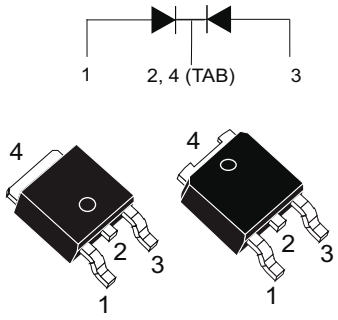
STPS660CB

Power Schottky rectifier

Datasheet – production data



DPAK

Description

High voltage dual Schottky rectifier suited to switch mode power supplies and other power converters.

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

Table 1. Device summary

Symbol	Value
$I_{F(AV)}$	2 x 3 A
V_{RRM}	60 V
V_F(typ)	0.55 V

Features

- Negligible switching losses
- Low forward voltage drop
- Low capacitance
- High reverse avalanche surge capability
- Tape and reel packing
- ECOPACK®2 compliant component for DPAK on demand

1 Characteristics

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

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive peak reverse voltage		60	V
$I_{F(RMS)}$	Forward rms current		6	A
$I_{F(AV)}$	Average forward current, $\delta = 0.5$ square wave	T_c = 115 °C	3	A
I_{FSM}	Surge non repetitive forward current	t_p = 10 ms sinusoidal	50	A
T_{stg}	Storage temperature range		-65 to +150	°C
T_j	Maximum operating junction temperature(1)		125	°C

1. $\frac{dPtot}{dTj} < \frac{1}{Rth(j-a)}$ condition to avoid thermal runaway for a diode on its own heatsink

Table 3. Thermal parameters

Symbol	Parameter		Max. value	Unit
$R_{th(j-c)}$	Junction to case	per diode	3.5	°C/W
		per device	2	
$R_{th(c)}$	coupling		0.5	

Table 4. Static electrical characteristics (per diode)

Symbol	Parameter	Test conditions		Min.	Typ	Max.	Unit
I_R(1)	Reverse leakage current	T_j = 25 °C	V_R = 60 V	-	-	30	µA
		T_j = 125 °C		-	2.5	10	mA
V_F(2)	Forward voltage drop	T_j = 25 °C	I_F = 3 A	-	-	0.65	V
		T_j = 125 °C		-	0.55	0.59	

1. Pulse test: t_p = 5 ms, δ < 2%
2. Pulse test: t_p = 380 µs, δ < 2%

To evaluate the conduction losses, use the following equation:

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

Table 5. Dynamic electrical characteristics (per diode)

Symbol	Test conditions		Min.	Typ.	Max.	Unit
C	Junction capacitance	V_R = 0 V, F = 1 MHz, T_j = 25 °C	-	815	-	pF

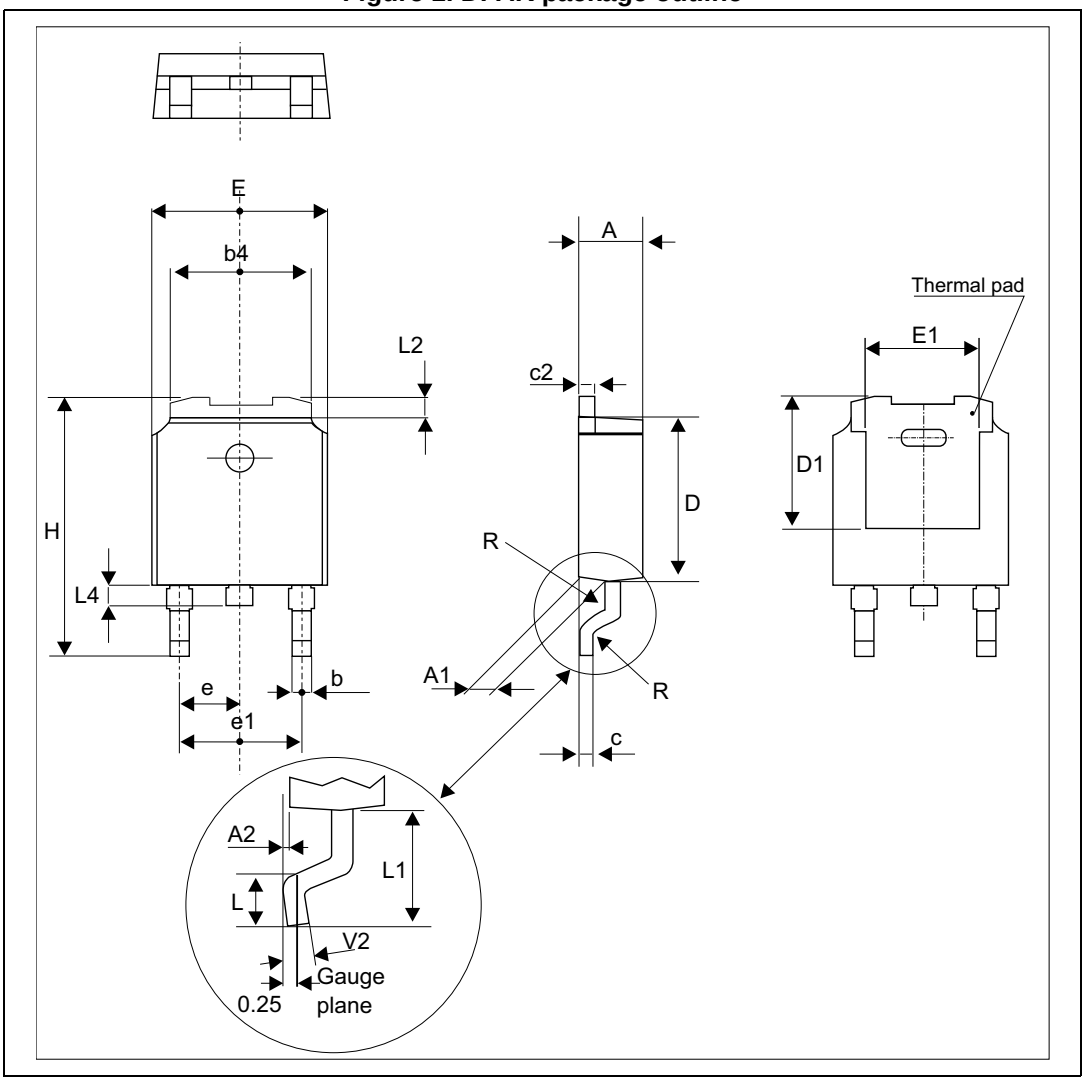
2 Package Information

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

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.

2.1 DPAK package information

Figure 1. DPAK package outline

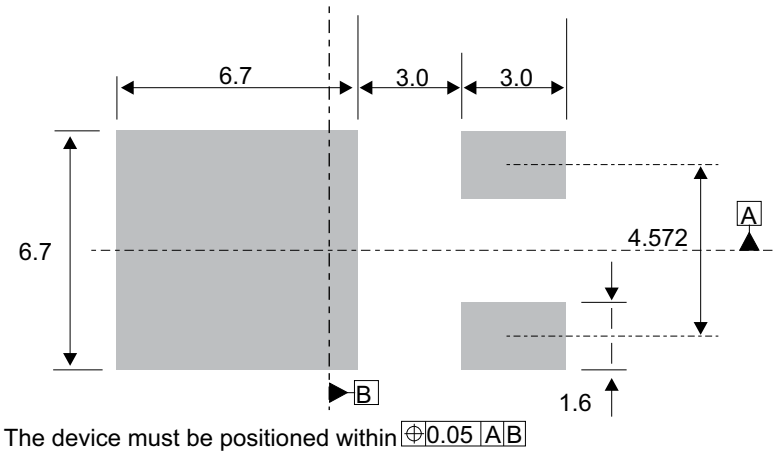


Note: This package drawing may slightly differ from the physical package. However, all the specified dimensions are guaranteed.

Table 6. DPAK package mechanical data

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.18		2.40	0.085		0.094
A1	0.90		1.10	0.035		0.043
A2	0.03		0.23	0.001		0.009
b	0.64		0.90	0.025		0.035
b4	4.95		5.46	0.194		0.214
c	0.46		0.61	0.018		0.024
c2	0.46		0.60	0.018		0.023
D	5.97		6.22	0.235		0.244
D1	4.95		5.60	0.194		0.220
E	6.35		6.73	0.250		0.264
E1	4.32		5.50	0.170		0.216
e		2.28			0.090	
e1	4.40		4.70	0.173		0.185
H	9.35		10.40	0.368		0.409
L	1.00		1.78	0.039		0.070
L2			1.27			0.050
L4	0.60		1.02	0.023		0.040
V2	-8°		+8°	-8°		8°

Figure 2. DPAK footprint dimensions (in mm)



3 Ordering information

Table 7. Ordering information

Order code	Marking	Package	Weight	Base qty	Delivery mode
STPS660CB-TR	S6 60C	DPAK	0.32 g	2500	Tape and reel

4 Revision history

Table 8. Document revision history

Date	Revision	Changes
Jul-1998	1C	Previous version
18-Oct-2013	2	Updated package footprint graphic.
07-Jan-2015	3	Updated DPAK package information.
16-May-2017	4	Updated DPAK package information.

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