



STPS360B(-TR)/B-1

POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

$I_F(AV)$	3 A
V_{RRM}	60 V
$V_F(max)$	0.59 V

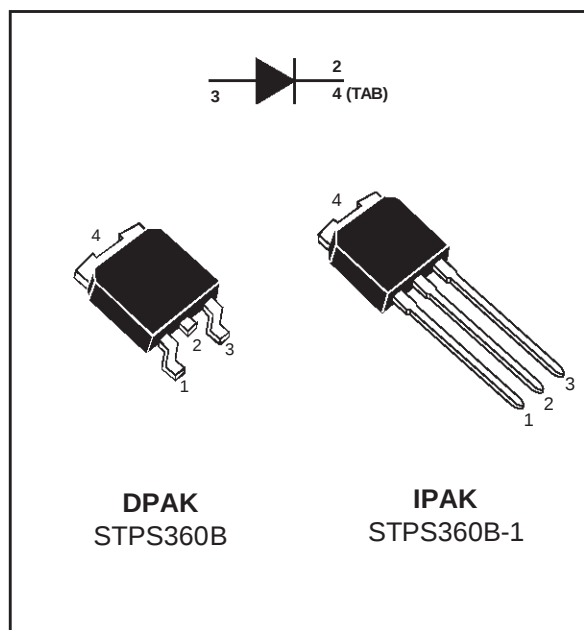
FEATURES AND BENEFITS

- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD DROP VOLTAGE
- LOW CAPACITANCE
- HIGH REVERSE AVALANCHE SURGE CAPABILITY
- TAPE AND REEL OPTION : -TR

DESCRIPTION

High voltage Schottky rectifier suited to Switch Mode Power Supplies and other Power Converters.

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



DPAK
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ABSOLUTE RATINGS (limiting value)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive peak reverse voltage		60	V
$I_{F(RMS)}$	RMS forward current		6	A
$I_{F(AV)}$	Average forward current	$T_{case} = 140^{\circ}C$ $\delta = 0.5$	3	A
I_{FSM}	Surge non repetitive forward current	$t_p = 10\text{ ms}$ Sinusoidal	50	A
I_{RRM}	Repetitive peak reverse current	$t_p = 2\text{ }\mu s$ $F = 1\text{ kHz}$	1	A
T_{stg}	Storage temperature range		- 65 to + 150	$^{\circ}C$
T_j	Maximum junction temperature		150	
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	3.5	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Tests Conditions	Tests Conditions	Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage current	$T_j = 25^\circ\text{C}$	$V_R = 60\text{ V}$		30	μA
		$T_j = 125^\circ\text{C}$		3	10	mA
V_F^{**}	Forward voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 3\text{ A}$		0.65	V
		$T_j = 125^\circ\text{C}$	$I_F = 3\text{ A}$	0.55	0.59	

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

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

To evaluate the maximum conduction losses use the following equation :

$$P = 0.49 \times I_{F(AV)} + 0.035 I_F^2(RMS)$$

Typical junction capacitance, $V_R = 0\text{ V}$ $F = 1\text{ MHz}$ $T_j = 25^\circ\text{C}$ $C = 700\text{ pF}$

Fig. 1: Average forward power dissipation versus average forward current.

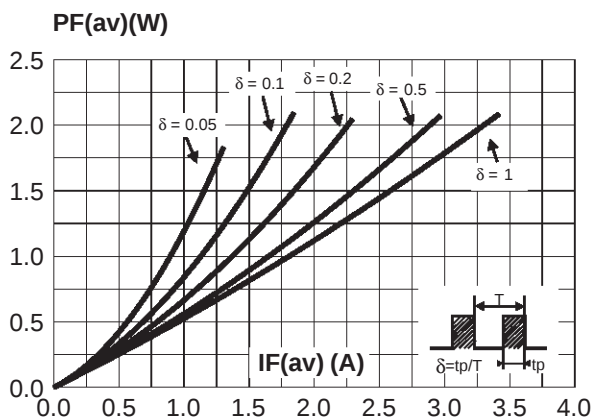


Fig. 2: Average forward current versus ambient temperature ($\delta=0.5$).

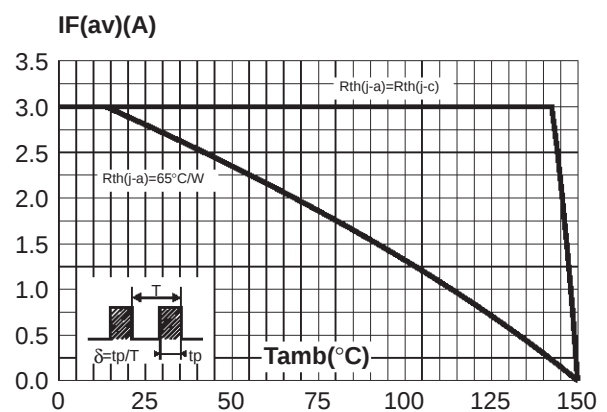


Fig. 3: Non repetitive surge peak forward current versus overload duration (maximum values).

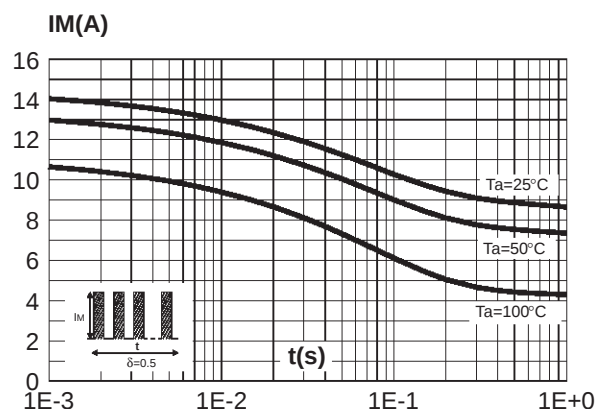


Fig. 4: Relative variation of thermal impedance junction to case versus pulse duration.

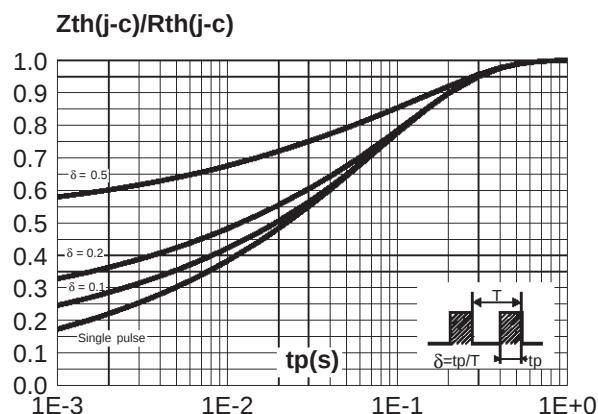


Fig. 5: Reverse leakage current versus reverse voltage applied (typical values).

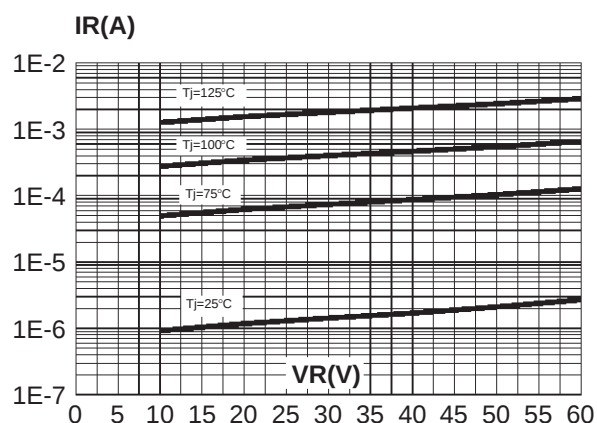


Fig. 6: Junction capacitance versus reverse voltage applied (typical values).

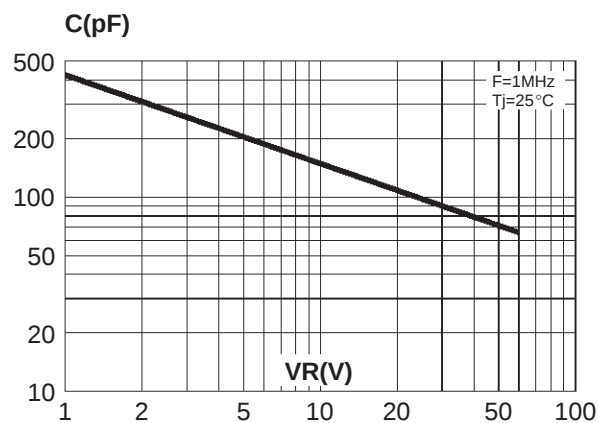


Fig. 7: Forward voltage drop versus forward current (maximum values).

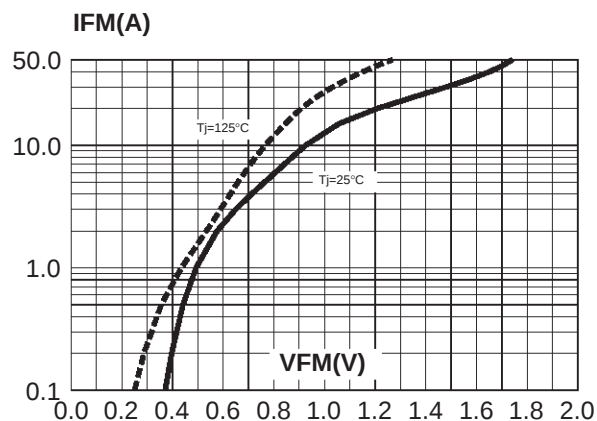
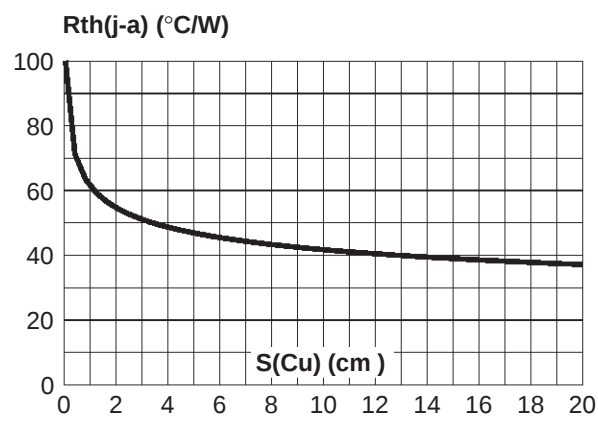


Fig. 8: Thermal resistance junction to ambient versus copper surface under tab (Epoxy printed circuit board FR4, copper thickness: $35\mu\text{m}$).

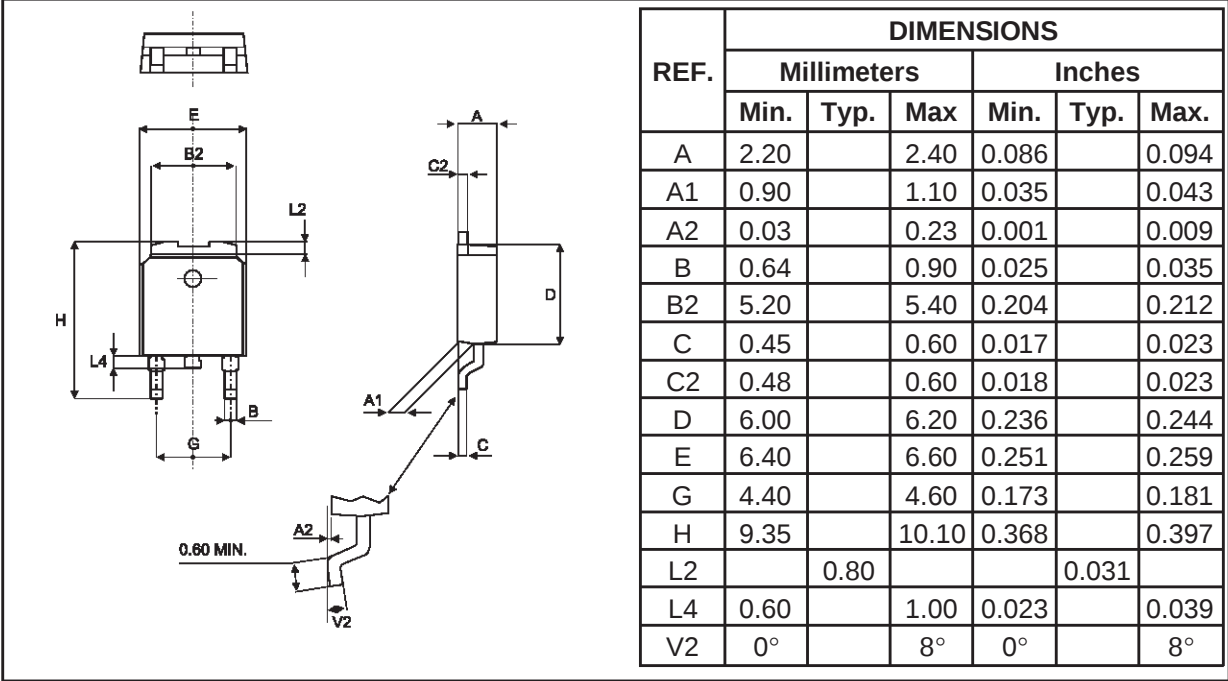


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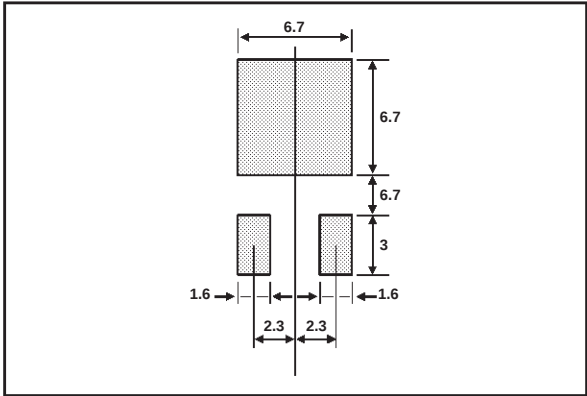
PACKAGE MECHANICAL DATA IPAK

REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.086		0.094
A1	0.9		1.1	0.035		0.043
A3	0.7		1.3	0.027		0.051
B	0.64		0.9	0.025		0.035
B2	5.2		5.4	0.204		0.212
B3			0.85			0.033
B5		0.3			0.035	
B6			0.95			0.037
C	0.45		0.6	0.017		0.023
C2	0.48		0.6	0.019		0.023
D	6		6.2	0.236		0.244
E	6.4		6.6	0.252		0.260
G	4.4		4.6	0.173		0.181
H	15.9		16.3	0.626		0.641
L	9		9.4	0.354		0.370
L1	0.8		1.2	0.031		0.047
L2		0.8	1		0.031	0.039
V1		10°			10°	

PACKAGE MECHANICAL DATA
DPAK



FOOT PRINT DIMENSIONS (in millimeters)



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