

## LOW DROP OR-ing POWER SCHOTTKY DIODE

### MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	<b>2 x 60 A</b>
$V_{RRM}$	<b>15 V</b>
$T_j$ (max)	<b>125 °C</b>
$V_F$ (max)	<b>0.31 V</b>

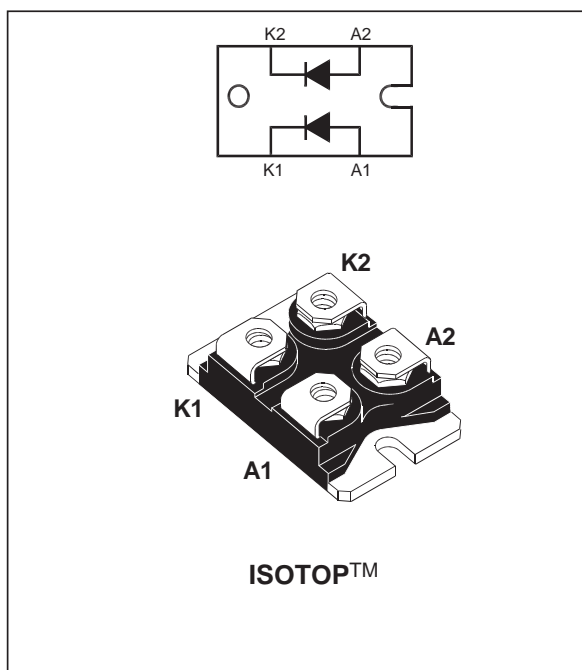
### FEATURES AND BENEFITS

- VERY LOW DROP FORWARD VOLTAGE FOR LESS POWER DISSIPATION AND REDUCED HEATSINK
- INSULATED PACKAGE:  
Insulated voltage = 2500 V<sub>(RMS)</sub>  
Capacitance = 45 pF
- AVALANCHE CAPABILITY SPECIFIED

### 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 supply equipments.



### ABSOLUTE RATINGS (limiting values, per diode)

Symbol	Parameter		Value	Unit
$V_{RRM}$	Repetitive peak reverse voltage		15	V
$I_{F(RMS)}$	RMS forward current		160	A
$I_{F(AV)}$	Average forward current	$T_c = 115^\circ\text{C}$ $\delta = 1$	60	A
$I_{FSM}$	Surge non repetitive forward current	$t_p = 10 \text{ ms}$ Sinusoidal	1200	A
$I_{RRM}$	Repetitive peak reverse current	$t_p = 2\mu\text{s}$ $F = 1\text{kHz}$	2	A
$P_{ARM}$	Repetitive peak avalanche power	$t_p = 1\mu\text{s}$ $T_j = 25^\circ\text{C}$	72030	W
$T_{stg}$	Storage temperature range		- 65 to + 150	°C
$T_j$	Maximum operating junction temperature		125	°C
$dV/dt$	Critical rate of rise of reverse voltage		10000	V/ $\mu\text{s}$

\* :  $\frac{dP_{tot}}{dT_j} < \frac{1}{R_{th(j-a)}}$  thermal runaway condition for a diode on its own heatsink

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# STPS120L15TV

## THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R <sub>th(j-c)</sub>	Junction to case	Per diode	0.45	°C/W
		Total	0.28	
R <sub>th(c)</sub>		Coupling	0.1	

## STATIC ELECTRICAL CHARACTERISTICS (per diode)

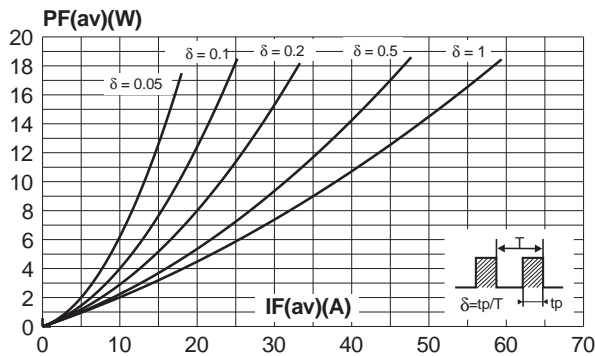
Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
I <sub>R</sub> *	Reverse leakage current	T <sub>J</sub> = 100°C	V <sub>R</sub> = 5V		450		mA
		T <sub>J</sub> = 25°C	V <sub>R</sub> = 12V			22	mA
		T <sub>J</sub> = 100°C			0.7	2.2	A
V <sub>F</sub> *	Forward voltage drop	T <sub>J</sub> = 25°C	I <sub>F</sub> = 60 A			0.43	V
		T <sub>J</sub> = 125°C	I <sub>F</sub> = 60 A		0.27	0.31	

Pulse test : \* tp = 380 μs, δ < 2%

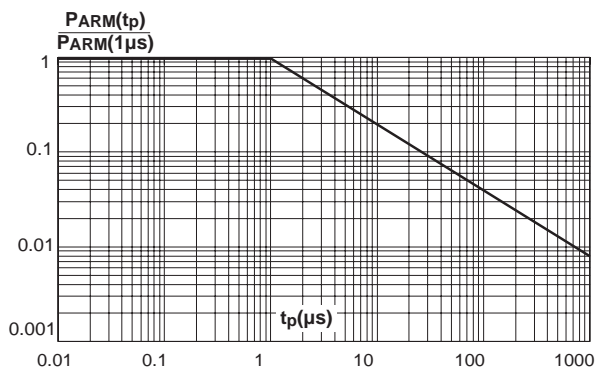
To evaluate the conduction losses use the following equation :

$$P = 0.18 \times I_{F(AV)} + 2.2 \cdot 10^{-3} \times I_{F(RMS)}^2$$

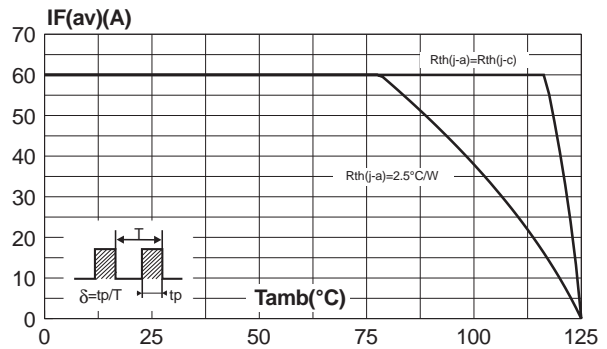
**Fig. 1:** Average forward power dissipation versus average forward current (per diode).



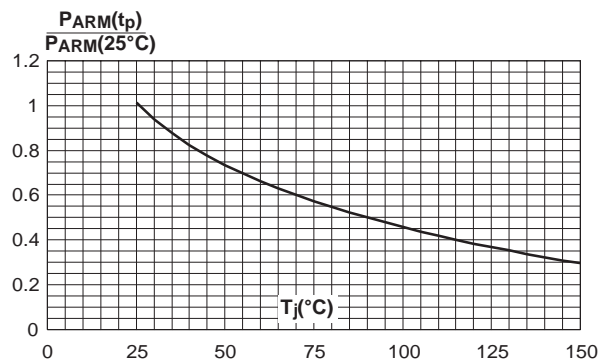
**Fig. 3:** Normalized avalanche power derating versus pulse duration.



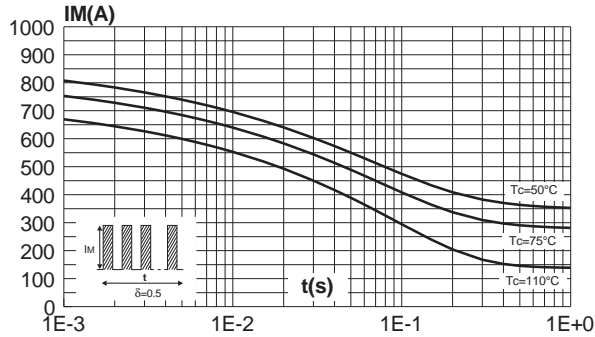
**Fig. 2:** Average forward current versus ambient temperature (δ = 1) (per diode).



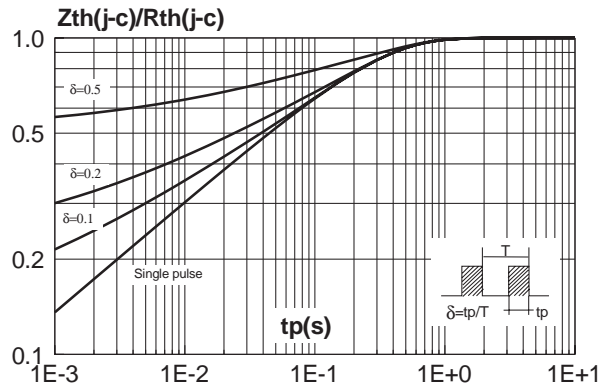
**Fig. 4:** Normalized avalanche power derating versus junction temperature.



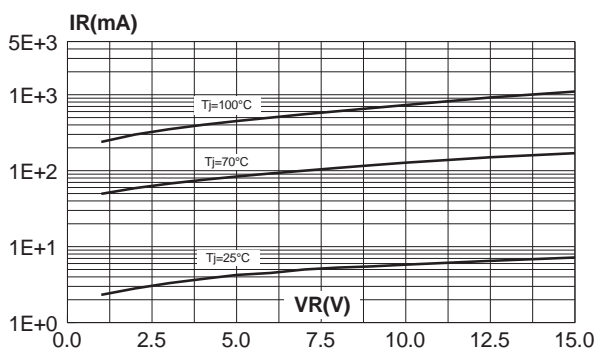
**Fig. 5:** Non repetitive surge peak forward current versus overload duration (maximum values per diode).



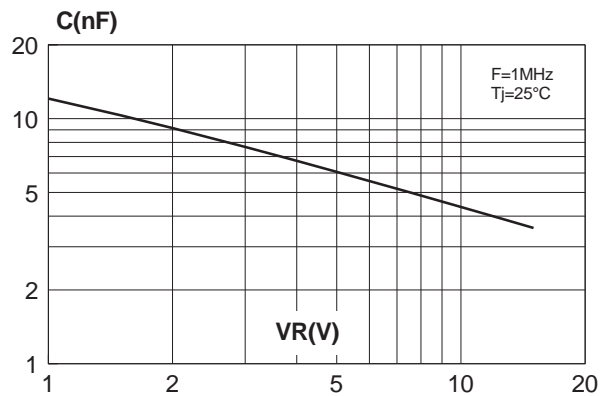
**Fig. 6:** Relative variation of thermal impedance junction to case versus pulse duration.



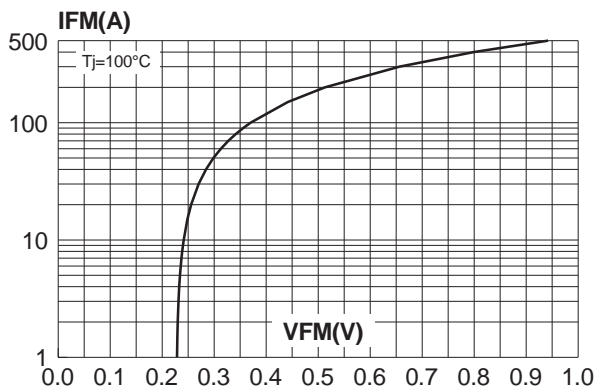
**Fig. 7:** Reverse leakage current versus reverse voltage applied (typical values per diode).



**Fig. 8:** Junction capacitance versus reverse voltage applied (typical values per diode).

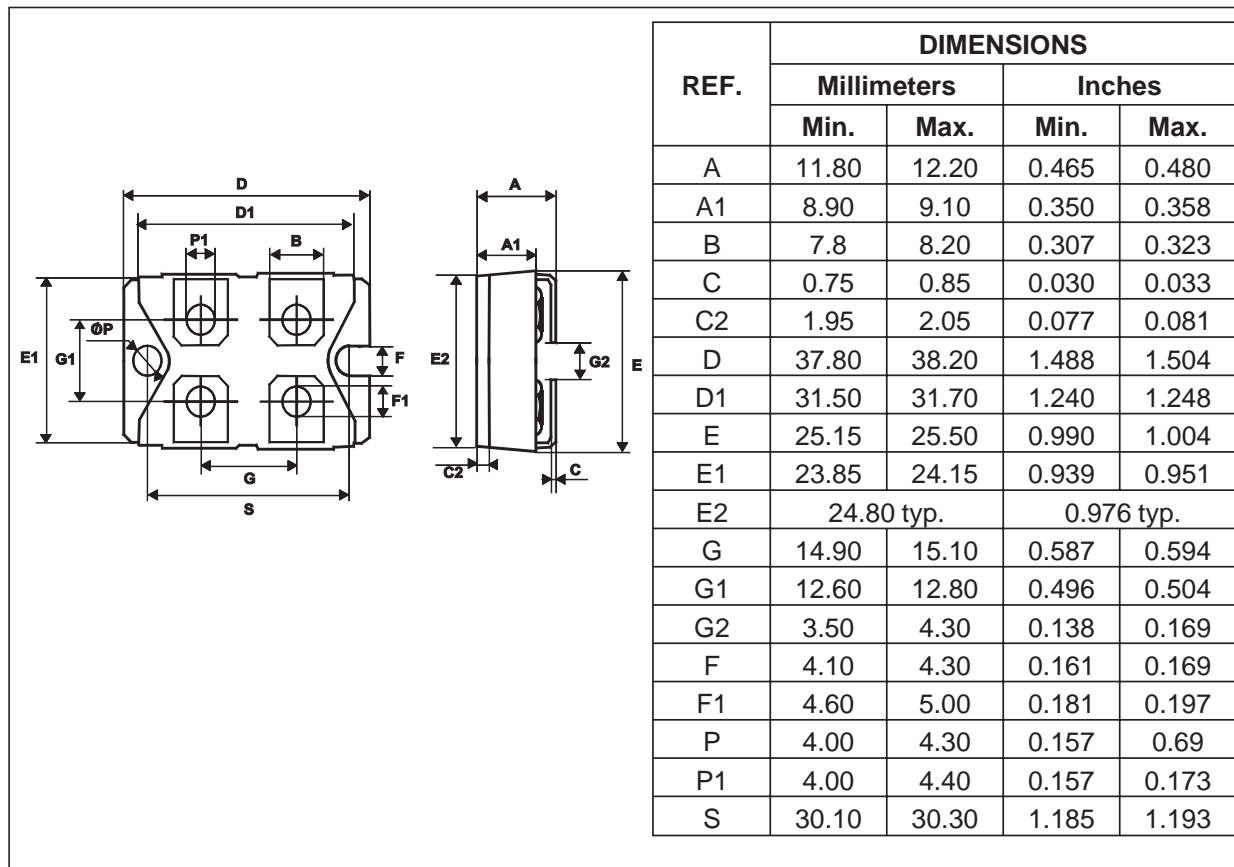


**Fig. 9:** Forward voltage drop versus forward current (maximum values per diode).



# STPS120L15TV

## PACKAGE MECHANICAL DATA ISOTOP



Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS120L15TV	STPS120L15TV	ISOTOP	28g (without screws)	10	Tube

- Cooling method: by conduction (C)
- Recommended torque value : 1.3 N.m.
- Maximum torque value: 1.5 N.m.
- Epoxy meets UL94,V0

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