



勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
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[Http://www.100y.com.tw](http://www.100y.com.tw)

STPS160H100TV

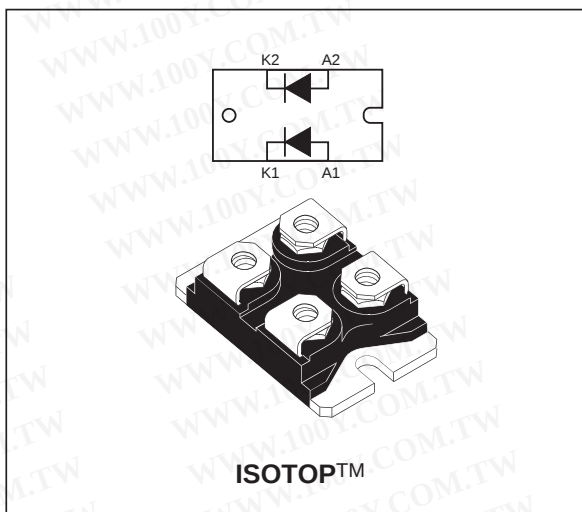
HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

$I_F(AV)$	2 x 80 A
V_{RRM}	100 V
$T_j(max)$	150 °C
$V_F(max)$	0.68 V

FEATURES AND BENEFITS

- NEGLIGIBLE SWITCHING LOSSES
- HIGH JUNCTION TEMPERATURE CAPABILITY
- LOW LEAKAGE CURRENT
- GOOD TRADE OFF BETWEEN LEAKAGE CURRENT AND FORWARD VOLTAGE DROP
- AVALANCHE RATED
- LOW INDUCTANCE PACKAGE
- INSULATED PACKAGE:
 Insulating Voltage = 2500 V(RMS)
 Capacitance = 45 pF
- AVALANCHE CAPABILITY SPECIFIED



DESCRIPTION

High voltage dual Schottky rectifier designed for high frequency telecom and computer Switched Mode Power Supplies and other power converters.

Packaged in ISOTOP, this device is intended for use in medium voltage operation, and particularly, in high frequency circuitries where low switching losses and low noise are required.

ABSOLUTE RATINGS (limiting values, per diode)

Symbol	Parameter			Value	Unit
V _{RRM}	Repetitive peak reverse voltage			100	V
I _{F(RMS)}	RMS forward current			180	A
I _{F(AV)}	Average forward current	Tc = 110°C δ = 0.5	Per diode Per device	80 160	A
I _{FSM}	Surge non repetitive forward current	tp = 10 ms sinusoidal		1000	A
I _{RRM}	Repetitive peak reverse current	tp = 2 μs square F = 1kHz		2	A
I _{RSM}	Non repetitive peak reverse current	tp = 100 μs square		10	A
P _{ARM}	Repetitive peak avalanche power	tp = 1μs Tj = 25°C		78400	W
T _{stg}	Storage temperature range			-55 to +150	°C
Tj	Maximum operating junction temperature *			150	°C
dV/dt	Critical rate of rise of reverse voltage			10000	V/μs

* $\therefore \frac{dP_{tot}}{dT_j} < \frac{1}{R_{th(j-a)}}$ 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 leg	0.9	°C/W
		Total	0.5	°C/W
$R_{th(c)}$		Coupling	0.14	°C/W

When the diodes 1 and 2 are used simultaneously :

$$\Delta T_j(\text{diode 1}) = P(\text{diode 1}) \times R_{th(j-c)}(\text{Per diode}) + P(\text{diode 2}) \times R_{th(c)}$$

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STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage Current	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			40	μA
		$T_j = 125^\circ\text{C}$			13	50	mA
V_F^{**}	Forward Voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 60\text{ A}$			0.75	V
		$T_j = 125^\circ\text{C}$	$I_F = 60\text{ A}$		0.59	0.63	
		$T_j = 25^\circ\text{C}$	$I_F = 80\text{ A}$			0.80	
		$T_j = 125^\circ\text{C}$	$I_F = 80\text{ A}$		0.63	0.68	
		$T_j = 25^\circ\text{C}$	$I_F = 120\text{ A}$			0.87	
		$T_j = 125^\circ\text{C}$	$I_F = 120\text{ A}$		0.69	0.74	
		$T_j = 25^\circ\text{C}$	$I_F = 160\text{ A}$			0.92	
		$T_j = 125^\circ\text{C}$	$I_F = 160\text{ A}$		0.75	0.80	

Pulse test : * $t_p = 5\text{ ms}$, $\delta < 2\%$

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

To evaluate the conduction losses use the following equation :

$$P = 0.56 \times I_{F(AV)} + 0.0015 \times I_F^2(\text{RMS})$$

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

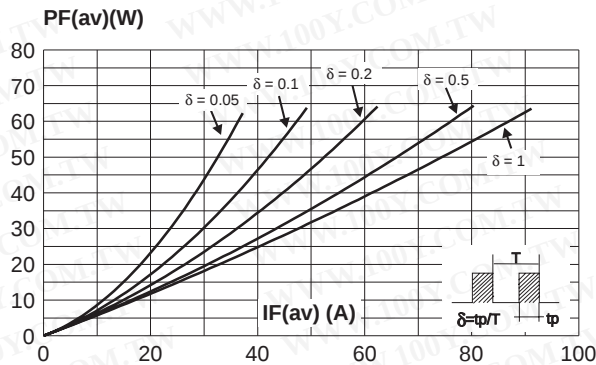


Fig. 2: Average forward current versus ambient temperature ($\delta=0.5$, per diode).

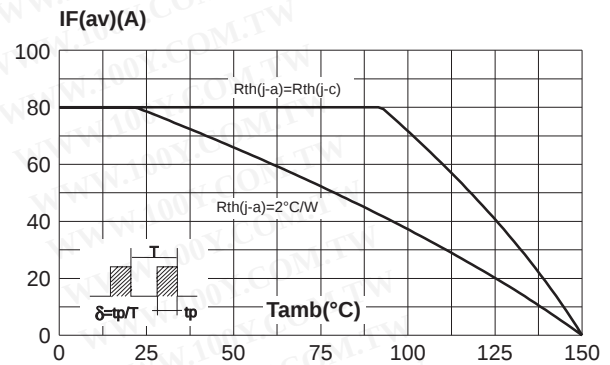


Fig. 3: Normalized avalanche power derating versus pulse duration.

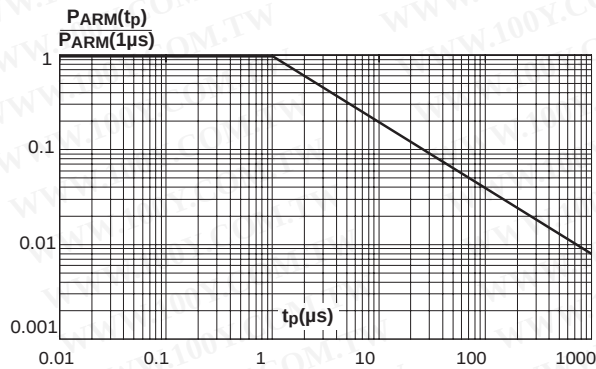


Fig. 4: Normalized avalanche power derating versus junction temperature.

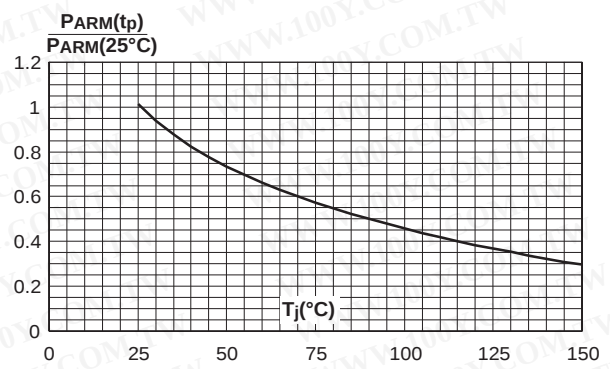


Fig. 5: Non repetitive surge peak forward current versus overload duration (maximum values, per diode).

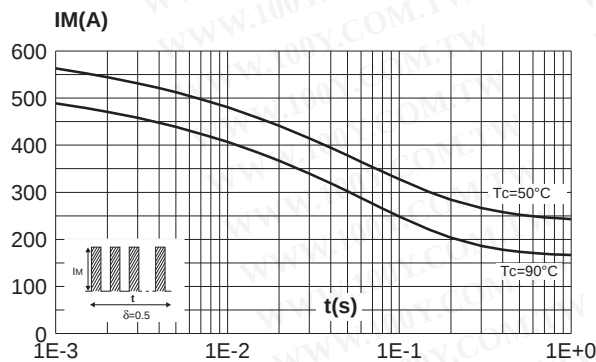
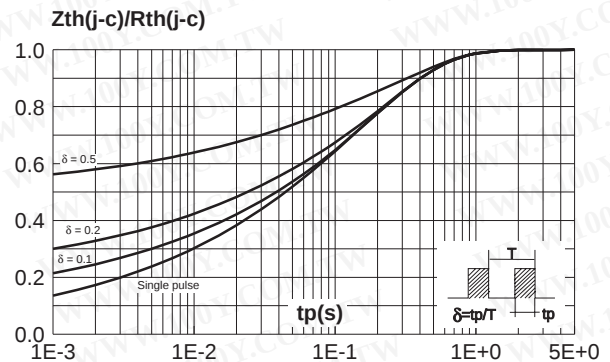


Fig. 6: Relative variation of thermal impedance junction to case versus pulse duration (per diode).



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

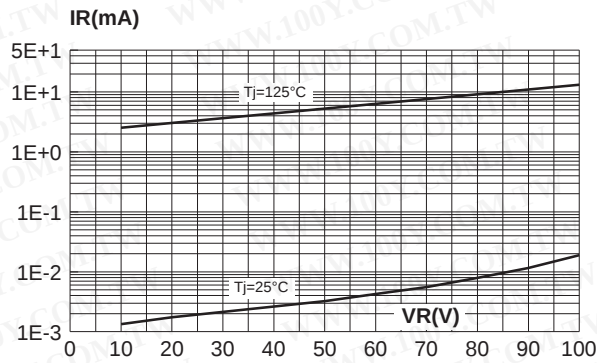


Fig. 8: Junction capacitance versus reverse voltage applied (typical values, per diode).

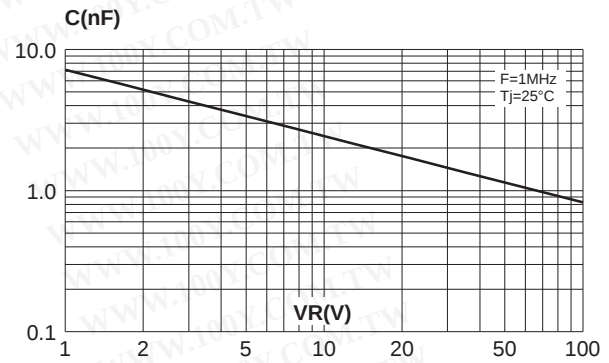
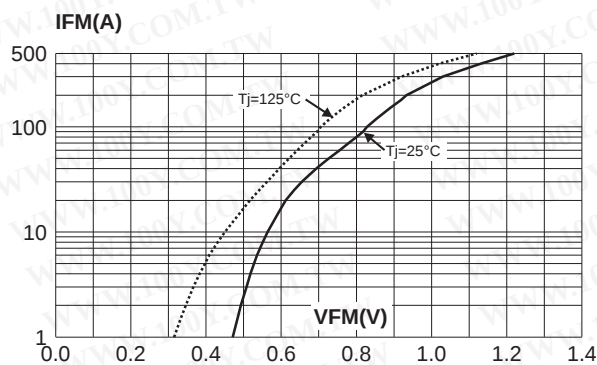
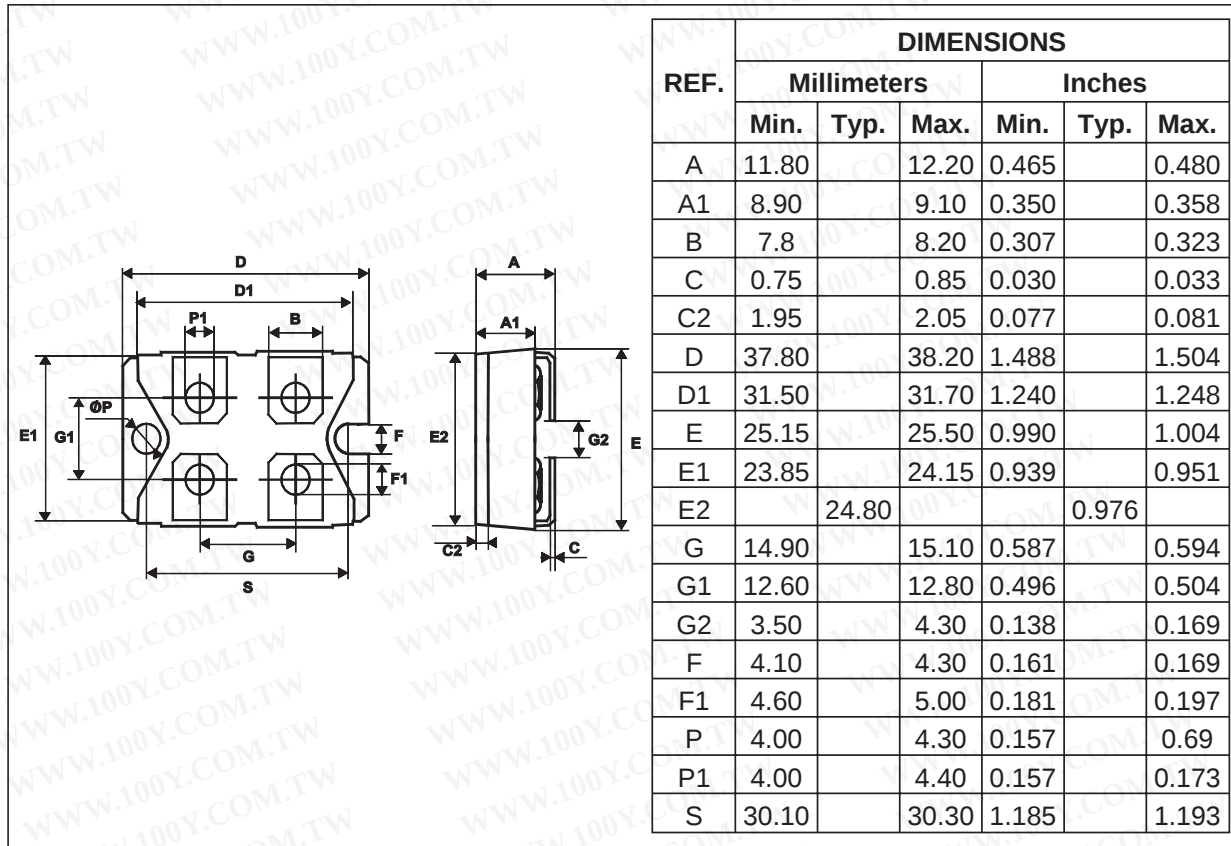


Fig. 9: Forward voltage drop versus forward current (maximum values, per diode).



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PACKAGE MECHANICAL DATA
ISOTOP™



- Cooling method: C
- Recommended torque value: 1.3 N.m.
- Maximum torque value: 1.5 N.m.

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS160H100TV	STPS160H100TV	ISOTOP	27g without screws	10	Tube

- Epoxy meets UL94,V0

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