diode).



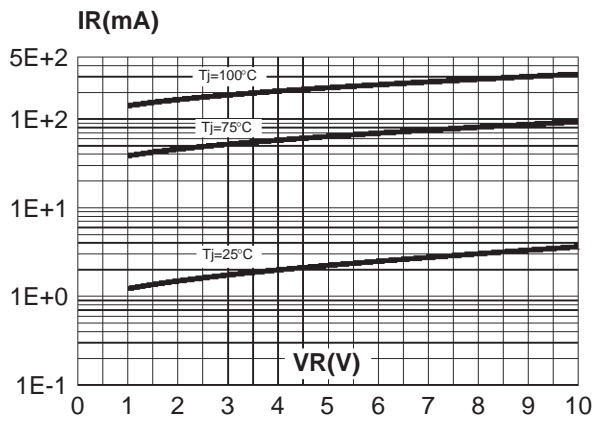
**Fig. 3:** Non repetitive surge peak forward current versus overload duration (maximum values, per diode).



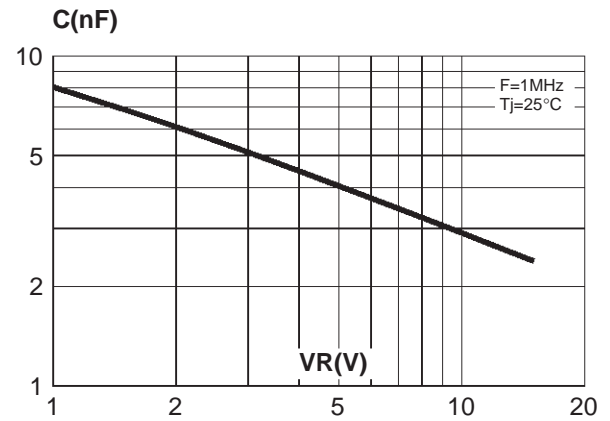
**Fig. 4:** Relative variation of thermal impedance junction to case versus pulse.



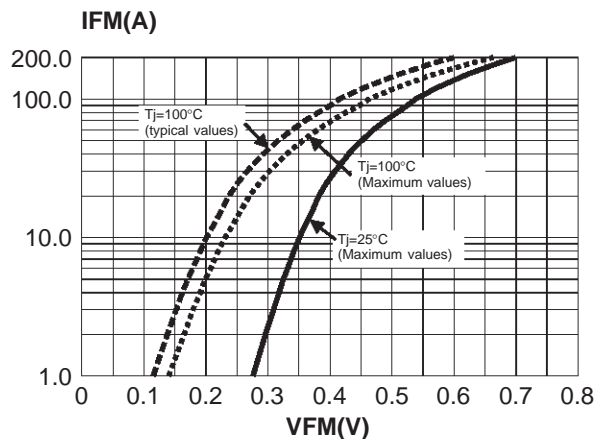
**Fig. 5:** Reverse leakage current versus reverse voltage applied (typical values, per diode).



**Fig. 6:** Junction capacitance versus reverse voltage applied (typical values, per diode).



**Fig. 7:** Forward voltage drop versus forward current (per diode).



# STPS80L15TV

## PACKAGE MECHANICAL DATA ISOTOP

| REF. | DIMENSIONS  |       |       |        |       |       |
|------|-------------|-------|-------|--------|-------|-------|
|      | Millimeters |       |       | Inches |       |       |
|      | Min.        | Typ.  | Max.  | Min.   | Typ.  | Max.  |
| A    | 11.80       |       | 12.20 | 0.465  |       | 0.480 |
| A1   | 8.90        |       | 9.10  | 0.350  |       | 0.358 |
| B    | 7.8         |       | 8.20  | 0.307  |       | 0.323 |
| C    | 0.75        |       | 0.85  | 0.030  |       | 0.033 |
| C2   | 1.95        |       | 2.05  | 0.077  |       | 0.081 |
| D    | 37.80       |       | 38.20 | 1.488  |       | 1.504 |
| D1   | 31.50       |       | 31.70 | 1.240  |       | 1.248 |
| E    | 25.15       |       | 25.50 | 0.990  |       | 1.004 |
| E1   | 23.85       |       | 24.15 | 0.939  |       | 0.951 |
| E2   |             | 24.80 |       |        | 0.976 |       |
| G    | 14.90       |       | 15.10 | 0.587  |       | 0.594 |
| G1   | 12.60       |       | 12.80 | 0.496  |       | 0.504 |
| G2   | 3.50        |       | 4.30  | 0.138  |       | 0.169 |
| F    | 4.10        |       | 4.30  | 0.161  |       | 0.169 |
| F1   | 4.60        |       | 5.00  | 0.181  |       | 0.197 |
| P    | 4.00        |       | 4.30  | 0.157  |       | 0.69  |
| P1   | 4.00        |       | 4.40  | 0.157  |       | 0.173 |
| S    | 30.10       |       | 30.30 | 1.185  |       | 1.193 |

- **Marking:** STPS80L15T
- **Cooling method:** C
- **Weight:** 28g (without screws)
- **Recommended torque value:** 1.3 m.N.
- **Maximum torque value:** 1.5 m.N.
- **Shipped** 10 unites per tube

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