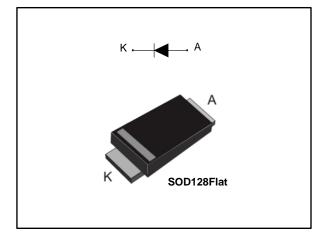


STPS360

Power Schottky rectifier

Datasheet - production data



Description

This high voltage Schottky barrier rectifier device is packaged in SOD128Flat and designed for high frequency miniature switched mode power supplies and on board DC to DC converters.

Table 1	: Device	summary
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······				
Value				
3 A				
60 V				
175 °C				
0.49 V				

Features

- Negligible switching losses
- High junction temperature capability
- Low leakage current
- Good trade-off between leakage current and forward voltage drop
- Avalanche specification
- ECOPACK[®] compliant component

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This is information on a product in full production.

1 Characteristics

Table 2: Absolute ratings (limiting values at 25 °C, unless otherwise specified)

Symbol	Pa	Value	Unit	
Vrrm	Repetitive peak reverse voltag	Repetitive peak reverse voltage		V
IF(AV)	Average forward current	Average forward current $T_{L} = 140 \text{ °C}, \delta = 0.5$, square pulse		А
IFSM	Surge non repetitive forward current	t _p = 10 ms sinusoidal	65	А
Parm	Repetitive peak avalanche power $t_p = 10 \ \mu s, T_j = 125 \ ^\circ C$		140	W
T _{stg}	Storage temperature range		-65 to +175	°C
Tj	Operating junction temperature	e range ⁽¹⁾	-40 to +175	°C

Notes:

 $^{(1)}(dP_{tot}/dT_j) < (1/R_{th(j-a)})$ condition to avoid thermal runaway for a diode on its own heatsink.

Table	3:	Thermal	parameters
Table	υ.	1 normai	parameters

Symbol	Parameter	Max. value	Unit
Rth(j-l)	Junction to lead	16	°C/W

Symbol	Parameter	Test conditions		Min.	Тур.	Max.	Unit
I _R ⁽¹⁾	Poveras laskage surrent	T _j = 25 °C	V _R = 60 V	-		150	μA
IR	Reverse leakage current	T _j = 125 °C	$v_R = 00 v$	-	20	30	mA
	V _F ⁽²⁾ Forward voltage drop	T _j = 25 °C	I _F = 3 A	-		0.61	
N (2)		T _j = 125 °C		-	0.49	0.58	V
V F'-7		T _j = 25 °C		-		0.80	v
		T _j = 125 °C	I _F = 6 A	-	0.62	0.72	

Table 4: Static electrical characteristics

Notes:

 $^{(1)}$ Pulse test: tp = 5 ms, δ < 2% $^{(2)}$ Pulse test: tp = 380 μ s, δ < 2%

To evaluate the conduction losses use the following equation:

$P = 0.44 \text{ x } I_{F(AV)} + 0.047 \text{ x } I_{F^{2}(RMS)}$

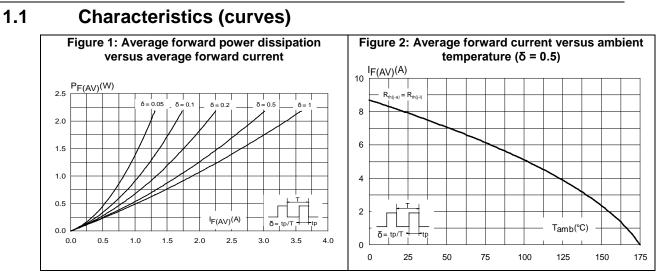
For more information, please refer to the following application notes related to the power losses.

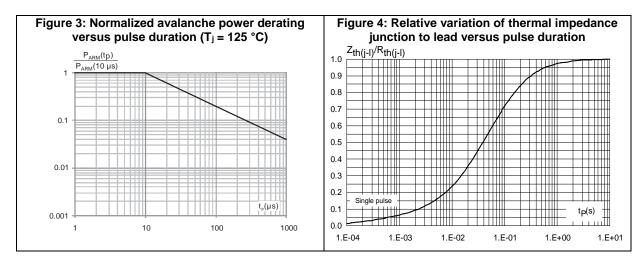
- AN604 (Calculation of conduction losses in a power rectifier)
- AN4021 (Calculation of reverse losses in a power diode)

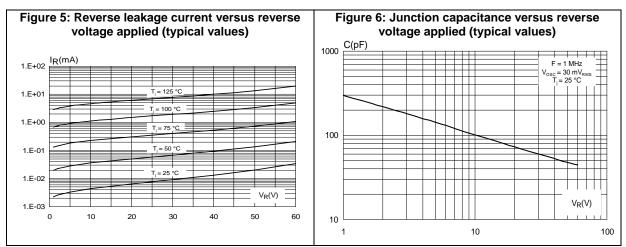


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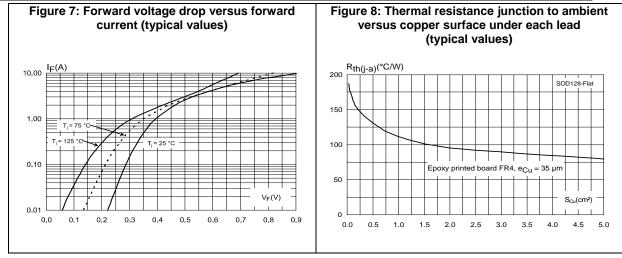


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Characteristics

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2 Package information

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK[®] packages, depending on their level of environmental compliance. ECOPACK[®] specifications, grade definitions and product status are available at: *www.st.com*. ECOPACK[®] is an ST trademark.

- Epoxy meets UL94, V0
- Lead-free package

2.1 SOD128Flat package information

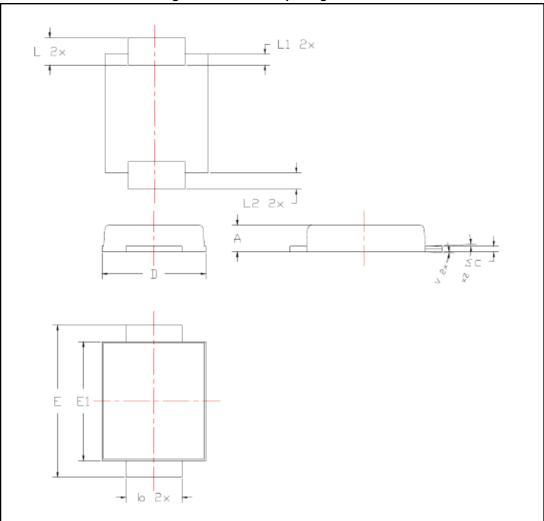


Figure 9: SOD128Flat package outline



Package information

STPS360

	Table 5: SOD128Flat package mechanical data					
		Dimensions				
Ref.	Millir	Millimeters		hes		
	Min.	Max.	Min.	Max.		
А	0.93	1.03	0.037	0.041		
b	1.69	1.81	0.067	0.071		
С	0.10	0.22	0.004	0.009		
D	2.30	2.50	0.091	0.098		
E	4.60	4.80	0.181	0.189		
E1	3.70	3.90	0.146	0.154		
L	0.55	0.85	0.026	0.033		
L1	0.30	0.30 typ.		2 typ.		
L2	0.45	ō typ.	0.018	З typ.		

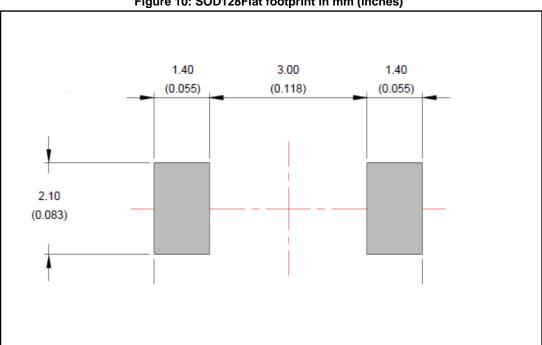


Figure 10: SOD128Flat footprint in mm (inches)



3 Ordering information

Table 6: Ordering information					
Order code	Order code Marking Package Weight Base qty. Delivery mode				
STPS360AF	360F	SOD128Flat	26.4 mg	3000	Tape and reel

4 Revision history

Table	7.	Document	revision	history
Table		Document	164131011	matory

Date	Revision	Changes
01-Jul-2016	1	Initial release.



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