1 Characteristics

Table 2. Thermal Parameters

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case	2.5	°C/W

Table 3. Static Electrical Characteristics

Symbol	Parameter	Tests conditions		Min.	Typ	Max.	Unit
I_R (1)	Reverse leakage current	T_j = 25° C	$V_R = V_{RRM}$			1	mA
		T_j = 100° C			15	40	
V_F (1)	Forward voltage drop	T_j = 25° C	I_F = 8 A			0.49	V
		T_j = 125° C			0.35	0.40	
		T_j = 25° C	I_F = 16 A			0.63	
		T_j = 125° C			0.448	0.57	

1. Pulse test:* t_p = 380 µs, $\delta < 2\%$

To evaluate the conduction losses use the following equation: $P = 0.23 \times I_{F(AV)} + 0.021\ I_F^2{}_{(RMS)}$

Figure 1. Average forward power dissipation versus average forward current

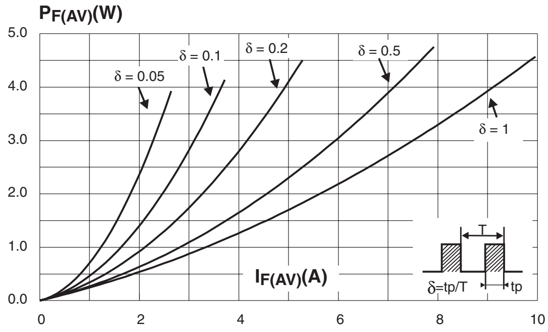


Figure 2. Average forward current versus ambient temperature (δ = 0.5)

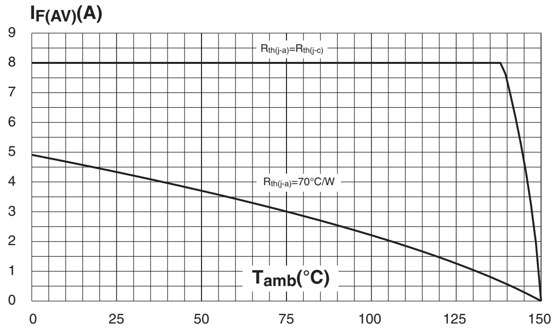


Figure 3. Normalized avalanche power derating versus pulse duration

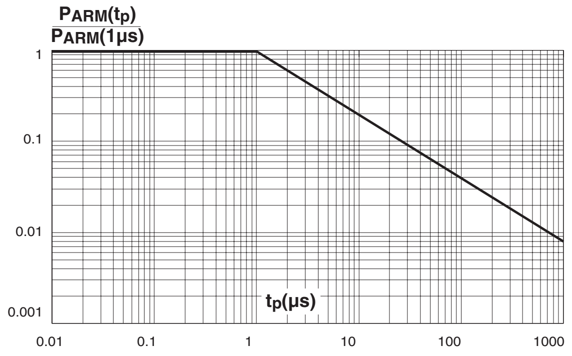


Figure 4. Normalized avalanche power derating versus junction temperature

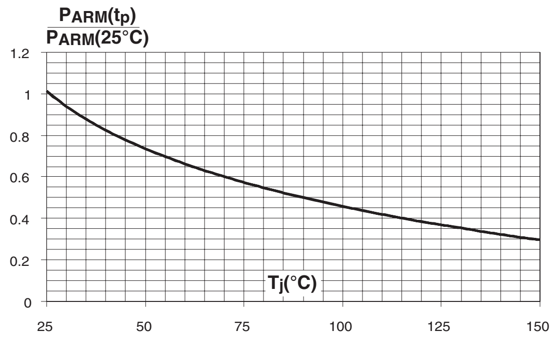


Figure 5. Non repetitive surge peak forward current versus overload duration (maximum values)

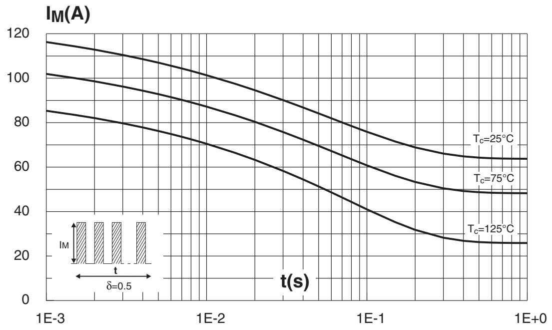


Figure 6. Relative variation of thermal impedance junction to ambient versus pulse duration

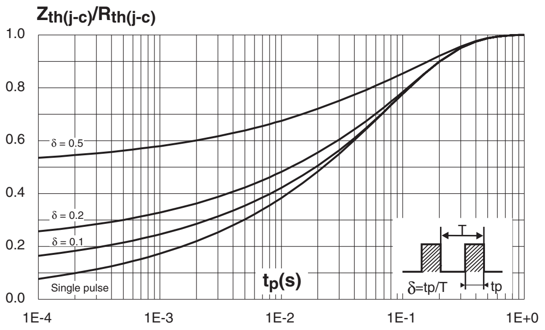


Figure 7. Reverse leakage current versus reverse voltage applied (typical values)

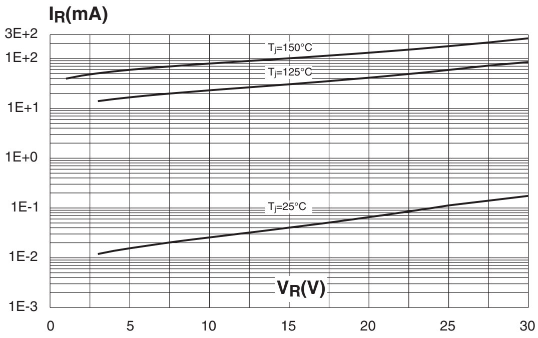


Figure 8. Junction capacitance versus reverse voltage applied (typical values)

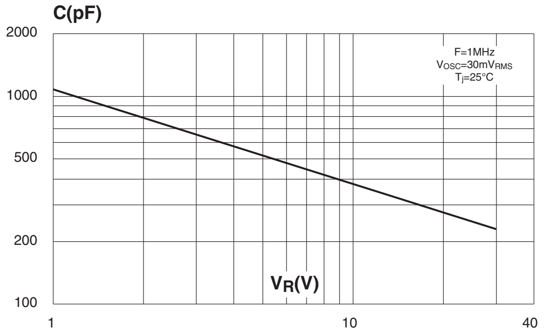


Figure 9. Forward voltage drop versus forward current

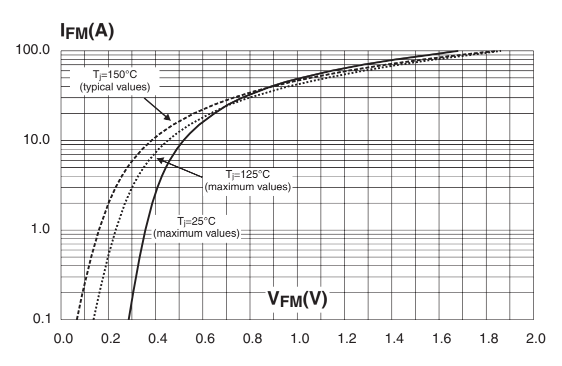
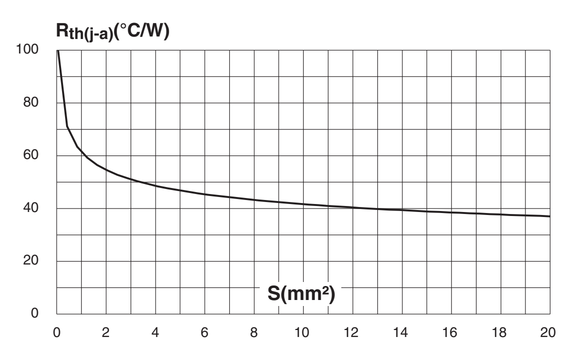
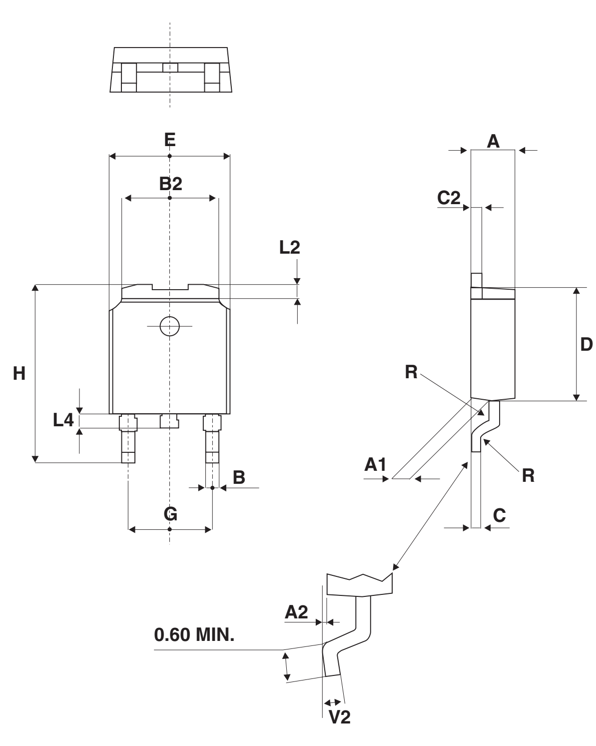


Figure 10. Thermal resistance junction to ambient versus copper surface under tab (epoxy printed board FR4, Cu = 35 µm) (DPAK)



2 Packaging information

Table 4. DPAK dimensions



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max	Min.	Max.
A	2.20	2.40	0.086	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
B2	5.20	5.40	0.204	0.212
C	0.45	0.60	0.017	0.023
C2	0.48	0.60	0.018	0.023
D	6.00	6.20	0.236	0.244
E	6.40	6.60	0.251	0.259
G	4.40	4.60	0.173	0.181
H	9.35	10.10	0.368	0.397
L2	0.80 typ.		0.031 typ.	
L4	0.60	1.00	0.023	0.039
V2	0°	8°	0°	8°

Figure 11. DPAK footprint dimensions (in mm)

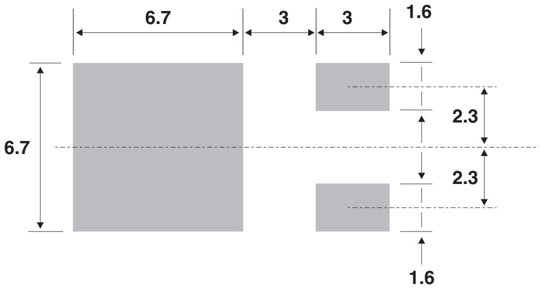
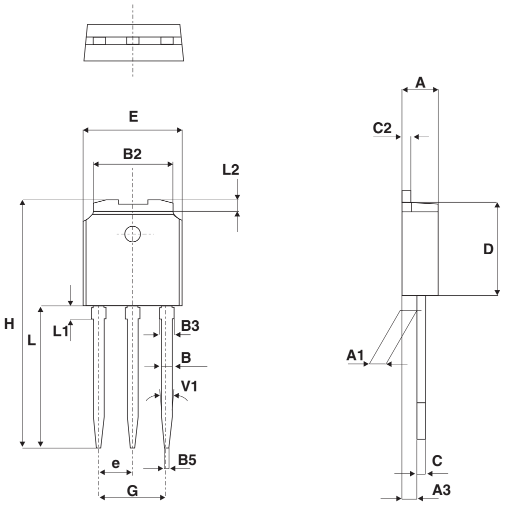


Table 5. IPAK Dimensions

<table>
<tr><td rowspan="22">
</td><th rowspan="3">REF.</th><th colspan="6">DIMENSIONS</th></tr>
<tr><th colspan="3">Millimeters</th><th colspan="3">Inches</th></tr>
<tr><th>Min.</th><th>Typ.</th><th>Max.</th><th>Min.</th><th>Typ.</th><th>Max.</th></tr>
<tr><td>A</td><td>2.20</td><td></td><td>2.40</td><td>0.086</td><td></td><td>0.094</td></tr>
<tr><td>A1</td><td>0.90</td><td></td><td>1.10</td><td>0.035</td><td></td><td>0.043</td></tr>
<tr><td>A3</td><td>0.70</td><td></td><td>1.30</td><td>0.027</td><td></td><td>0.051</td></tr>
<tr><td>B</td><td>0.64</td><td></td><td>0.90</td><td>0.025</td><td></td><td>0.035</td></tr>
<tr><td>B2</td><td>5.20</td><td></td><td>5.40</td><td>0.204</td><td></td><td>0.212</td></tr>
<tr><td>B3</td><td></td><td></td><td>0.95</td><td></td><td></td><td>0.037</td></tr>
<tr><td>B5</td><td></td><td>0.30</td><td></td><td></td><td>0.035</td><td></td></tr>
<tr><td>C</td><td>0.45</td><td></td><td>0.60</td><td>0.017</td><td></td><td>0.023</td></tr>
<tr><td>C2</td><td>0.48</td><td></td><td>0.60</td><td>0.019</td><td></td><td>0.023</td></tr>
<tr><td>D</td><td>6</td><td></td><td>6.20</td><td>0.236</td><td></td><td>0.244</td></tr>
<tr><td>E</td><td>6.40</td><td></td><td>6.60</td><td>0.252</td><td></td><td>0.260</td></tr>
<tr><td>e</td><td></td><td>2.28</td><td></td><td></td><td>0.090</td><td></td></tr>
<tr><td>G</td><td>4.40</td><td></td><td>4.60</td><td>0.173</td><td></td><td>0.181</td></tr>
<tr><td>H</td><td></td><td>16.10</td><td></td><td></td><td>0.634</td><td></td></tr>
<tr><td>L</td><td>9</td><td></td><td>9.40</td><td>0.354</td><td></td><td>0.370</td></tr>
<tr><td>L1</td><td>0.8</td><td></td><td>1.20</td><td>0.031</td><td></td><td>0.047</td></tr>
<tr><td>L2</td><td></td><td>0.80</td><td>1</td><td></td><td>0.031</td><td>0.039</td></tr>
<tr><td>V1</td><td></td><td>10°</td><td></td><td></td><td>10°</td><td></td></tr>
</table>

In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a Lead-free second level interconnect. The category of second level interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at: www.st.com.

3 Ordering information

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS8L30B	LS30	DPAK	0.30 g	75	Tube
STPS8L30B-TR	LS30			2500	Tape and reel
STPS8L30H	STPS8L30H	IPAK	0.35 g	75	Tube

4 Revision history

Date	Revision	Description of Changes
Jul-2002	2A	Previous update.
16-Apr-2005	3	IPAK package added.
01-Mar-2006	4	IPAK connector identifiers corrected on page 1. Ecopack statement added. Document reformatted to current standard.

Please Read Carefully:

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS EXPRESSLY APPROVED IN WRITING BY AN AUTHORIZE REPRESENTATIVE OF ST, ST PRODUCTS ARE NOT DESIGNED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS, WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

© 2006 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com

Downloaded from Arrow.com.