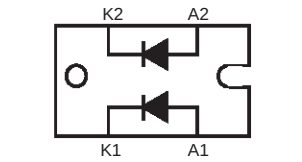
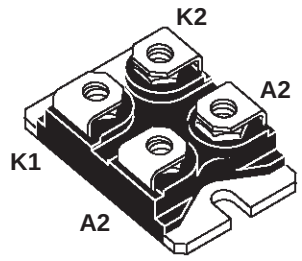
STPS80L15TV

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





ISOTOPTM

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 $V_{(RMS)}$
  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 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	Tc = 80°C δ = 0.5	40	A
I_{FSM}	Surge non repetitive forward current	tp = 10 ms Sinusoidal	700	A
I_{RRM}	Repetitive peak reverse current	tp = 2 µs F = 1kHz	2	A
T_{stg}	Storage temperature range		- 65 to + 150	°C
Tj	Maximum operating junction temperature		100	
dV/dt	Critical rate of rise of reverse voltage		10000	V/µs

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THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th\ (j-c)}$	Junction to case	Per diode	1	°C/W
		Total	0.55	
$R_{th\ (c)}$		Coupling	0.1	

STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
I_R *	Reverse leakage current	Tj = 100°C	V_R = 5V		220		mA
		Tj = 25°C	V_R = 10V			11	
		Tj = 100°C			0.32	1.1	A
V_F *	Forward voltage drop	Tj = 25°C	I_F = 40 A			0.43	V
		Tj = 100°C	I_F = 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 :
$P = 0.19 \times I_{F(AV)} + 3.25\ 10^{-3} \times I_F^2{}_{(RMS)}$

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

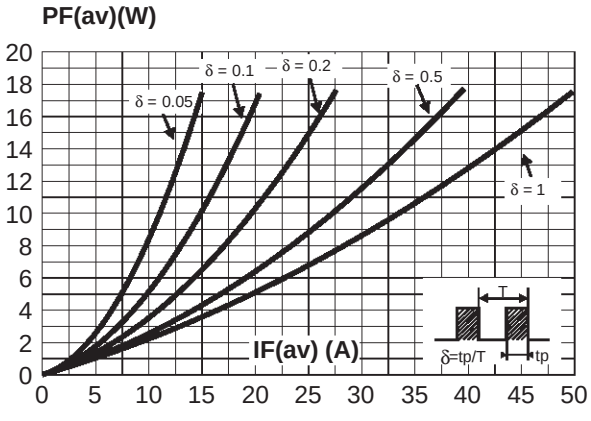


Fig. 2: Average forward current versus ambient temperature (δ=0.5, per diode).

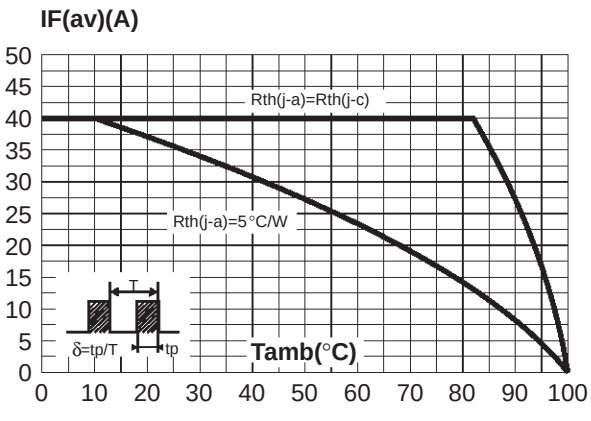


Fig. 3: Non repetitive surge peak forward current versus overload duration (maximum values, per diode).

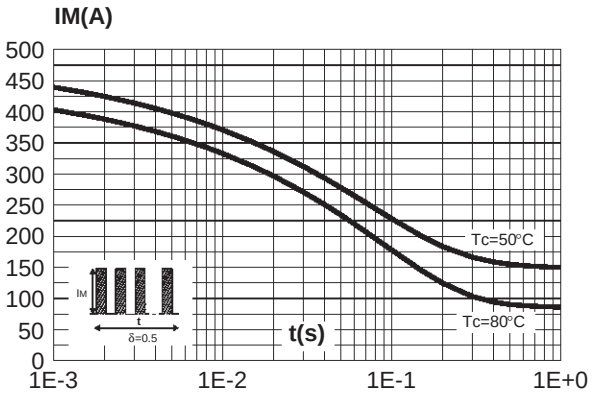


Fig. 4: Relative variation of thermal impedance junction to case versus pulse.

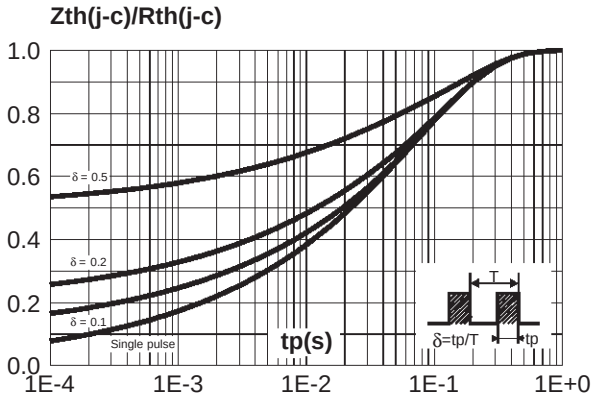


Fig. 5: Reverse leakage current versus reverse voltage applied (typical values, per diode).

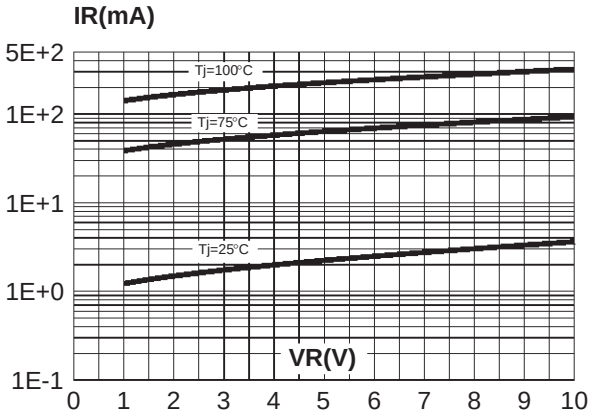


Fig. 6: Junction capacitance versus reverse voltage applied (typical values, per diode).

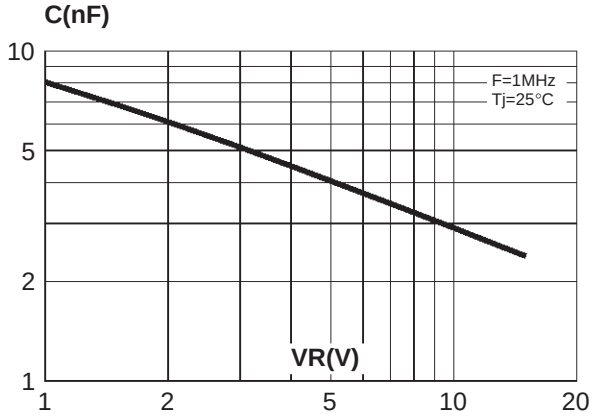
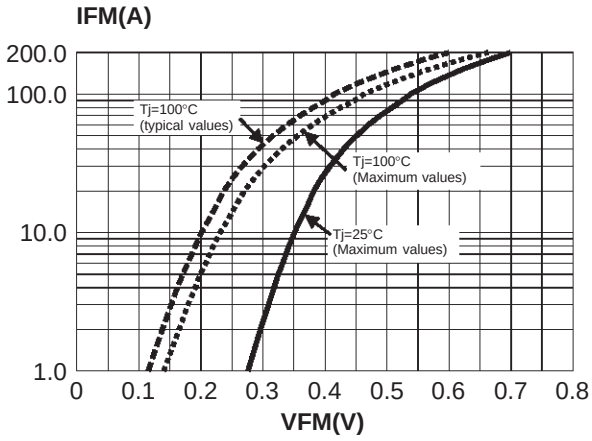
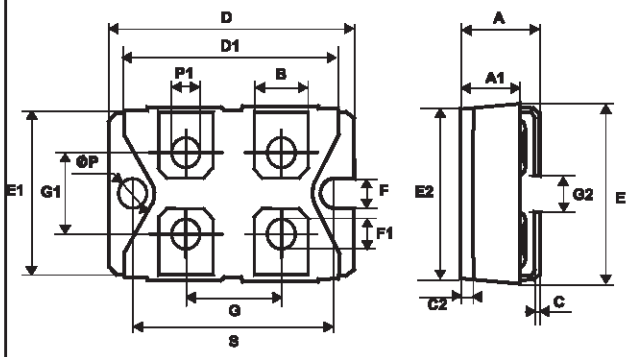


Fig. 7: Forward voltage drop versus forward current (per diode).



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