Contents

1 Electrical data 3
1.1 Maximum ratings 3
1.2 Thermal data 3

2 Electrical characteristics 4
2.1 Static 4
2.2 Dynamic 4
2.3 ESD protection characteristics 4
2.4 Moisture sensitivity level 4

3 Impedance 5

4 Typical performance 6

5 Package mechanical data 9

6 Revision history 13

1 Electrical data

1.1 Maximum ratings

Table 2. Absolute maximum ratings (T_{CASE} = 25°C)

Symbol	Parameter	Value	Unit
$V_{(BR)DSS}$	Drain-source voltage	25	V
V_{GS}	Gate-source voltage	-0.5 to +15	V
I_D	Drain current	7	A
P_{DISS}	Power dissipation (@ T_C = 70 °C)	26.7	W
T_J	Max. operating junction temperature	150	°C
T_{STG}	Storage temperature	-65 to +150	°C

1.2 Thermal data

Table 3. Thermal data

Symbol	Parameter	Value	Unit
R_{thJC}	Junction - case thermal resistance	3	°C/W

2 Electrical characteristics

T_{CASE} = +25 °C

2.1 Static

Table 4. Static

Symbol	Test conditions			Min	Typ	Max	Unit
I_{DSS}	V_{GS} = 0 V	V_{DS} = 25 V				1	µA
I_{GSS}	V_{GS} = 5 V	V_{DS} = 0 V				1	µA
$V_{GS(Q)}$	V_{DS} = 10 V	I_D = 250mA		3.2		4.8	V
$V_{DS(ON)}$	V_{GS} = 10 V	I_D = 1 A			0.27	0.31	V
C_{ISS}	V_{GS} = 0 V	V_{DS} = 7 V	f = 1 MHz		57		pF
C_{OSS}	V_{GS} = 0 V	V_{DS} = 7 V	f = 1 MHz		46		pF
C_{RSS}	V_{GS} = 0 V	V_{DS} = 7 V	f = 1 MHz		2		pF

2.2 Dynamic

Table 5. Dynamic

Symbol	Test conditions		Min	Typ	Max	Unit
P3dB	V_{DD} = 7.5 V, I_{DQ} = 250 mA	f = 870 MHz	8	9		W
G_P	V_{DD} = 7.5 V, I_{DQ} = 250 mA, P_{OUT} = 2 W, f = 870 MHz		13	15.5		dB
h_D	V_{DD} = 7.5 V, I_{DQ} = 250 mA, P_{OUT} = P3dB, f = 870 MHz		50	57		%
Load mismatch	V_{DD} = 9.5 V, I_{DQ} = 250 mA, P_{OUT} = 10 W, f = 870 MHz All phase angles		20:1			VSWR

2.3 ESD protection characteristics

Table 6. ESD protection characteristics

Test conditions	Class
Human body model	2
Machine model	M3

2.4 Moisture sensitivity level

Table 7. Moisture sensitivity level

Test methodology	Rating
J-STD-020B	MSL 3

3 Impedance

Figure 2. Current conventions

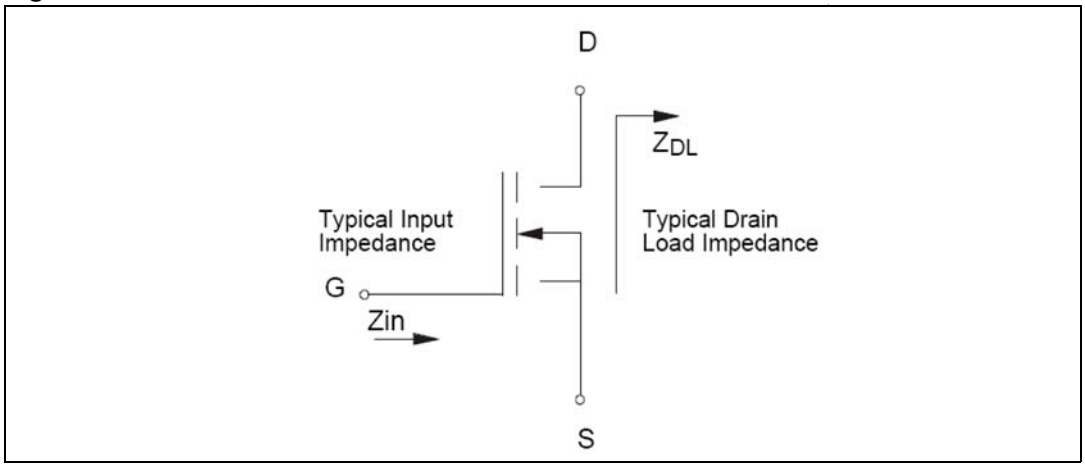


Table 8. Impedance data

Freq. (MHz)	Z_{IN} (Ω)	Z_{DL}(Ω)
870 MHz	TBD	TBD

4 Typical performance

Figure 3. Capacitances vs drain voltage

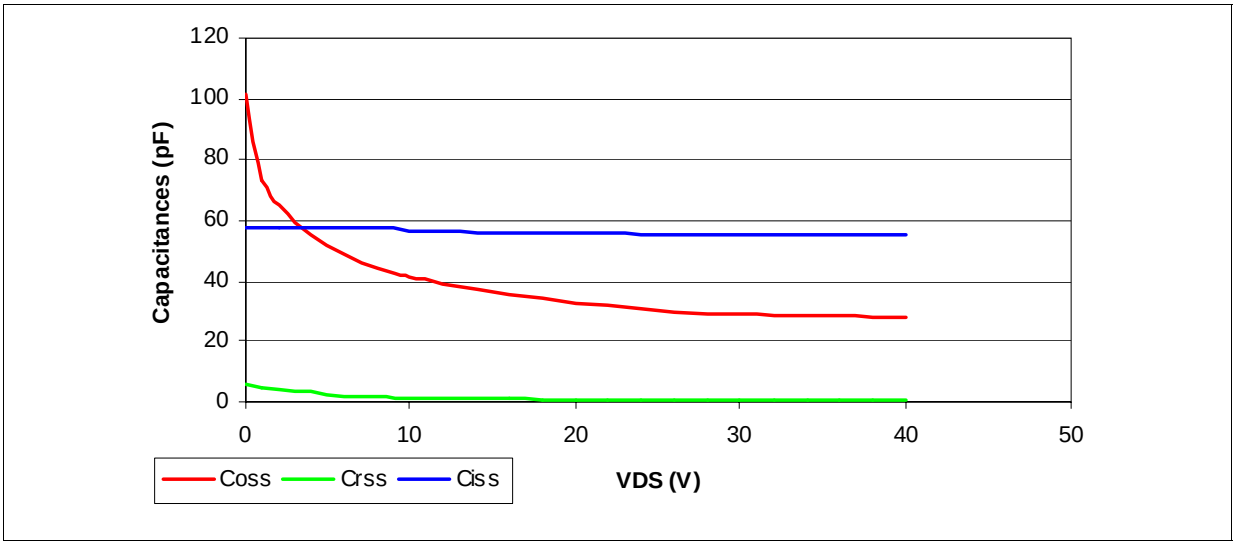


Figure 4. DC output characteristics

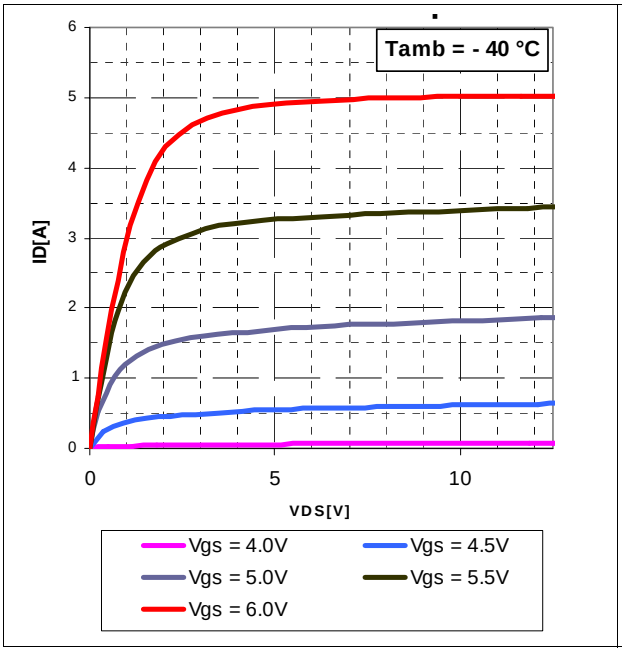


Figure 5. DC output characteristics

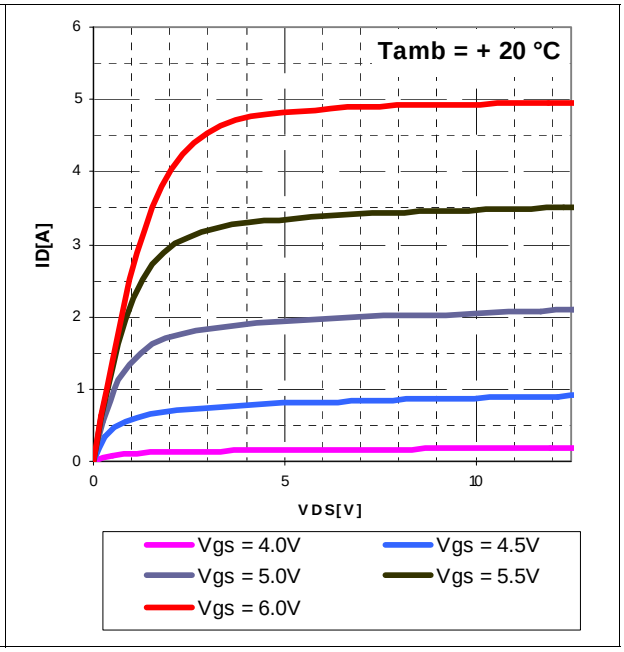


Figure 6. DC output characteristics

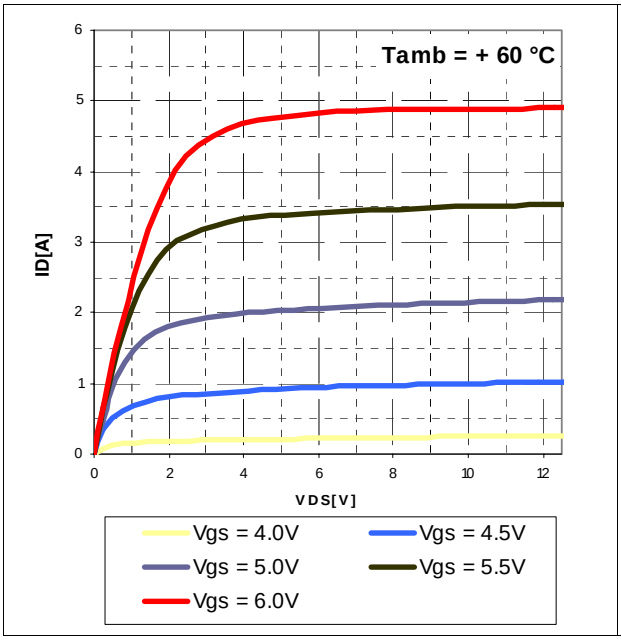


Figure 7. Output power and drain current vs gate voltage

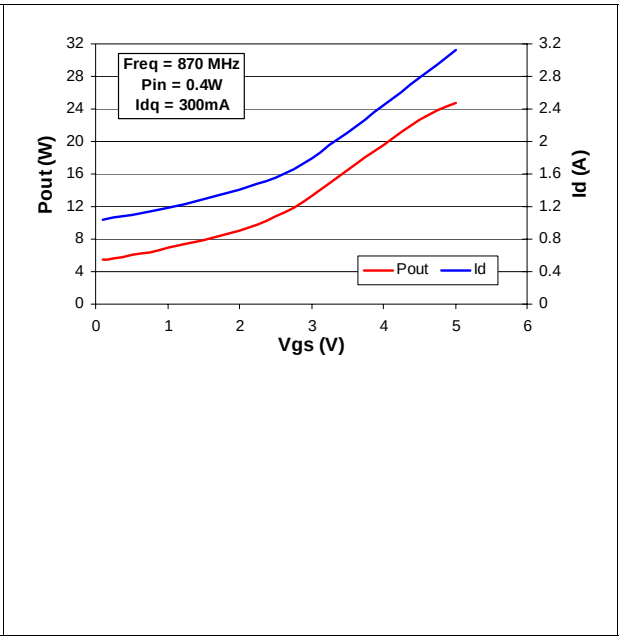


Figure 8. Output power vs supply voltage and input power

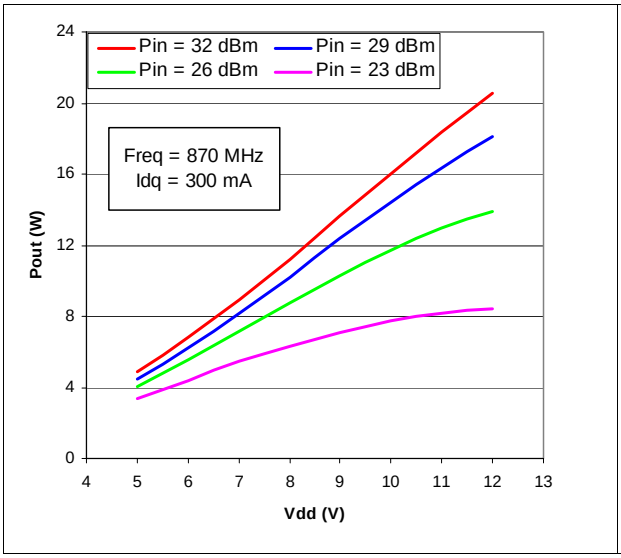


Figure 9. Gain and efficiency vs output power

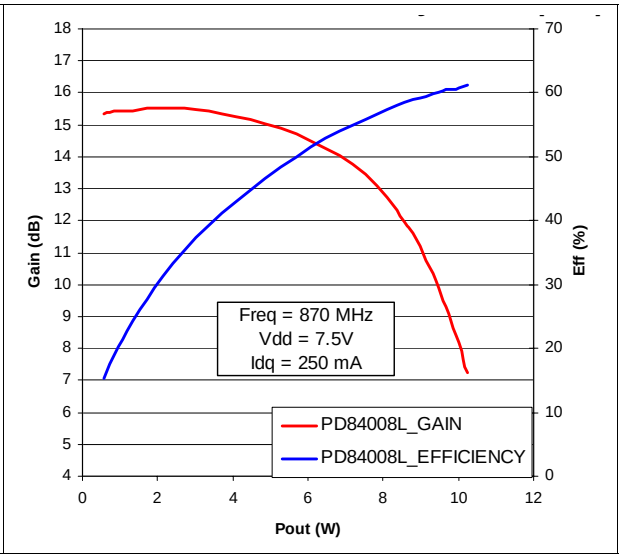
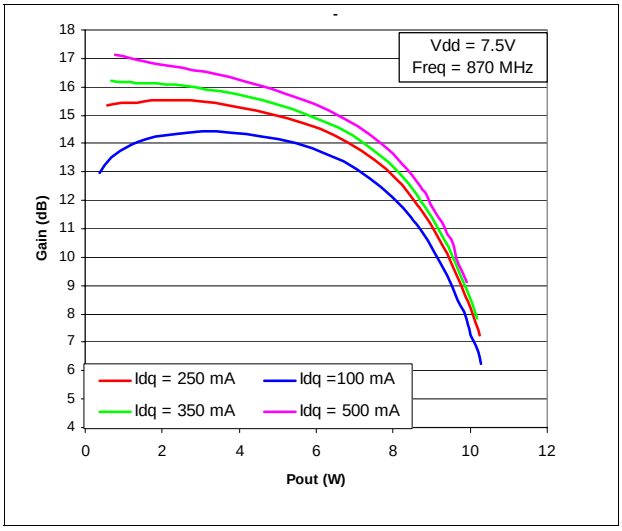


Figure 10. Gain vs output power and bias current



5 Package mechanical data

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.

Table 9. PowerFLAT™ (5x5) mechanical data

Dim.	mm			inch		
	Min	Typ	Max	Min	Typ	Max
A		0.90	1.00		0.035	0.039
A1		0.02	0.05		0.001	0.002
A3		0.24			0.009	
AA	0.15	0.25	0.35	0.006	0.01	0.014
b	0.43	0.51	0.58	0.017	0.020	0.023
c	0.64	0.71	0.79	0.025	0.028	0.031
D		5.00			0.197	
d		0.30			0.011	
E		5.00			0.197	
E2	2.49	2.57	2.64	0.098	0.101	0.104
e		1.27			0.050	
f		3.37			0.132	
g		0.74			0.03	
h		0.21			0.008	

Figure 11. PowerFLAT™ (5x5) package dimensions

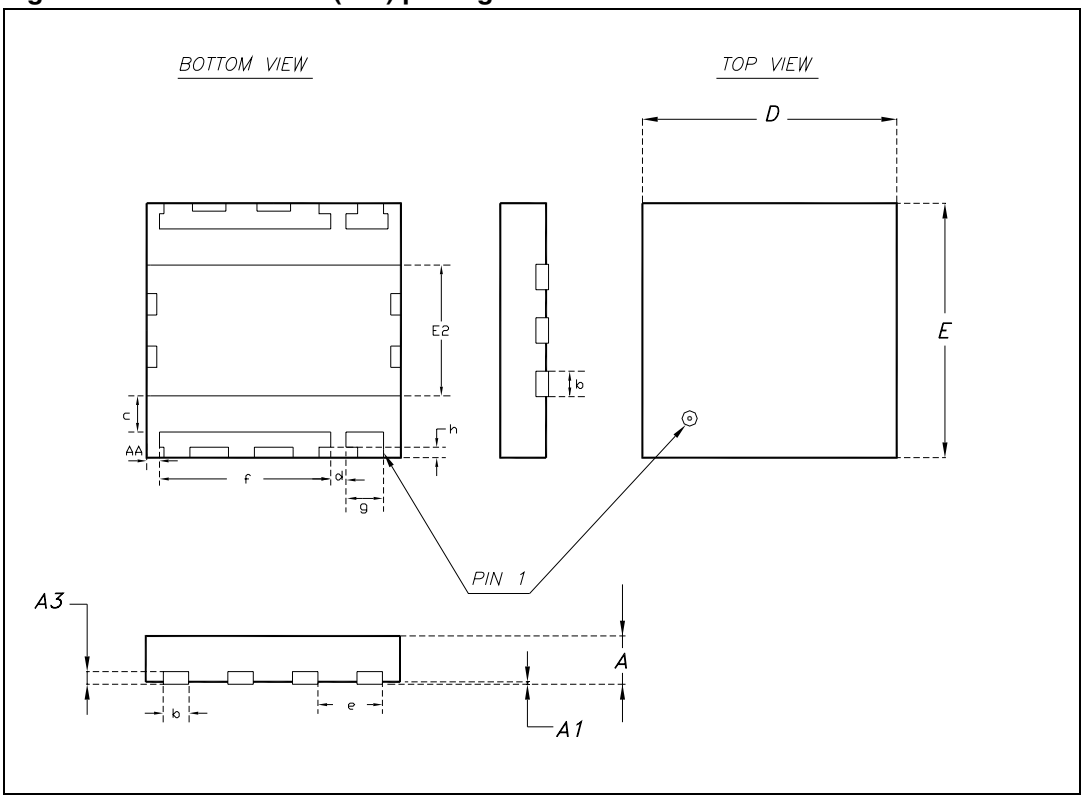


Table 10. Tape and reel dimensions

Dim.	Mm		
	Min	Typ	Max
Ao	5.15	5.25	5.35
Bo	5.15	5.25	5.35
Ko	1.0	1.1	1.2

Figure 12. Tape and reel dimensions

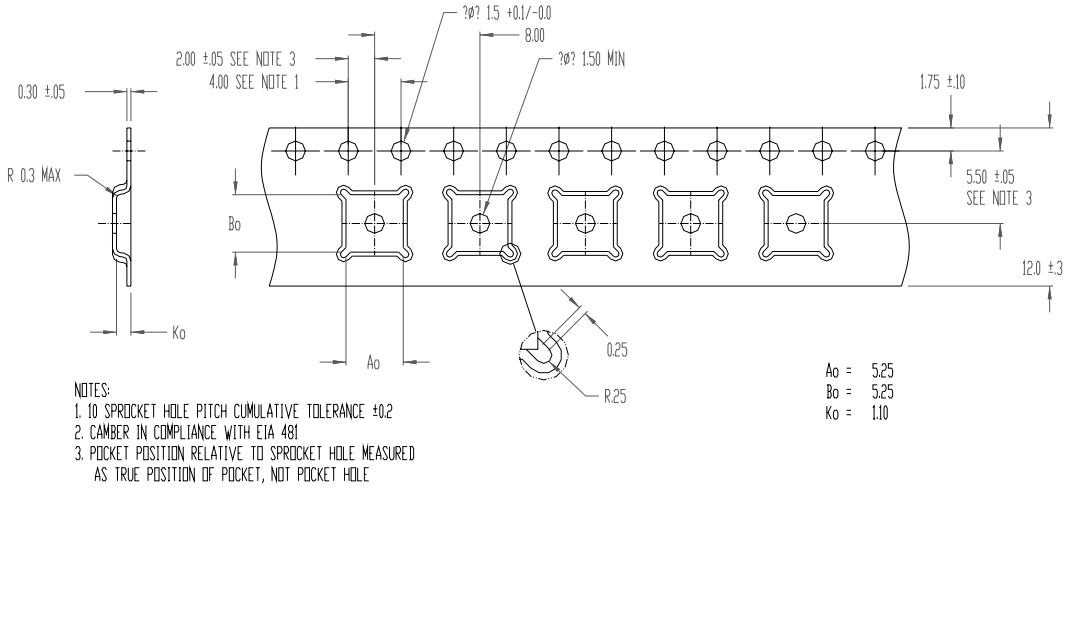
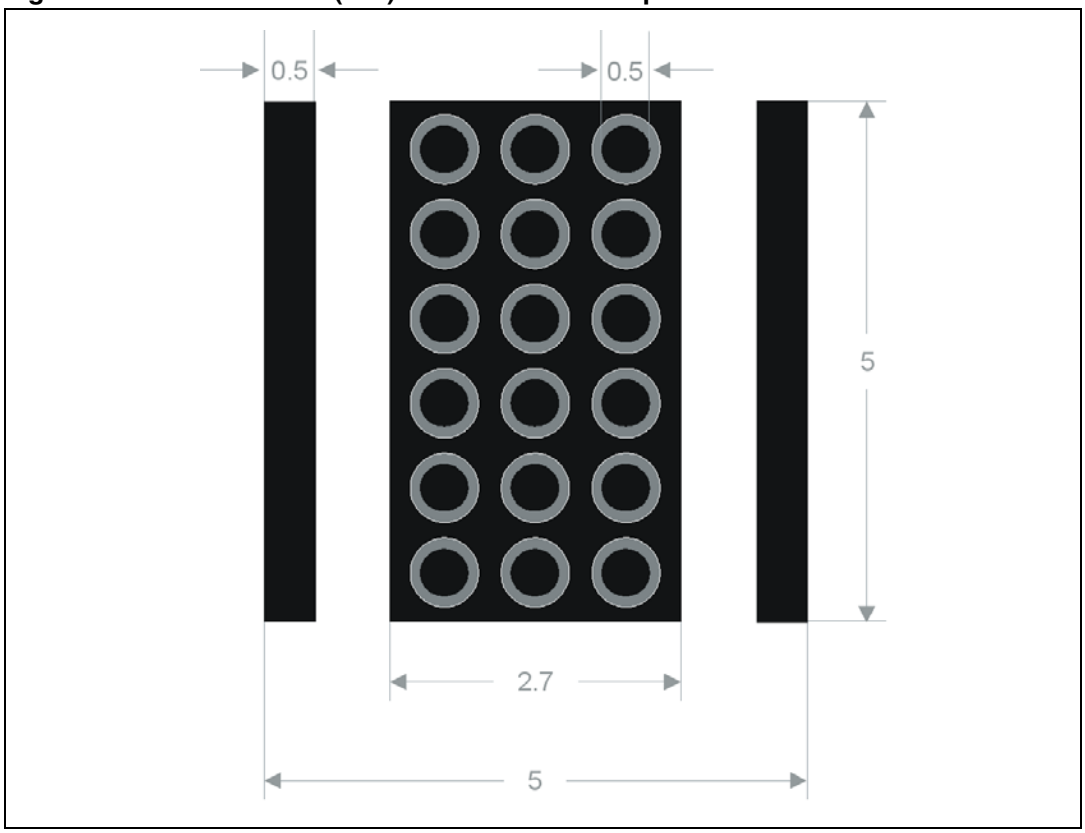


Figure 13. PowerFLAT™ (5x5) recommended footprint



6 Revision history

Table 11. Document revision history

Date	Revision	Changes
05-Dec-2007	1	Initial release.
05-Mar-2008	2	Updated *Table 4 on page 4*.
15-Feb-2011	3	Updated *Table 4 on page 4*

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 AUTHORIZED ST REPRESENTATIVE, ST PRODUCTS ARE NOT RECOMMENDED, 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. ST PRODUCTS WHICH ARE NOT SPECIFIED AS "AUTOMOTIVE GRADE" MAY ONLY BE USED IN AUTOMOTIVE APPLICATIONS AT USER’S OWN RISK.

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.

STMicroelectronics group of companies

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

www.st.com