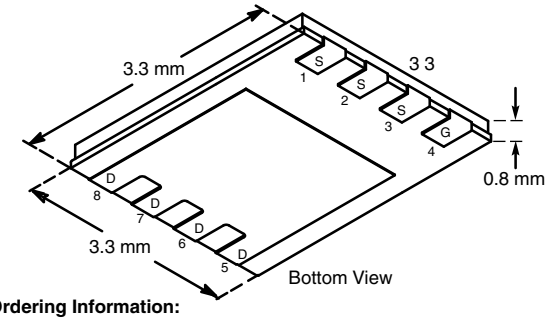
P-Channel 20-V (D-S) MOSFET

PRODUCT SUMMARY			
V_{DS} (V)	$R_{DS(on)}$ (Ω) Max.	I_D (A)[a]	Q_g (Typ.)
- 20	0.0054 at V_{GS} = - 4.5V	- 30[a]	57 nC
	0.0060 at V_{GS} = - 3.7 V	- 30[a]	
	0.0083 at V_{GS} = - 2.5 V	- 30[a]	
	0.0140 at V_{GS} = - 1.8 V	- 30[a]	

Thin PowerPAK® 1212-8



Ordering Information:
SiS435DNT-T1-GE3 (Lead (Pb)-free and Halogen-free)

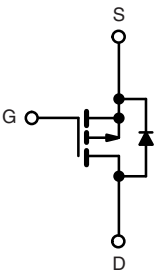
FEATURES

- TrenchFET® Gen III P-Channel Power MOSFET
- Thin 0.8 mm max. height
- 100 % R_g and UIS Tested
- Material categorization:
  For definitions of compliance please see
  www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

APPLICATIONS

- Smart Phones, Tablet PCs, and Mobile Computing
  - Battery Switch
  - Load Switch
  - Power Management
  - Battery Management



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C, unless otherwise noted)				
Parameter		**Symbol**	**Limit**	**Unit**
Drain-Source Voltage		V_{DS}	- 20	V
Gate-Source Voltage		V_{GS}	± 8	
Continuous Drain Current (T_J = 150 °C)	T_C = 25 °C	I_D	- 30[a]	A
	T_C = 70 °C		- 30[a]	
	T_A = 25 °C		- 22[b, c]	
	T_A = 70 °C		- 17[b, c]	
Pulsed Drain Current (t = 300 µs)		I_{DM}	- 80	
Continuous Source-Drain Diode Current	T_C = 25 °C	I_S	- 30[a]	
	T_A = 25 °C		- 3.1[b, c]	
Avalanche Current	L = 0.1 mH	I_{AS}	- 20	
Single Pulse Avalanche Energy		E_{AS}	20	mJ
Maximum Power Dissipation	T_C = 25 °C	P_D	39	W
	T_C = 70 °C		25	
	T_A = 25 °C		3.7[b, c]	
	T_A = 70 °C		2.4[b, c]	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	- 55 to 150	°C
Soldering Recommendations (Peak Temperature)[d, e]			260	

THERMAL RESISTANCE RATINGS					
Parameter		**Symbol**	**Typical**	**Maximum**	**Unit**
Maximum Junction-to-Ambient[b, f]	t ≤ 10 s	R_{thJA}	24	33	°C/W
Maximum Junction-to-Case (Drain)	Steady State	R_{thJC}	2.4	3.2	

Notes:
a. Package limited.
b. Surface mounted on 1" x 1" FR4 board.
c. t = 10 s.
d. See solder profile (*www.vishay.com/doc?73257*). The Thin PowerPAK 1212-8 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.
e. Rework conditions: manual soldering with a soldering iron is not recommended for leadless components.
f. Maximum under steady state conditions is 81 °C/W.

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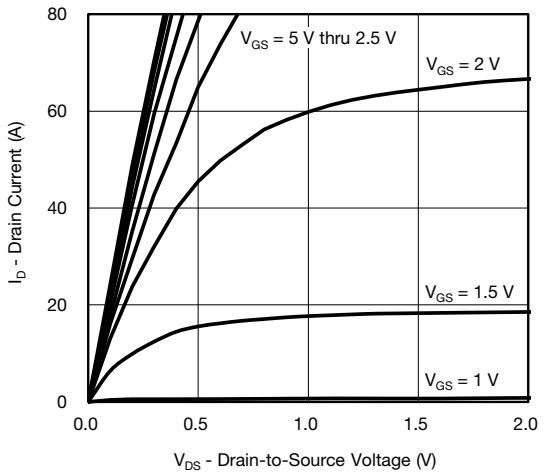
SPECIFICATIONS (T_J = 25 °C, unless otherwise noted)						
Parameter	**Symbol**	**Test Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Static						
Drain-Source Breakdown Voltage	V_{DS}	V_{GS} = 0 V, I_D = - 250 µA	- 20			V
V_{DS} Temperature Coefficient	$\Delta V_{DS}/T_J$	I_D = - 250 µA		- 16		mV/°C
$V_{GS(th)}$ Temperature Coefficient	$\Delta V_{GS(th)}/T_J$			2.9		
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = - 250 µA	- 0.4		- 0.9	V
Gate-Source Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ± 8 V			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = - 20 V, V_{GS} = 0 V			- 1	µA
		V_{DS} = - 20 V, V_{GS} = 0 V, T_J = 55 °C			- 10	
On-State Drain Current[a]	$I_{D(on)}$	$V_{DS} \leq$ - 5 V, V_{GS} = - 4.5 V	- 20			A
Drain-Source On-State Resistance[a]	$R_{DS(on)}$	V_{GS} = - 4.5 V, I_D = - 13 A		0.0044	0.0054	Ω
		V_{GS} = - 3.7 V, I_D = - 10 A		0.0048	0.0060	
		V_{GS} = - 2.5 V, I_D = - 10 A		0.0065	0.0083	
		V_{GS} = - 1.8 V, I_D = - 5 A		0.0110	0.0140	
Forward Transconductance[a]	g_{fs}	V_{DS} = - 10 V, I_D = - 13 A		55		S
Dynamic[b]						
Input Capacitance	C_{iss}	V_{DS} = - 10 V, V_{GS} = 0 V, f = 1 MHz		5700		pF
Output Capacitance	C_{oss}			620		
Reverse Transfer Capacitance	C_{rss}			585		
Total Gate Charge	Q_g	V_{DS} = - 10 V, V_{GS} = - 8 V, I_D = - 20 A		98	180	nC
		V_{DS} = - 10 V, V_{GS} = - 4.5 V, I_D = - 20 A		57	86	
Gate-Source Charge	Q_{gs}			7.4		
Gate-Drain Charge	Q_{gd}			13.1		
Gate Resistance	R_g	f = 1 MHz	0.8	3.8	7.6	Ω
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = - 10 V, R_L = 1 Ω $I_D \cong$ - 10 A, V_{GEN} = - 4.5 V, R_g = 1 Ω		40	80	ns
Rise Time	t_r			30	60	
Turn-Off Delay Time	$t_{d(off)}$			100	200	
Fall Time	t_f			30	60	
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = - 10 V, R_L = 1 Ω $I_D \cong$ - 10 A, V_{GEN} = - 8 V, R_g = 1 Ω		15	30	
Rise Time	t_r			10	20	
Turn-Off Delay Time	$t_{d(off)}$			110	220	
Fall Time	t_f			25	50	
Drain-Source Body Diode Characteristics						
Continuous Source-Drain Diode Current	I_S	T_C = 25 °C			- 30	A
Pulse Diode Forward Current	I_{SM}				- 80	
Body Diode Voltage	V_{SD}	I_S = - 10 A, V_{GS} = 0 V		- 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		19	40	ns
Body Diode Reverse Recovery Charge	Q_{rr}			10	20	nC
Reverse Recovery Fall Time	t_a			9		ns
Reverse Recovery Rise Time	t_b			10		

Notes:
a. Pulse test; pulse width ≤ 300 µs, duty cycle ≤ 2 %.
b. Guaranteed by design, not subject to production testing.

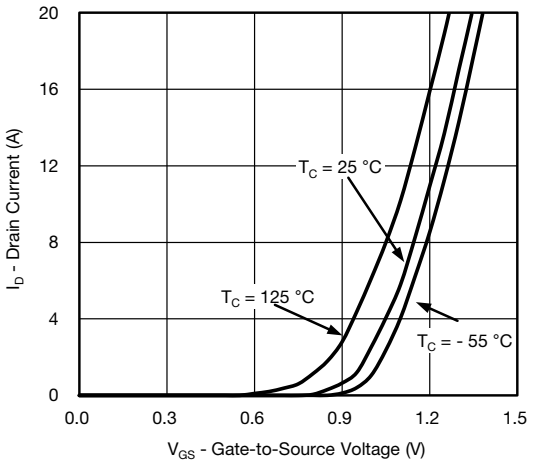
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure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

For technical questions, contact: pmostechsupport@vishay.com
Document Number: 63264
S13-0465-Rev. A, 04-Mar-13
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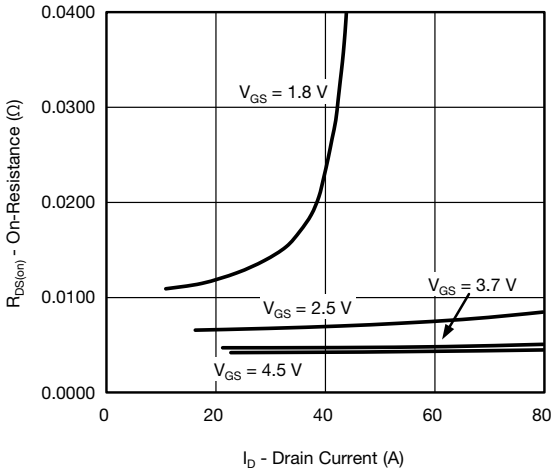
TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



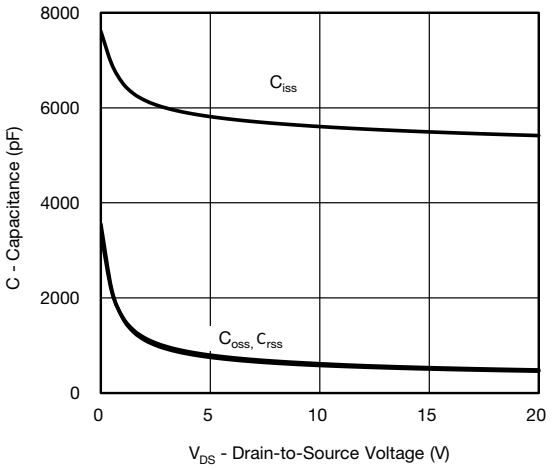
Output Characteristics



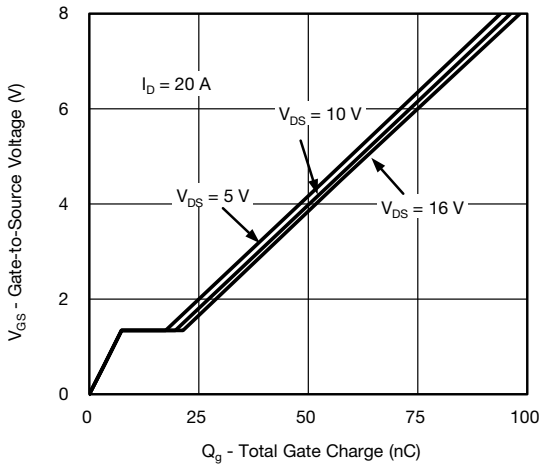
Transfer Characteristics



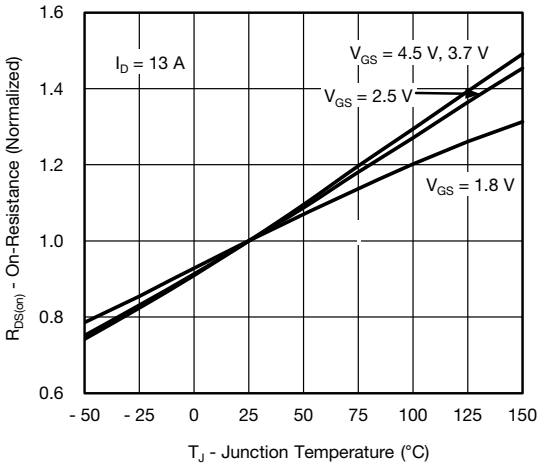
On-Resistance vs. Drain Current and Gate Voltage



Capacitance



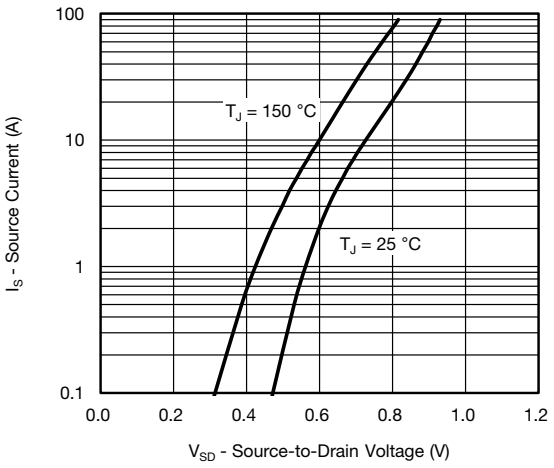
Gate Charge



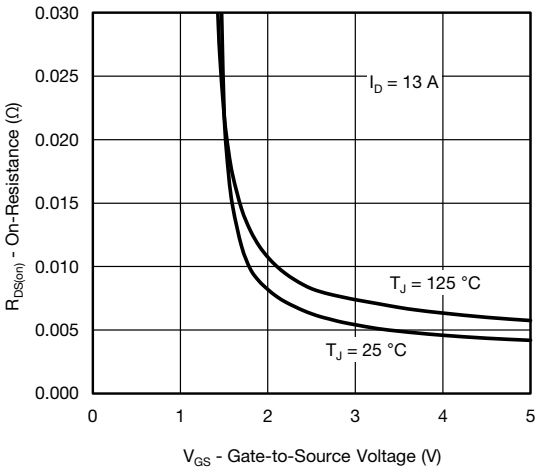
On-Resistance vs. Junction Temperature

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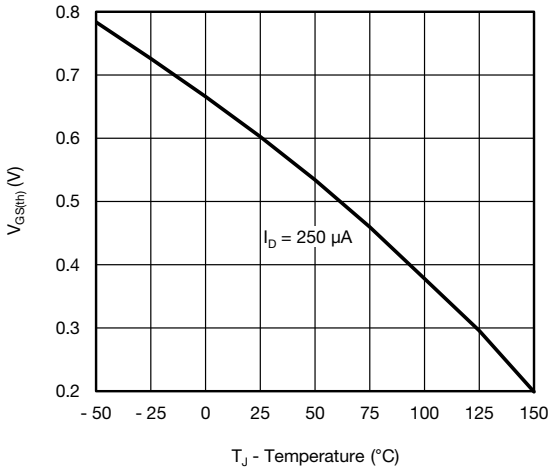
TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



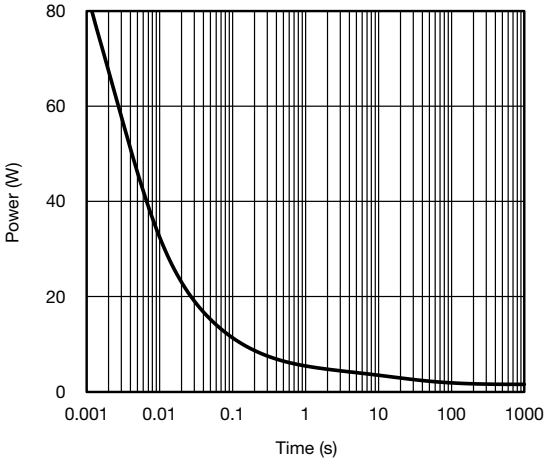
Soure-Drain Diode Forward Voltage



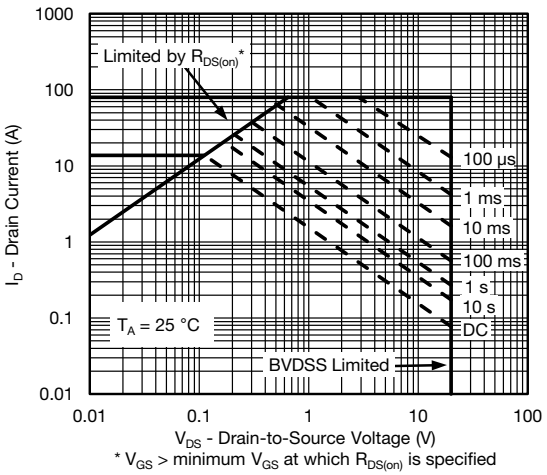
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



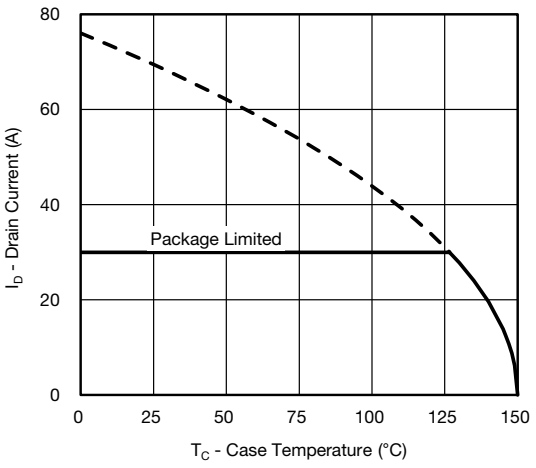
Single Pulse Power, Junction-to-Ambient



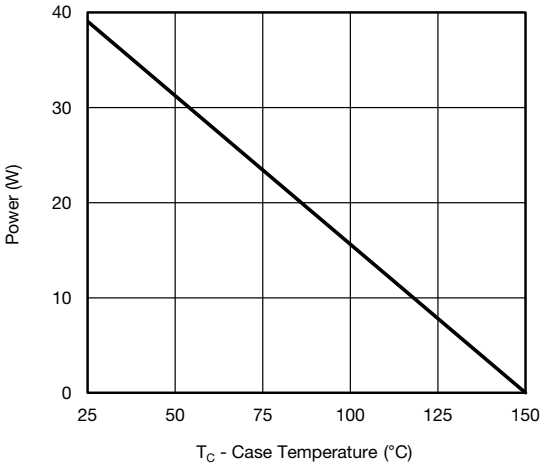
Safe Operating Area, Junction-to-Ambient

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TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



Current Derating*

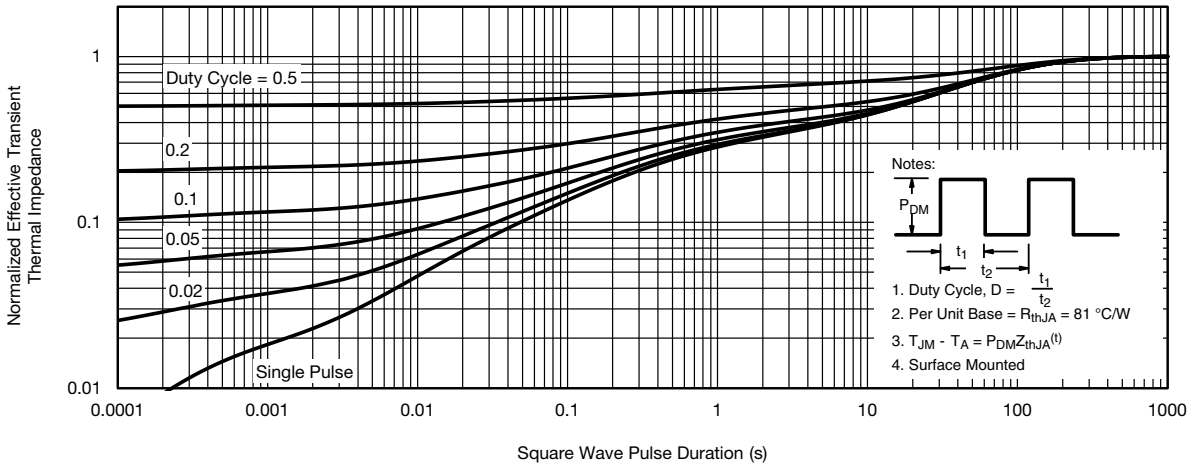


Power Derating, Junction-to-Case

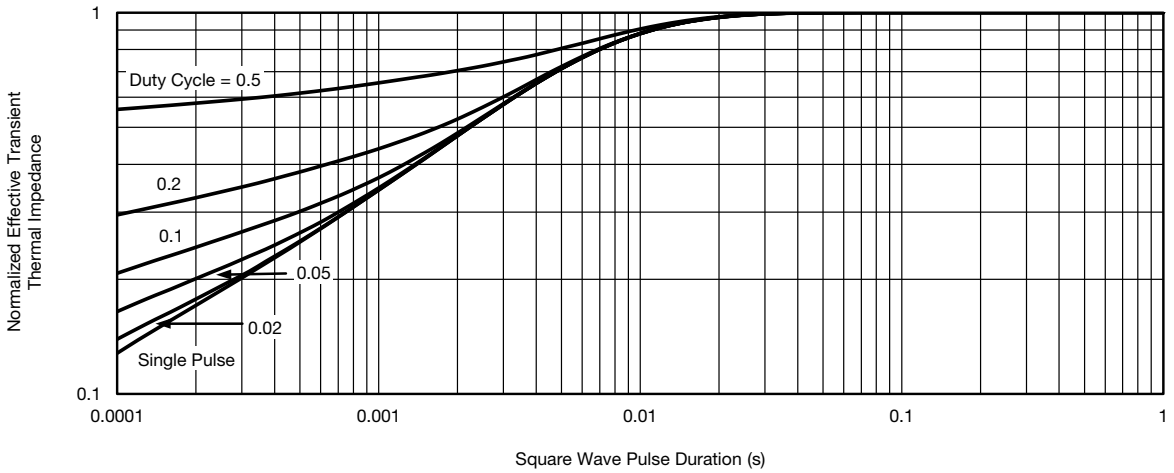
* The power dissipation P_D is based on $T_{J(max.)}$ = 150 °C, using junction-to-case thermal resistance, and is more useful in settling the upper dissipation limit for cases where additional heatsinking is used. It is used to determine the current rating, when this rating falls below the package limit.

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TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



Normalized Thermal Transient Impedance, Junction-to-Ambient

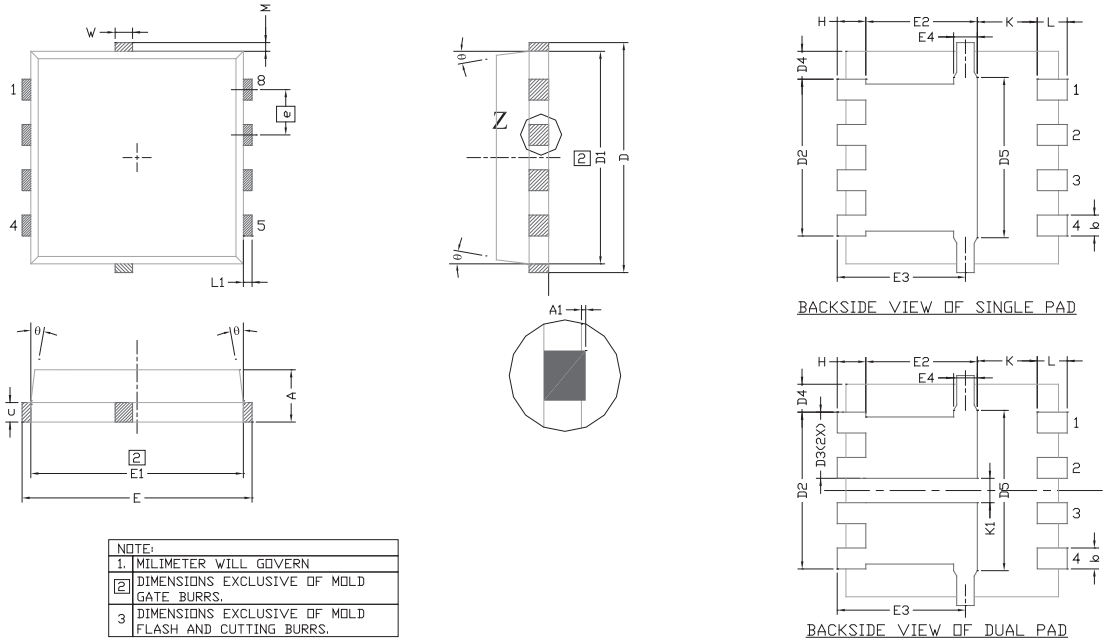


Normalized Thermal Transient Impedance, Junction-to-Case

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PowerPAK® 1212-8T



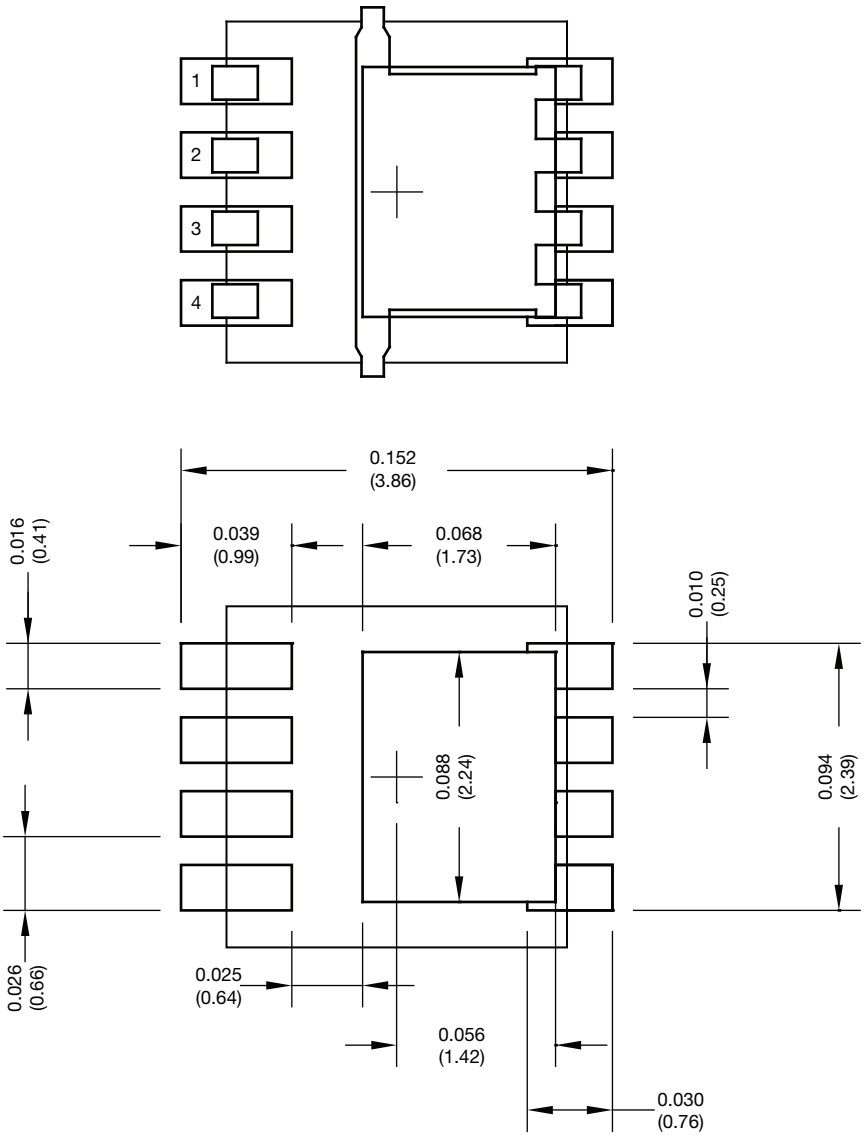
NOTE:	
1.	MILIMETER WILL GOVERN
2	DIMENSIONS EXCLUSIVE OF MOLD GATE BURRS.
3	DIMENSIONS EXCLUSIVE OF MOLD FLASH AND CUTTING BURRS.

DIM.	MILLIMETERS			INCHES		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.70	0.75	0.80	0.028	0.030	0.031
A1	0.00	-	0.05	0.000	-	0.002
b	0.23	0.30	0.41	0.009	0.012	0.016
c	0.23	0.28	0.33	0.009	0.011	0.013
D	3.20	3.30	3.40	0.126	0.130	0.134
D1	2.95	3.05	3.15	0.116	0.120	0.124
D2	1.98	2.11	2.24	0.078	0.083	0.088
D3	0.48	-	0.89	0.019	-	0.035
D4	0.47 TYP.			0.0185 TYP.		
D5	2.3 TYP.			0.090 TYP.		
E	3.20	3.30	3.40	0.126	0.130	0.134
E1	2.95	3.05	3.15	0.116	0.120	0.124
E2	1.47	1.60	1.73	0.058	0.063	0.068
E3	1.75	1.85	1.98	0.069	0.073	0.078
E4	0.34 TYP.			0.013 TYP.		
e	0.65 BSC			0.026 BSC		
K	0.86 TYP.			0.034 TYP.		
K1	0.35	-	-	0.014	-	-
H	0.30	0.41	0.51	0.012	0.016	0.020
L	0.30	0.43	0.56	0.012	0.017	0.022
L1	0.06	0.13	0.20	0.002	0.005	0.008
θ	0°	-	12°	0°	-	12°
W	0.15	0.25	0.36	0.006	0.010	0.014
M	0.125 TYP.			0.005 TYP.		

ECN: T13-0056-Rev. A, 18-Feb-13
DWG: 6012

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Recommended Minimum PADs for Thin PowerPAK® 1212-8T



For technical questions, contact: pmostechsupport@vishay.com

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Üretici parça numarasını yazın; stok ve fiyatı hemen görün.

www.entegreci.com

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Kategorilere göz atın

Üreticiler

Aradığınız üreticinin ürünlerini tek sayfada inceleyin.

Üreticileri görün

Toplu alım ve teklif

Listede olmayan ya da yüksek adetli parçalar için teklif isteyin.

Teklif isteyin

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Entegreci is an online electronic components store based in Türkiye. Search by manufacturer part number to see stock, prices and datasheets for integrated circuits, microcontrollers, transistors, passive components and connectors, or request a quote for parts that are not listed.

Bu sayfa Entegreci tarafından eklenmiştir. Belgenin önceki sayfaları asıl yayıncısına aittir ve içeriği değiştirilmemiştir; en güncel sürüm için belgenin yayıncısına başvurun.