



STPS120L15TV

LOW DROP OR-ing POWER SCHOTTKY DIODE

MAIN PRODUCT CHARACTERISTICS

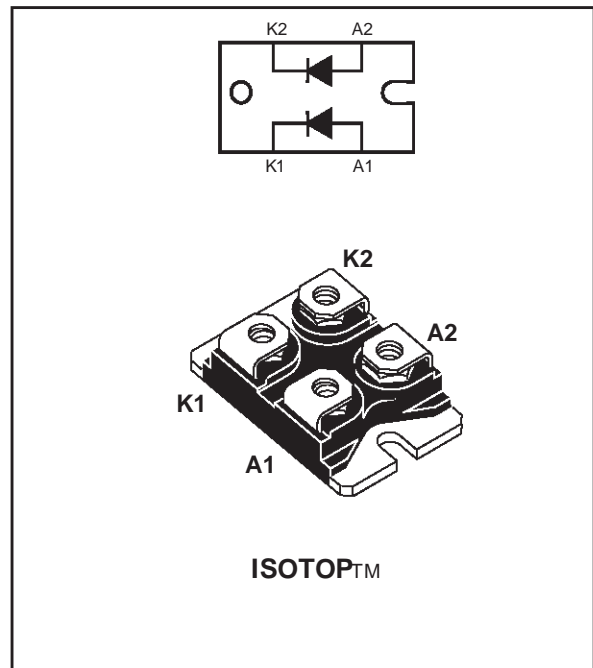
$I_{F(AV)}$	2 x 60 A
V_{RRM}	15 V
T_j (max)	125 °C
V_F (max)	0.31 V

FEATURES AND BENEFITS

- VERY LOW DROP FORWARD VOLTAGE FOR LESS POWER DISSIPATION AND REDUCED HEATSINK
- INSULATED PACKAGE:
Insulated voltage = 2500 V_(RMS)
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 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	$T_c = 115^\circ\text{C}$ $\delta = 1$	A
I_{FSM}	Surge non repetitive forward current	$t_p = 10 \text{ ms}$ Sinusoidal	A
I_{RRM}	Repetitive peak reverse current	$t_p = 2 \mu\text{s}$ $F = 1 \text{ kHz}$	A
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/ μs

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

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THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case	Per diode	0.45	$^{\circ}\text{C}/\text{W}$
		Total	0.28	
$R_{th(c)}$		Coupling	0.1	

STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage current	$T_j = 100^{\circ}\text{C}$	$V_R = 5\text{V}$		450		mA
		$T_j = 25^{\circ}\text{C}$	$V_R = 12\text{V}$			22	mA
		$T_j = 100^{\circ}\text{C}$			0.7	2.2	A
V_F^*	Forward voltage drop	$T_j = 25^{\circ}\text{C}$	$I_F = 60\text{A}$			0.43	V
		$T_j = 125^{\circ}\text{C}$	$I_F = 60\text{A}$		0.27	0.31	

Pulse test : * $t_p = 380\ \mu\text{s}$, $\delta < 2\%$

To evaluate the conduction losses use the following equation :

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

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

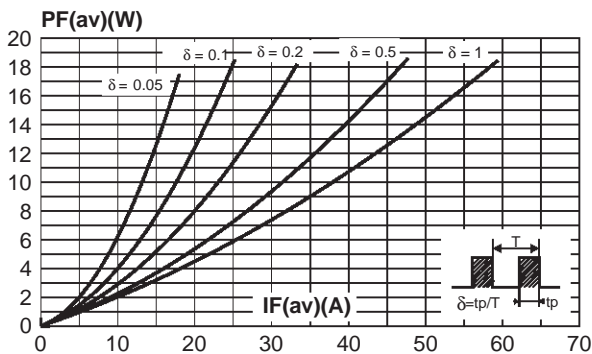


Fig. 2: Average forward current versus ambient temperature ($\delta = 1$) (per diode).

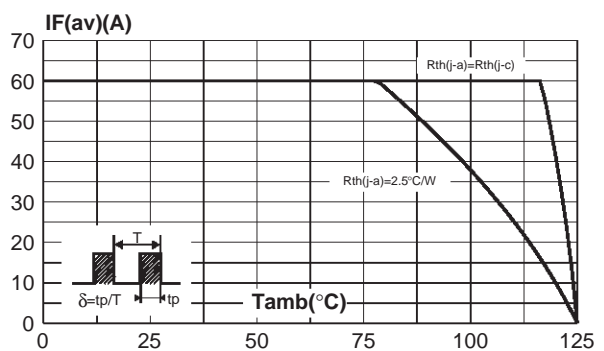


Fig. 3: Non repetitive surge peak forward current versus overload duration (maximum values per diode).

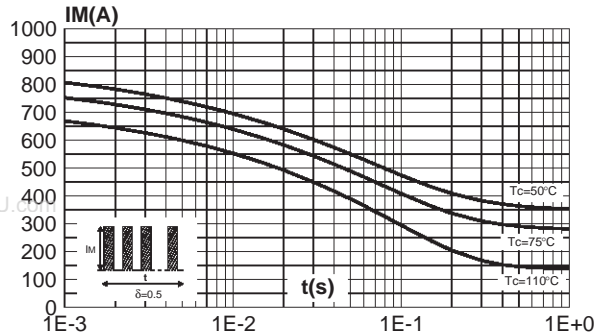


Fig. 4: Relative variation of thermal impedance junction to case versus pulse duration.

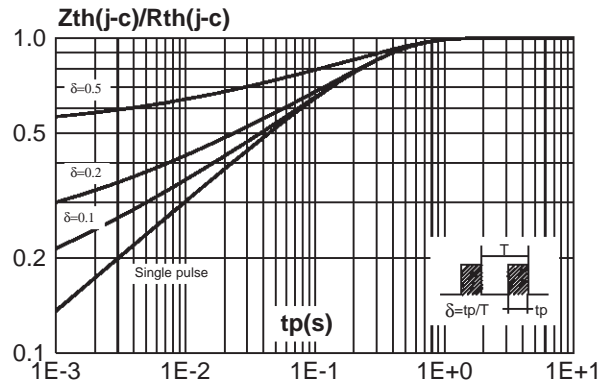


Fig. 5: Reverse leakage current versus reverse voltage applied (typical values per diode).

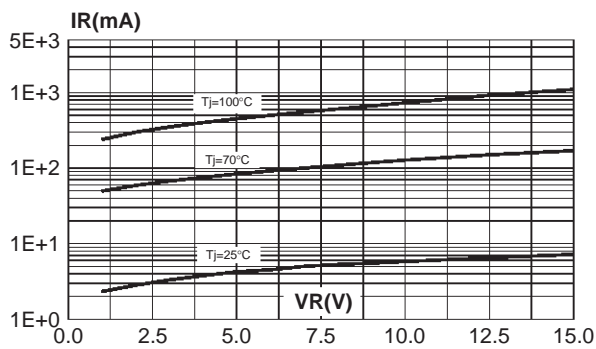


Fig. 6: Junction capacitance versus reverse voltage applied (typical values per diode).

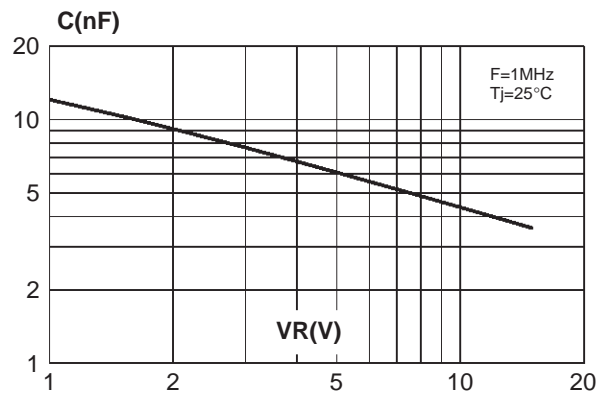
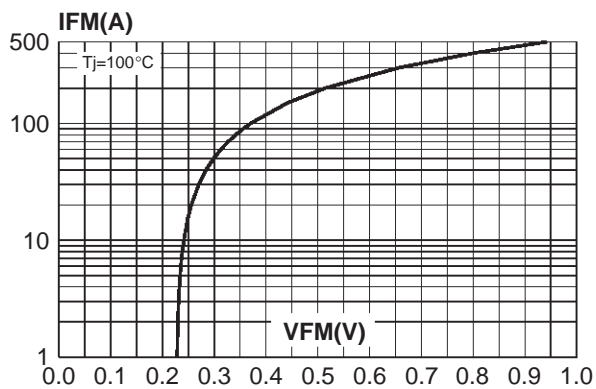
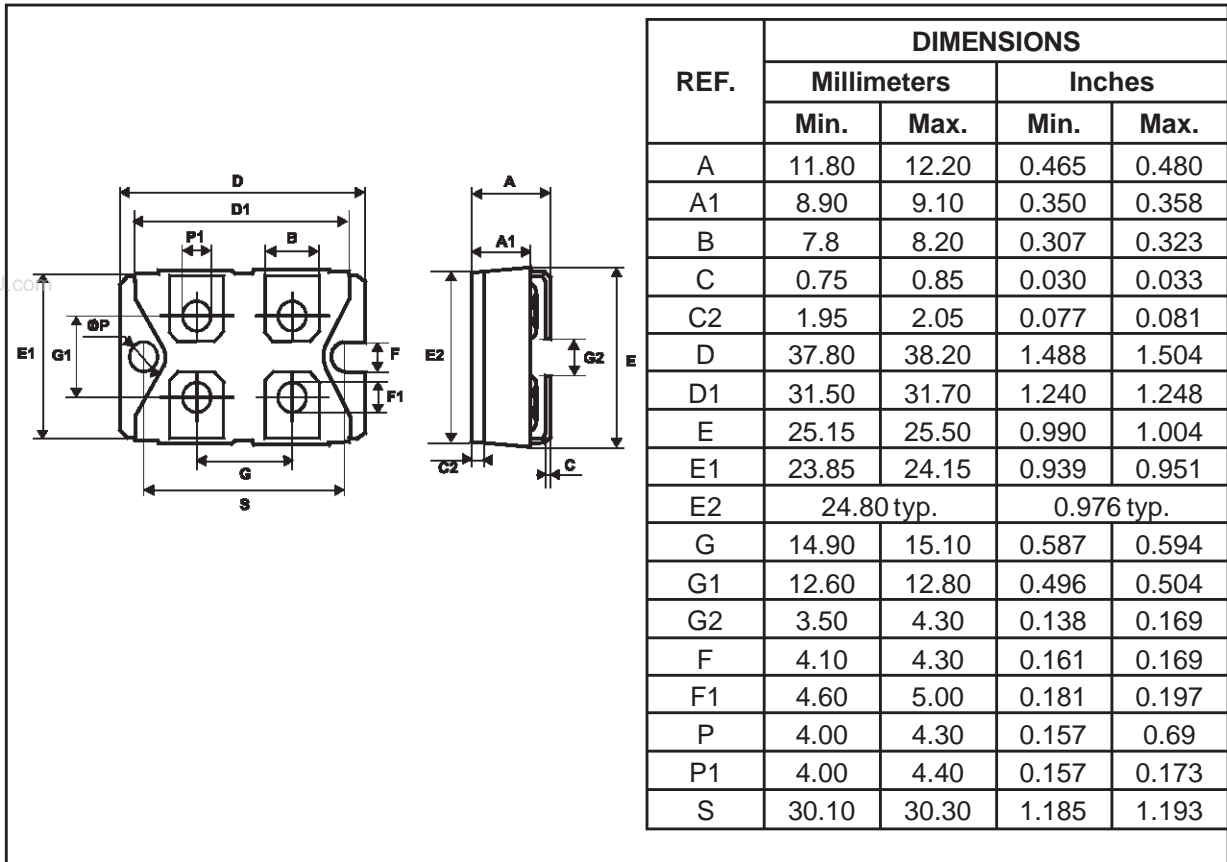


Fig. 7: Forward voltage drop versus forward current (maximum values per diode).



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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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