阅读申明

1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描叙上的差异，建议读者做出适当判断。
4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.

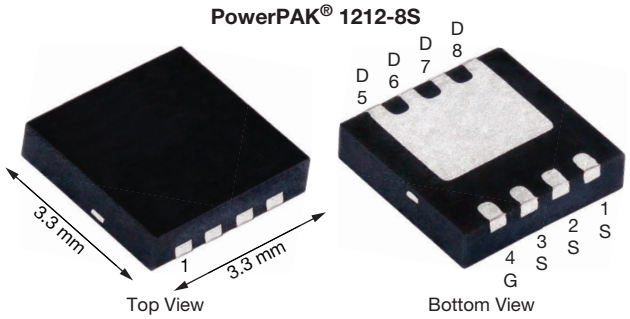
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader’ s learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.

3. All product information provided on the website refer to solutions from manufacturers’ technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.

4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with “Datasheets”.

P-Channel 30 V (D-S) MOSFET

PRODUCT SUMMARY			
V_{DS} (V)	$R_{DS(on)}$ (Ω) MAX.	I_D (A)	Q_g (TYP.)
-30	0.0056 at V_{GS} = -10 V	-50 [e]	45 nC
	0.0070 at V_{GS} = -6 V	-50 [e]	
	0.0090 at V_{GS} = -4.5 V	-50 [e]	



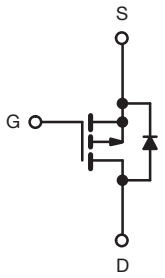
FEATURES

- TrenchFET® Power MOSFET
- Low thermal resistance PowerPAK® package with small size and low 0.75 mm profile
- 100 % R_g and UIS tested
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

APPLICATIONS

- Notebook computers and mobile computing
  - Adaptor switch
  - Load switch
  - DC/DC converter
  - Power management



P-Channel MOSFET

Ordering Information:
SiSS27DN-T1-GE3 (Lead (Pb)-free and Halogen-free)

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C, unless otherwise noted)				
PARAMETER		SYMBOL	LIMIT	UNIT
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current (T_J = 150 °C)	T_C = 25 °C	I_D	-50 [e]	A
	T_C = 70 °C		-50 [e]	
	T_A = 25 °C		-23 [a,b]	
	T_A = 70 °C		-18.5 [a,b]	
Pulsed Drain Current (t = 100 µs)		I_{DM}	-200	
Continuous Source-Drain Diode Current	T_C = 25 °C	I_S	-47.5	
	T_A = 25 °C		-4 [a,b]	
Avalanche Current	L = 0.1 mH	I_{AS}	-25	
Single-Pulse Avalanche Energy		E_{AS}	31	mJ
Maximum Power Dissipation	T_C = 25 °C	P_D	57	W
	T_C = 70 °C		36	
	T_A = 25 °C		4.8 [a,b]	
	T_A = 70 °C		3 [a,b]	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-50 to 150	°C
Soldering Recommendations (Peak Temperature) [c,d]			260	

Notes

a. Surface mounted on 1" x 1" FR4 board.
b. t = 10 s.
c. See solder profile (www.vishay.com/doc?73257). The PowerPAK 1212-8S is a leadless package. The end of the lead terminal is exposed copper (not plated) as a result of the singulation process in manufacturing. A solder fillet at the exposed copper tip cannot be guaranteed and is not required to ensure adequate bottom side solder interconnection.
d. Rework conditions: manual soldering with a soldering iron is not recommended for leadless components.
e. Package limited.

THERMAL RESISTANCE RATINGS

PARAMETER		SYMBOL	TYPICAL	MAXIMUM	UNIT
Maximum Junction-to-Ambient [a,b]	t ≤ 10 s	R_{thJA}	21	26	°C/W
Maximum Junction-to-Case (Drain)	Steady State	R_{thJC}	1.7	2.2	

Notes

a. Surface mounted on 1" x 1" FR4 board.
b. Maximum under steady state conditions is 63 °C/W.

SPECIFICATIONS (T_J = 25 °C, unless otherwise noted)

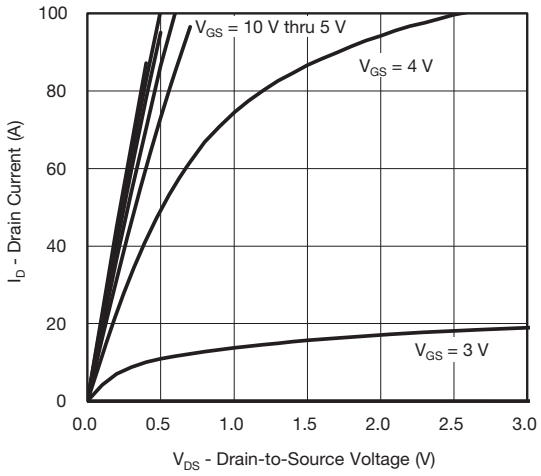
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	V_{DS}	V_{GS} = 0 V, I_D = - 250 µA	-30	-	-	V
V_{DS} Temperature Coefficient	$\Delta V_{DS}/T_J$	I_D = -250 µA	-	-22	-	mV/°C
$V_{GS(th)}$ Temperature Coefficient	$\Delta V_{GS(th)}/T_J$		-	5.7	-	
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250 µA	-1	-	-2.2	V
Gate-Source Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ± 20 V	-	-	± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -30 V, V_{GS} = 0 V	-	-	-1	µA
		V_{DS} = -30 V, V_{GS} = 0 V, T_J = 55 °C	-	-	-10	
On-State Drain Current [a]	$I_{D(on)}$	V_{DS} ≤ -5 V, V_{GS} = -10 V	-20	-	-	A
Drain-Source On-State Resistance [a]	$R_{DS(on)}$	V_{GS} = -10 V, I_D = -15 A	-	0.0046	0.0056	Ω
		V_{GS} = -6 V, I_D = -10 A	-	0.0058	0.0070	
		V_{GS} = -4.5 V, I_D = -5 A	-	0.0073	0.0090	
Forward Transconductance [a]	g_{fs}	V_{DS} = -15 V, I_D = -15 A	-	52	-	S
Dynamic [b]						
Input Capacitance	C_{iss}	V_{DS} = -15 V, V_{GS} = 0 V, f = 1 MHz	-	5250	-	pF
Output Capacitance	C_{oss}		-	530	-	
Reverse Transfer Capacitance	C_{rss}		-	485	-	
Total Gate Charge	Q_g	V_{DS} = -15 V, V_{GS} = -10 V, I_D = -20 A	-	92	140	nC
		V_{DS} = -15 V, V_{GS} = -4.5 V, I_D = -20 A	-	45	70	
Gate-Source Charge	Q_{gs}		-	15	-	
Gate-Drain Charge	Q_{gd}		-	16	-	
Gate Resistance	R_g	f = 1 MHz	0.6	3	6	Ω
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -15 V, R_L = 1.5 Ω I_D ≅ -10 A, V_{GEN} = -4.5 V, R_g = 1 Ω	-	60	120	ns
Rise Time	t_r		-	45	90	
Turn-Off DelayTime	$t_{d(off)}$		-	50	100	
Fall Time	t_f		-	20	40	
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -15 V, R_L = 1.5 Ω I_D ≅ -10 A, V_{GEN} = -10 V, R_g = 1 Ω	-	16	30	
Rise Time	t_r		-	5	10	
Turn-Off DelayTime	$t_{d(off)}$		-	65	130	
Fall Time	t_f		-	10	20	
Drain-Source Body Diode Characteristics						
Continuous Source-Drain Diode Current	I_S	T_C = 25 °C	-	-	-50 [c]	A
Pulse Diode Forward Current [d]	I_{SM}		-	-	-200	
Body Diode Voltage	V_{SD}	I_F = -10 A	-	-0.8	-1.2	V
Body Diode Reverse Recovery Time	t_{rr}	I_F = -10 A, dI/dt = 100 A/µs, T_J = 25 °C	-	30	60	ns
Body Diode Reverse Recovery Charge	Q_{rr}		-	21	40	nC
Reverse Recovery Fall Time	t_a		-	16	-	ns
Reverse Recovery Rise Time	t_b		-	14	-	

Notes

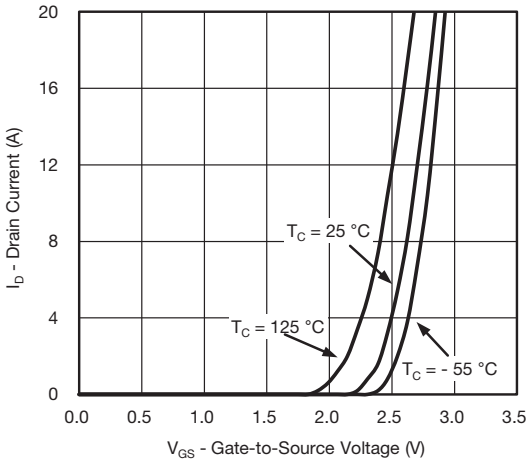
a. Pulse test; pulse width ≤ 300 µs, duty cycle ≤ 2 %.
b. Guaranteed by design, not subject to production testing.
c. Package limited.
d. t = 100 µs.

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

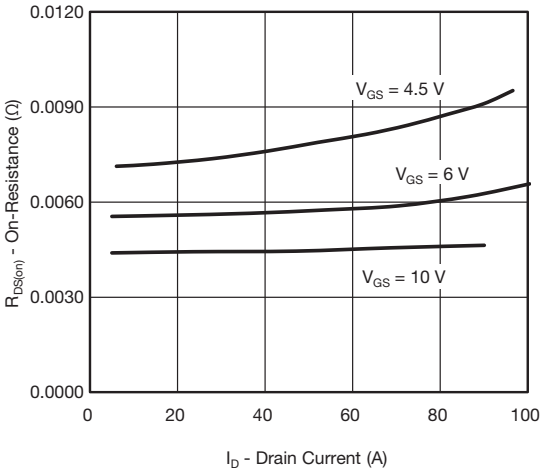
TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



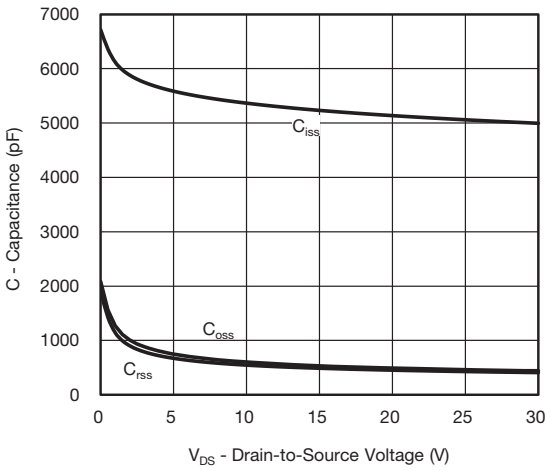
Output Characteristics



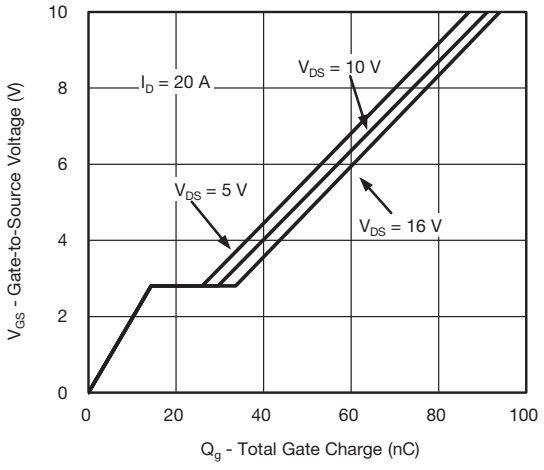
Transfer Characteristics



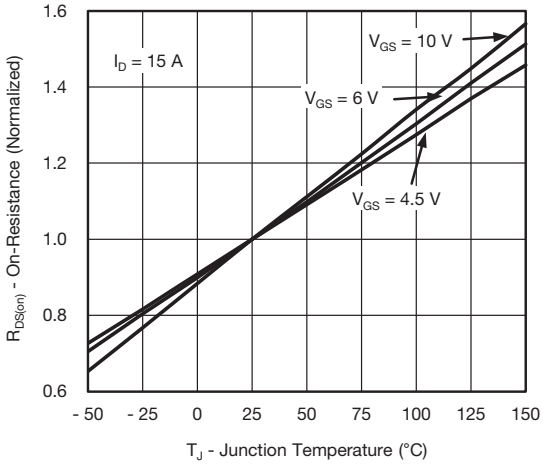
On-Resistance vs. Drain Current and Gate Voltage



Capacitance

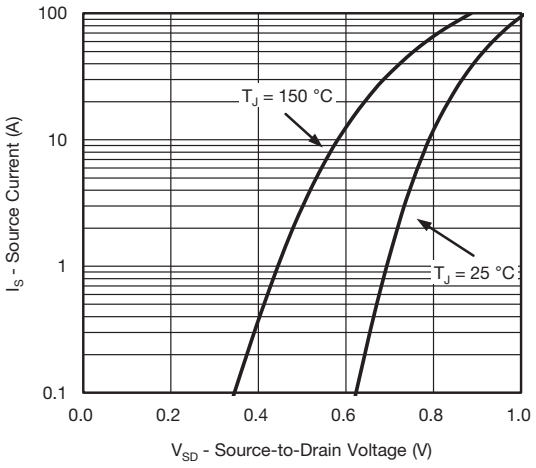


Gate Charge

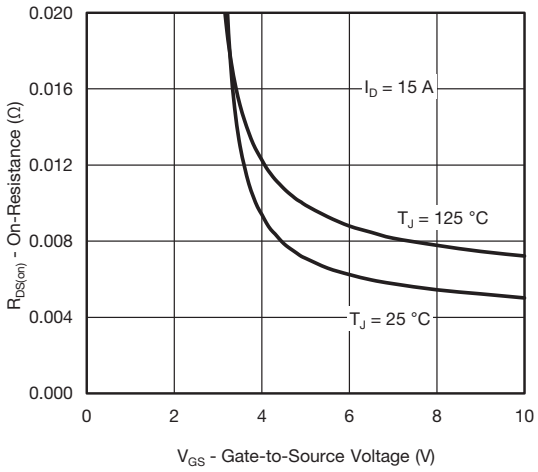


On-Resistance vs. Junction Temperature

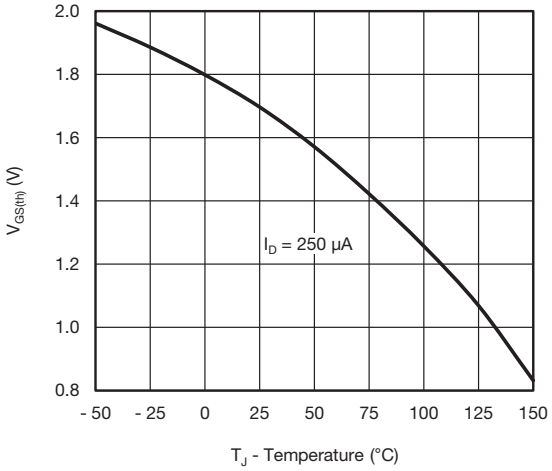
TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



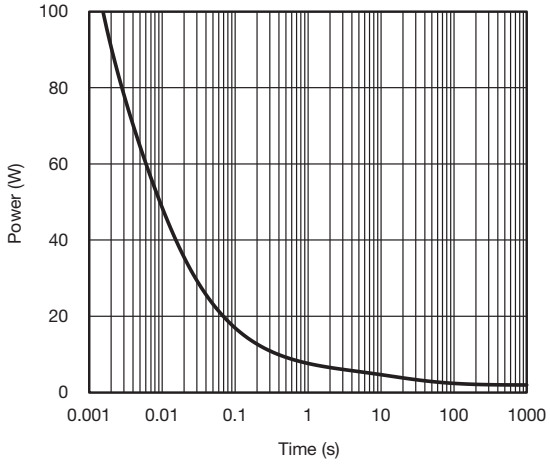
Source-Drain Diode Forward Voltage



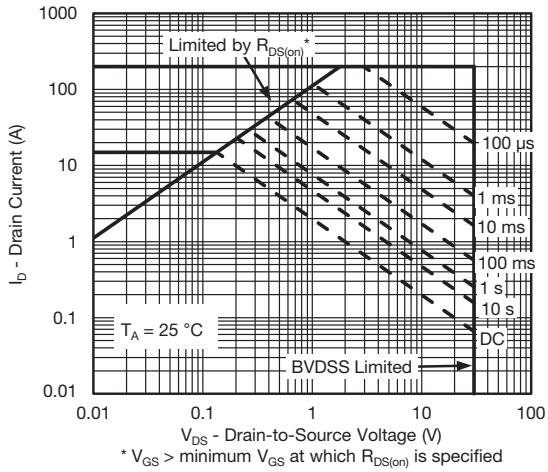
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage

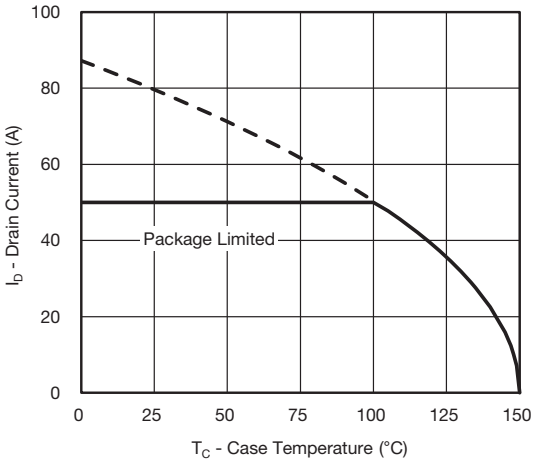


Single Pulse Power, Junction-to-Ambient

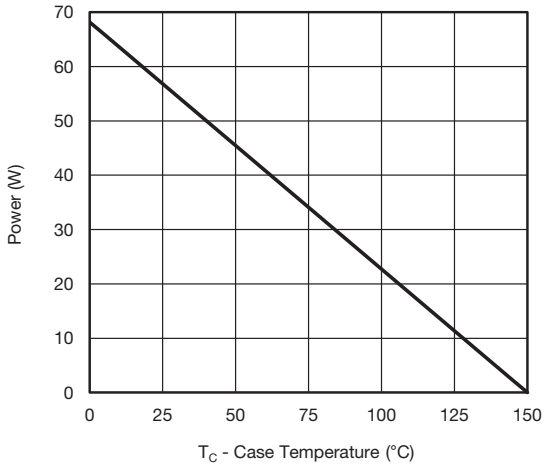


Safe Operating Area, Junction-to-Ambient

TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



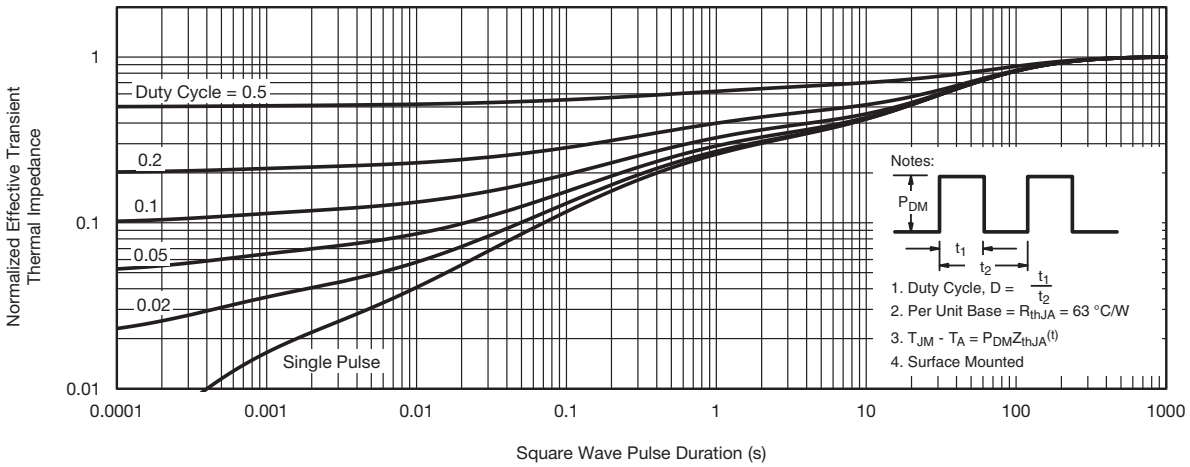
Current Derating*



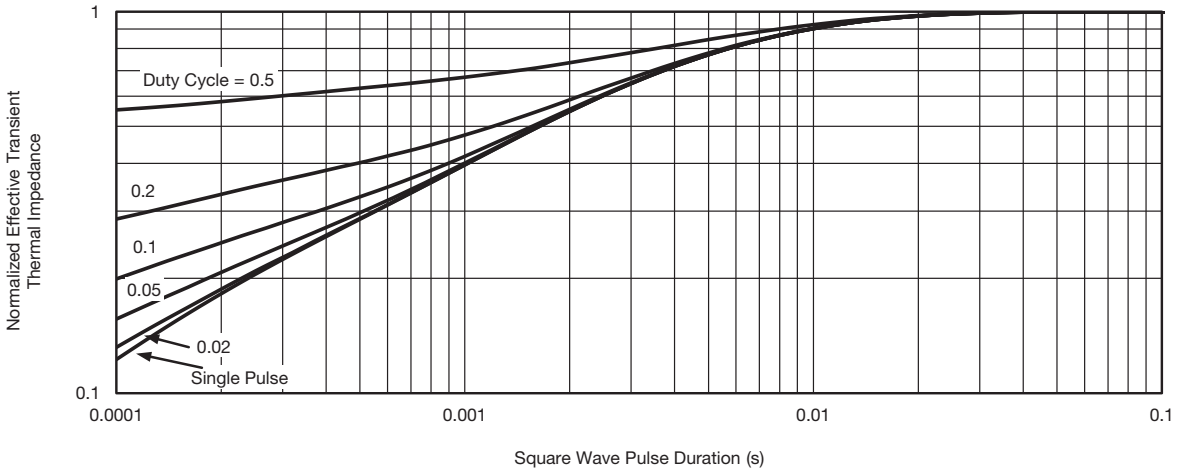
Power, Junction-to-Case

* The power dissipation P_D is based on $T_{J(max.)}$ = 150 °C, using junction-to-case thermal resistance, and is more useful in settling the upper dissipation limit for cases where additional heatsinking is used. It is used to determine the current rating, when this rating falls below the package limit.

TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



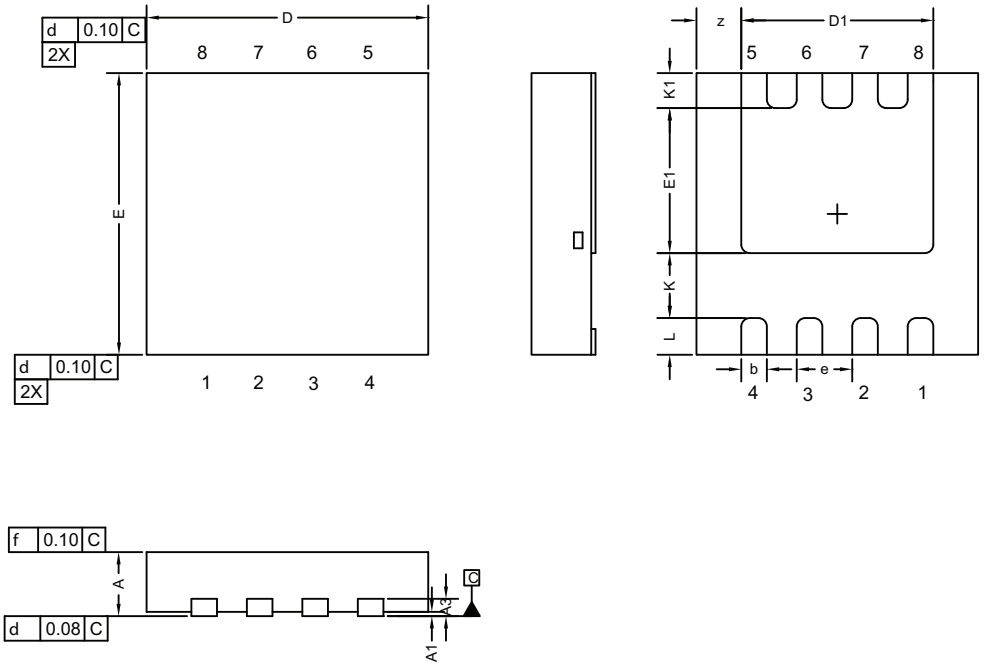
Normalized Thermal Transient Impedance, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Case

Vishay Siliconix maintains worldwide manufacturing capability. Products may be manufactured at one of several qualified locations. Reliability data for Silicon Technology and Package Reliability represent a composite of all qualified locations. For related documents such as package/tape drawings, part marking, and reliability data, see www.vishay.com/ppg?62847.

Case Outline for PowerPAK® 1212-8S

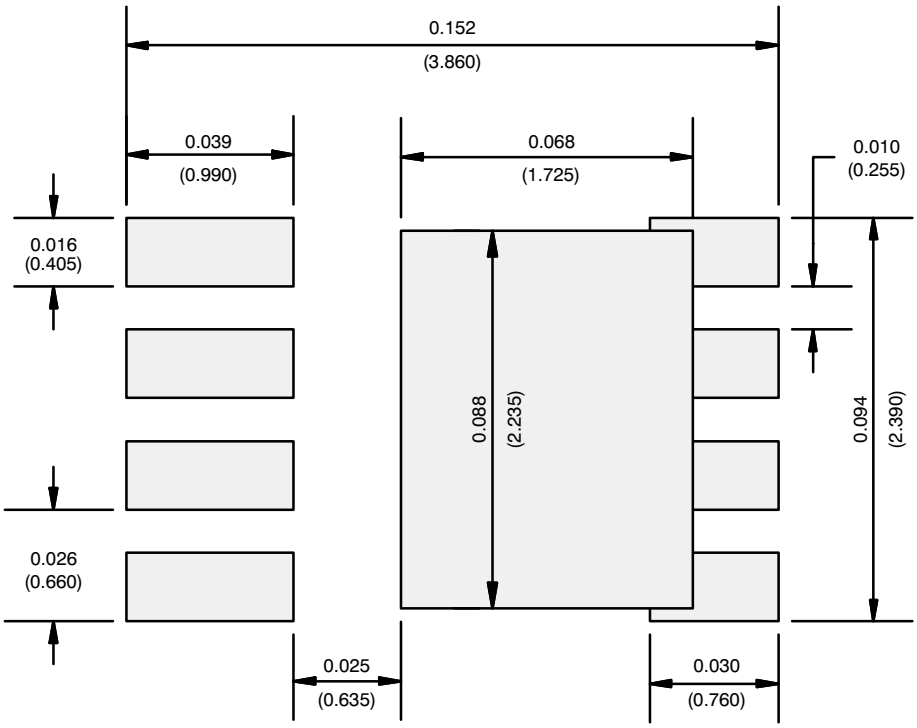


DIM.	MILLIMETERS			INCHES		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.67	0.75	0.83	0.027	0.030	0.033
A1	0	-	0.05	0	-	0.002
A3	0.20 REF			0.008 REF		
b	0.30 BSC			0.012 BSC		
D	3.30 BSC			0.130 BSC		
D1	2.15	2.25	2.35	0.084	0.088	0.092
E	3.30 BSC			0.130 BSC		
E1	1.60	1.70	1.80	0.063	0.067	0.071
e	0.65 BSC			0.026 BSC		
K	0.76 TYP			0.030 TYP		
K1	0.41 TYP			0.016 TYP		
L	0.43 BSC			0.017 BSC		
z	0.525 TYP			0.021 TYP		
ECN: C12-0200-Rev. A, 12-Mar-12 DWG: 6008						

Note

- Millimeters will govern.

RECOMMENDED MINIMUM PADS FOR PowerPAK® 1212-8 Single



Recommended Minimum Pads
Dimensions in Inches/(mm)

Return to Index

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.