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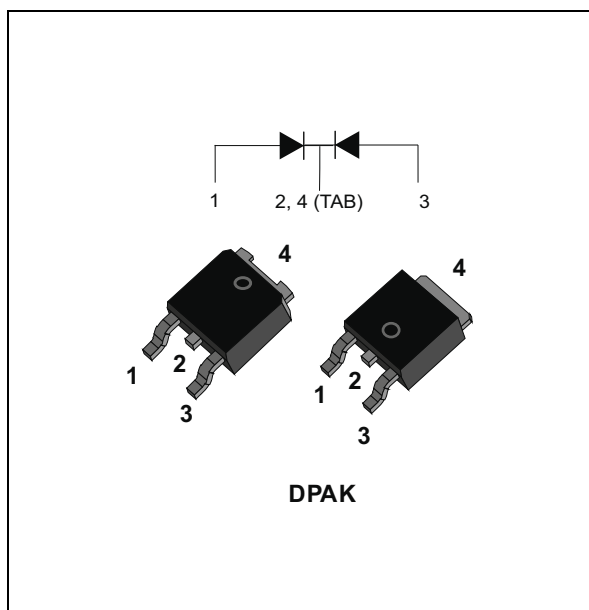
sales@integrated-circuit.com



STPS660CB

Power Schottky rectifier

Datasheet — production data



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
$V_F(\text{typ})$	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

Characteristics

STPS660CB

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, square wave	$T_c = 120\text{ °C}, \delta = 0.5$	3	A
I_{FSM}	Surge non repetitive forward current	$t_p = 10\text{ ms sinusoidal}$	50	A
T_{stg}	Storage temperature range		-65 to + 150	°C
T_j	Maximum operating junction temperature ⁽¹⁾		125	°C

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

Table 3. Thermal parameters

Symbol	Parameter		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	$T_j = 25\text{ °C}$	$V_R = 60\text{ V}$	-	-	30	μA
		$T_j = 125\text{ °C}$		-	2.5	10	mA
$V_F^{(2)}$	Forward voltage drop	$T_j = 25\text{ °C}$	$I_F = 3\text{ A}$	-	-	0.65	V
		$T_j = 125\text{ °C}$		-	0.55	0.59	

1. Pulse test: $t_p = 5\text{ ms}, \delta < 2\%$
 2. Pulse test: $t_p = 380\text{ μs}, \delta < 2\%$

To evaluate the conduction losses use the following equation:

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

Table 5. Dynamic electrical characteristics (per diode)

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

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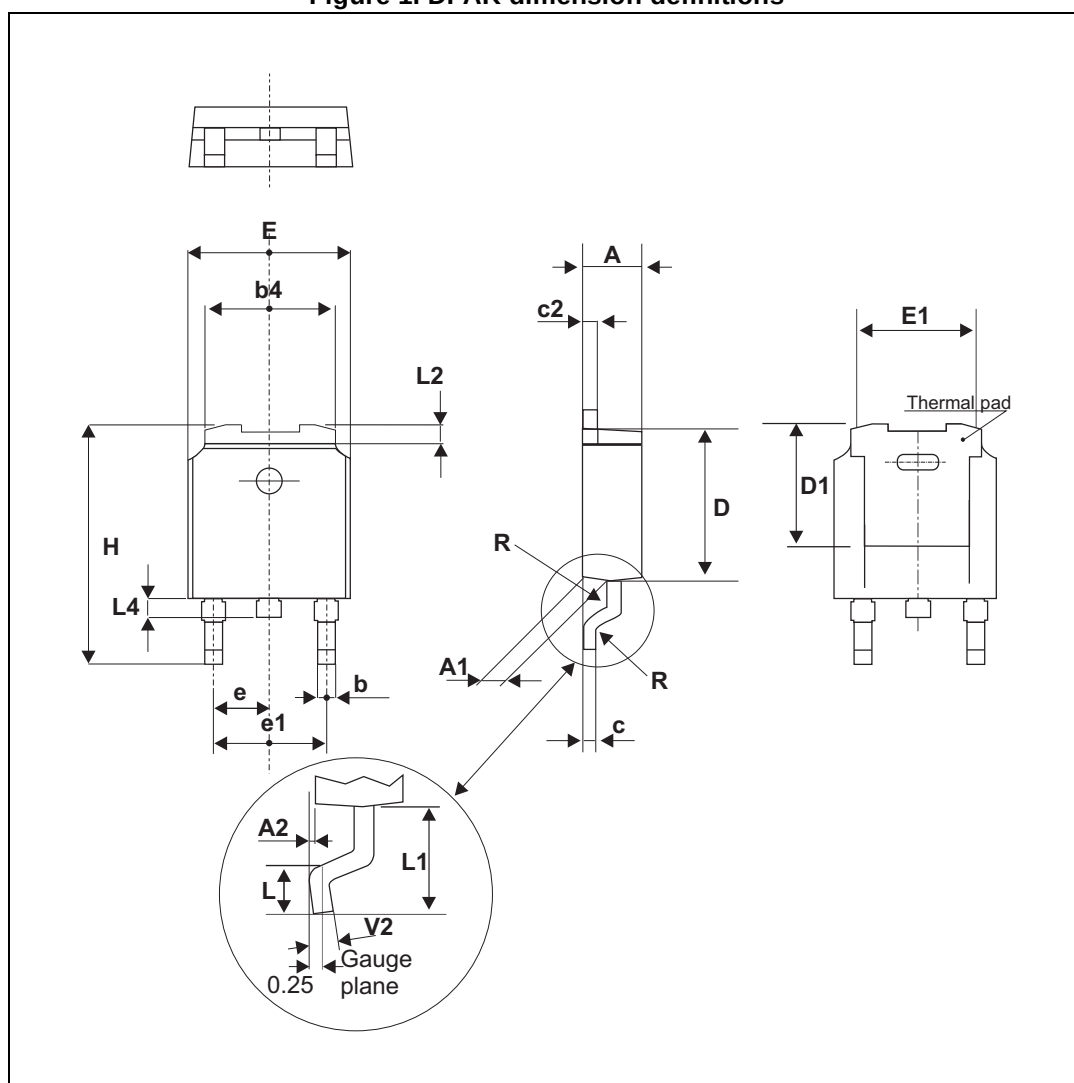
Package Information

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.

Figure 1. DPAK dimension definitions



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

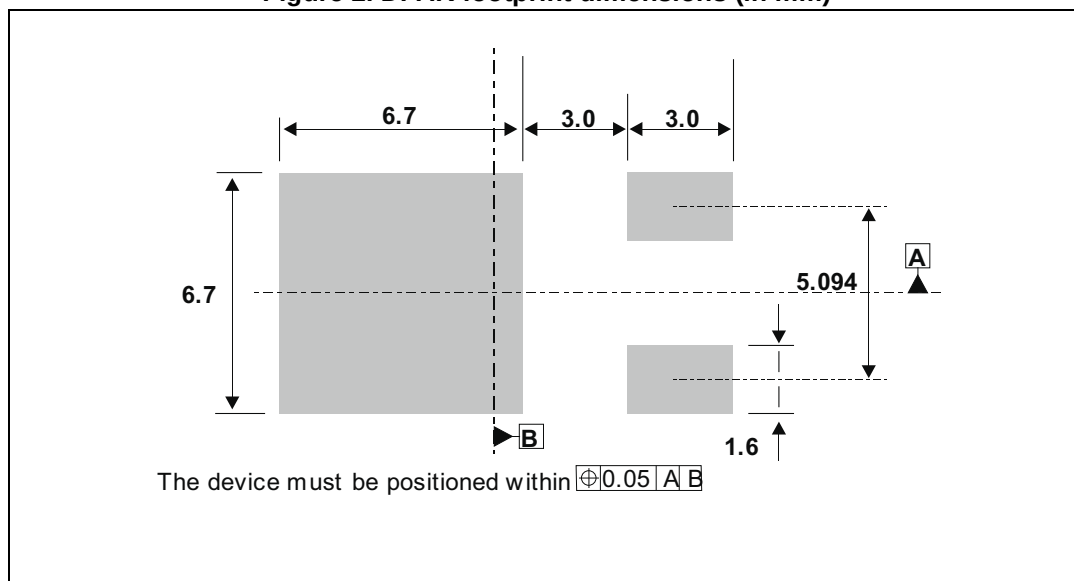
Package Information

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Table 6. DPAK dimension values

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.18		2.40	0.085		0.094
A1	0.90		1.1	0.035		0.043
A2	0.03		0.23	0.001		0.01
b	0.64		0.90	0.025		0.035
b4	4.95		5.46	0.195		0.215
c	0.46		0.61	0.018		0.024
c2	0.46		0.60	0.018		0.024
D	5.97		6.22	0.235		0.245
D1	5.10			0.201		
E	6.35		6.73	0.250		0.265
E1	4.32			0.170		
e1	4.4		4.7	0.173		0.185
H	9.35		10.40	0.368		0.407
L	1.0		1.78	0.039		0.070
L2			1.27			0.05
L4	0.6		1.02	0.024		0.040
V2	0°		8°	0°		8°

Figure 2. DPAK footprint dimensions (in mm)



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Ordering information

3 Ordering information

Table 7. Ordering information

Order code	Marking	Package	Weight	Base qty	Delivery mode
STPS660CB-TR	S660C	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.

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