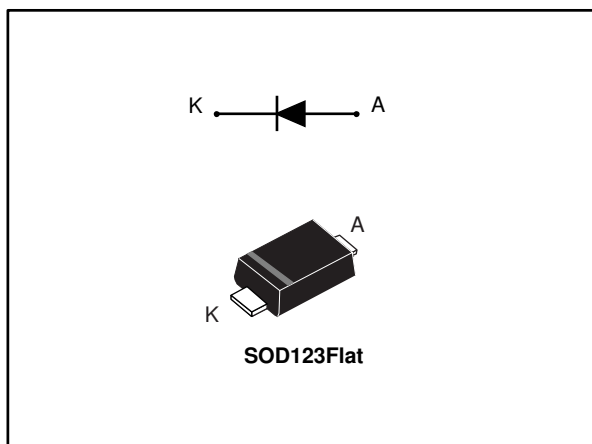


## Power Schottky rectifier

Datasheet - production data



### Description

Single chip Schottky rectifiers suited to surface mounting and especially intended for use in high frequency converters, free-wheeling and reverse polarity protection..

**Table 1: Device summary**

Symbol	Value
$I_{F(AV)}$	2 A
$V_{RRM}$	100 V
$V_F$ (typ.)	0.60 V
$T_j$ (max.)	175 °C

### Features

- High junction temperature capability
- Low leakage current
- Negligible switching losses
- Avalanche capability specified
- ECOPACK<sup>®</sup>2 compliant component

# 1 Characteristics

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

Symbol	Parameter	Value	Unit
V <sub>RRM</sub>	Repetitive peak reverse voltage	100	V
I <sub>F(AV)</sub>	Average forward current	T <sub>L</sub> = 140 °C/ δ = 0.5, square wave	A
I <sub>FSM</sub>	Surge non repetitive forward current	t <sub>p</sub> = 10 ms sinusoidal	A
P <sub>ARM</sub>	Repetitive peak avalanche power	t <sub>p</sub> = 10 μs, T <sub>j</sub> = 125 °C	W
T <sub>stg</sub>	Storage temperature range	-65 to +175	°C
T <sub>j</sub>	Maximum operating junction temperature <sup>(1)</sup>	-40 to +175	

**Notes:**

<sup>(1)</sup>(dP<sub>tot</sub>/dT<sub>j</sub>) < (1/R<sub>th(j-a)</sub>) condition to avoid thermal runaway for a diode on its own heatsink.

**Table 3: Thermal parameters**

Symbol	Parameter	Max. value	Unit
R <sub>th(j-l)</sub>	Junction to lead	20	°C/W

**Table 4: Static electrical characteristics**

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I <sub>R</sub> <sup>(1)</sup>	Reverse leakage current	T <sub>j</sub> = 25 °C	V <sub>R</sub> = V <sub>RRM</sub>	-	1	μA
		T <sub>j</sub> = 125 °C		-	0.2	0.5
V <sub>F</sub> <sup>(2)</sup>	Forward voltage drop	T <sub>j</sub> = 25 °C	I <sub>F</sub> = 2 A	-	0.86	V
		T <sub>j</sub> = 125 °C		-	0.65	
		T <sub>j</sub> = 25 °C	I <sub>F</sub> = 4 A	-	0.96	
		T <sub>j</sub> = 125 °C		-	0.75	

**Notes:**

<sup>(1)</sup>Pulse test: t<sub>p</sub> = 5 ms, δ < 2%

<sup>(2)</sup>Pulse test: t<sub>p</sub> = 380 μs, δ < 2%

To evaluate the conduction losses, use the following equation:

$$P = 0.57 \times I_{F(AV)} + 0.065 \times I_{F(RMS)}^2$$

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)

### 1.1 Characteristics (curves)

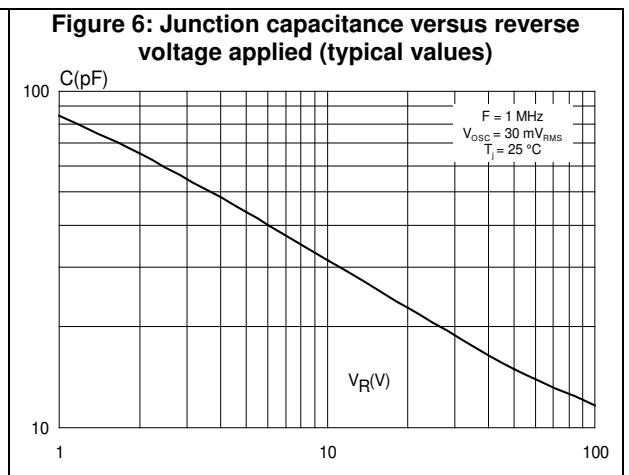
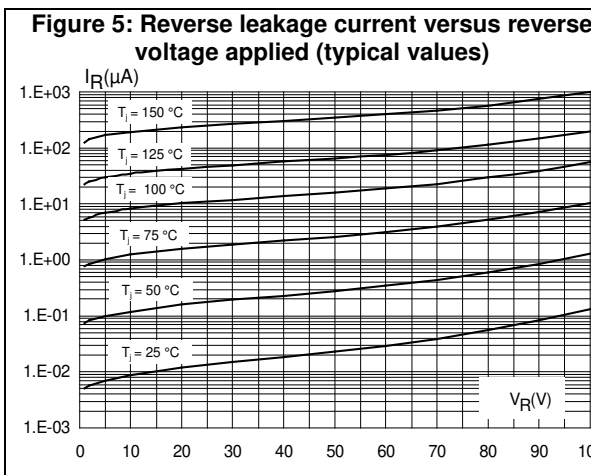
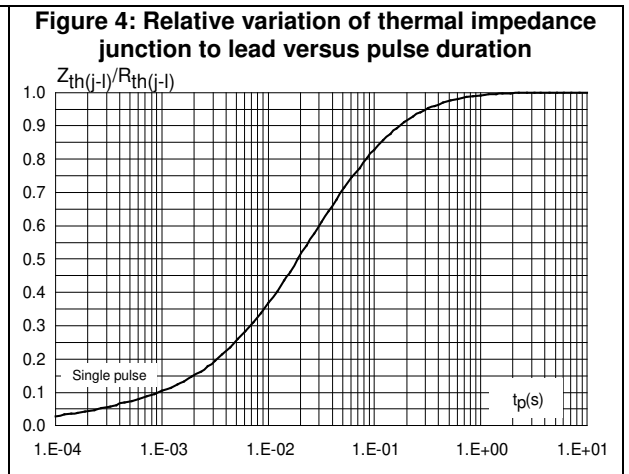
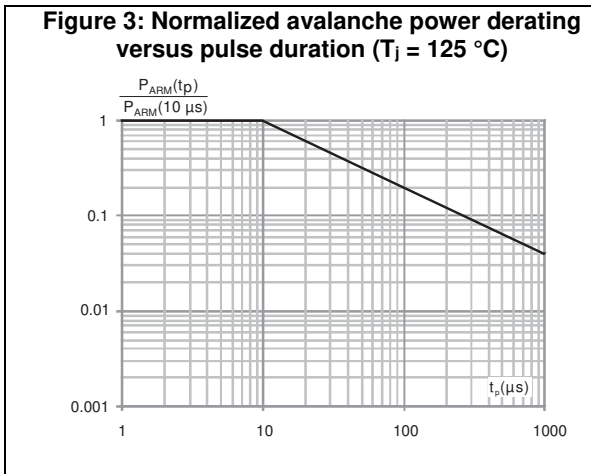
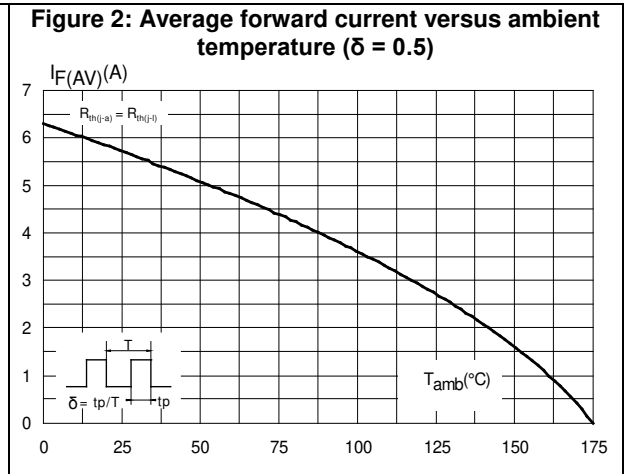
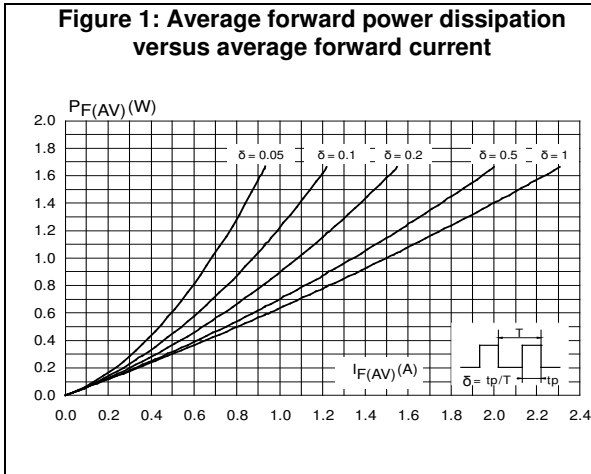


Figure 7: Forward voltage drop versus forward current (typical values)

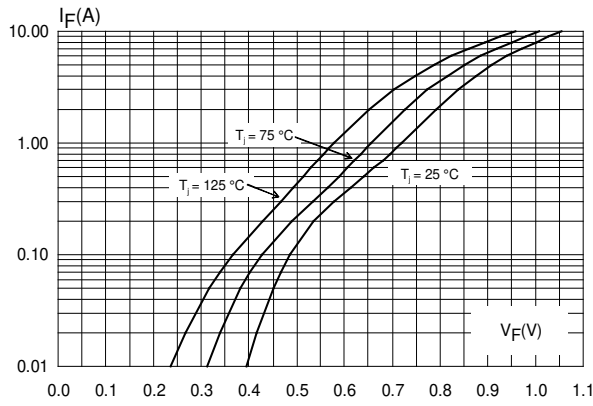
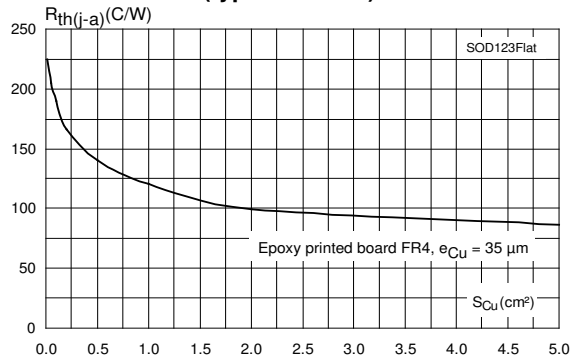


Figure 8: Thermal resistance junction to ambient versus copper surface under each lead (typical values)



## 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](http://www.st.com). ECOPACK® is an ST trademark.

- Epoxy meets UL94, V0
- Cooling method: by conduction (C)

### 2.1 SOD123Flat package information

Figure 9: SOD123Flat package outline

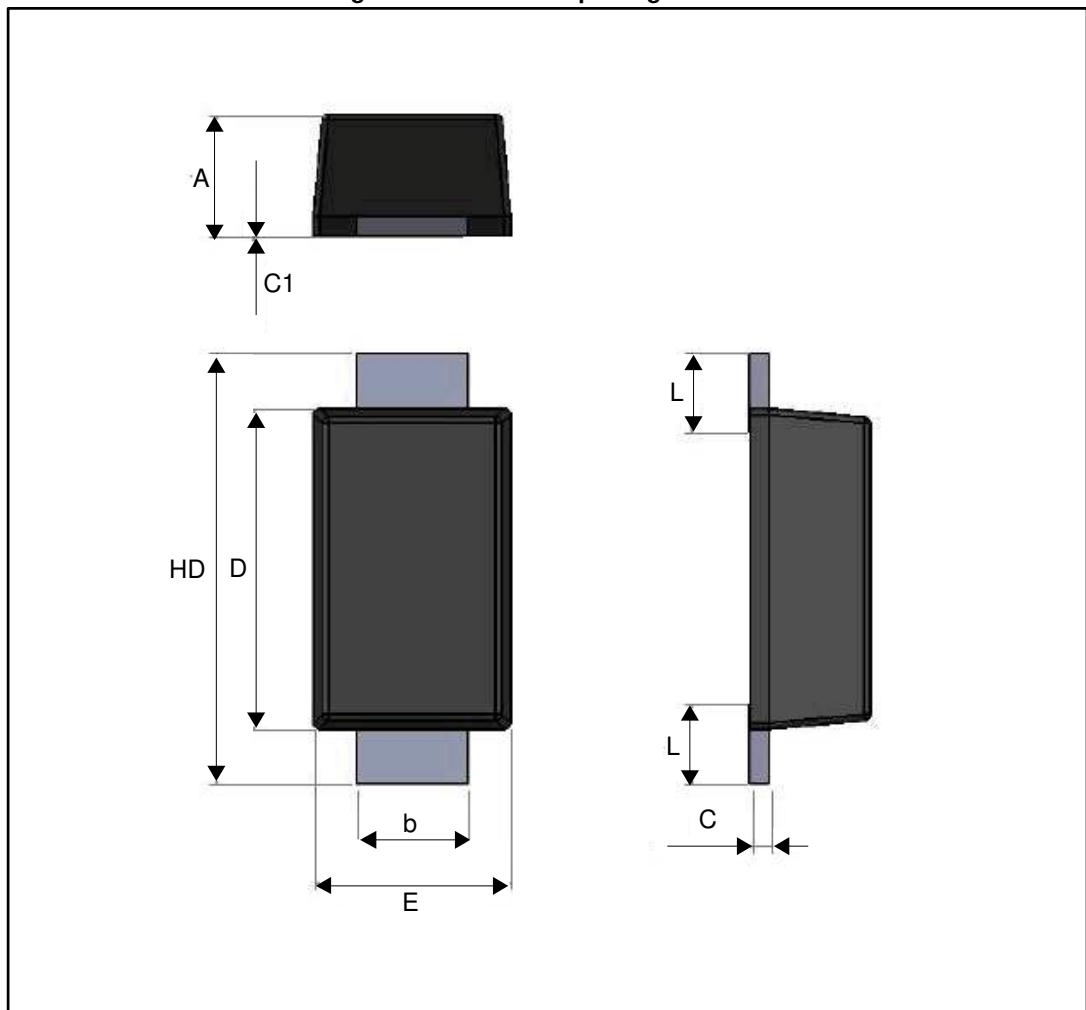
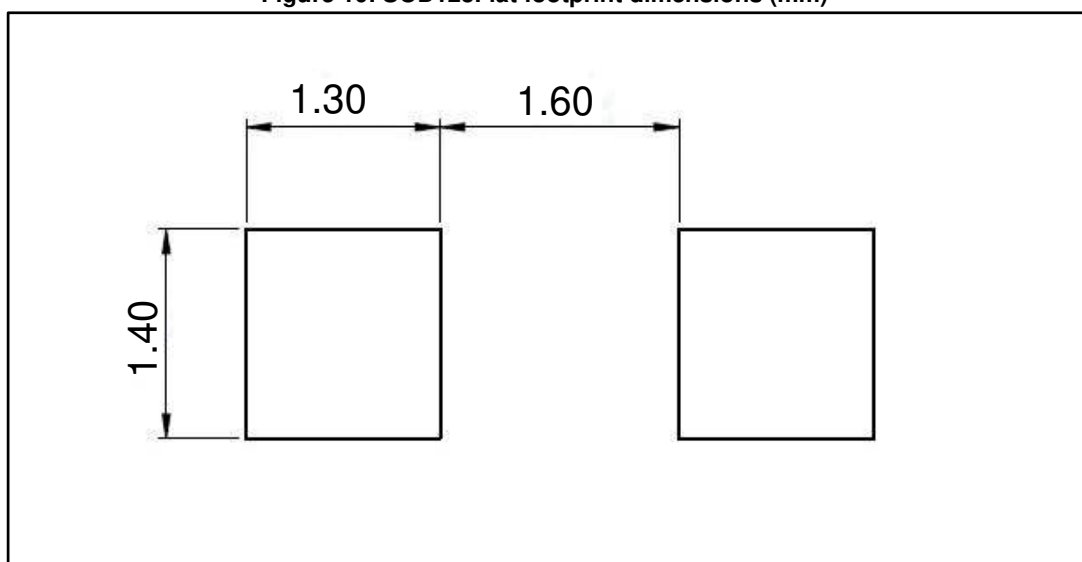


Table 5: SOD123Flat package mechanical data

Ref.	Dimensions		
	Millimeters		
	Min.	Typ.	Max.
A	0.86	0.98	1.10
b	0.80	0.90	1.00
c	0.08	0.15	0.25
c1	0.00		0.10
D	2.50	2.60	2.70
E	1.50	1.60	1.80
HD	3.30	3.50	3.70
L	0.45	0.65	0.85

Figure 10: SOD123Flat footprint dimensions (mm)



### 3 Ordering information

Table 6: Ordering information

Order code	Marking	Package	Weight	Base qty.	Delivery mode
STPS2H100ZF	2H1	SOD123Flat	12.5 mg	3000	Tape and reel

### 4 Revision history

Table 7: Document revision history

Date	Revision	Changes
19-Aug-2016	1	Initial release.

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