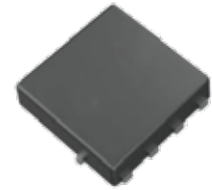
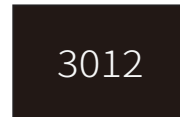


FEATURES

- | Low $R_{DS(on)}$ Provides Higher Efficiency and Extends Battery Life
- | Excellent ON resistance for higher DC current :
 $R_{DS(ON)} < 12m\Omega @ V_{GS} = 10V(\text{Type:} 9m\Omega)$
- | $V_{DS} = 30V, I_D = 50A$
- | 100% EAS Guaranteed
- | High Power and current handing capability
- | Surface Mount Package



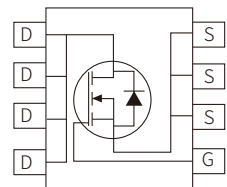
PDFN3×3-8L



Marking

APPLICATION

- | Load/Power Switching for portable device
- | Charging device
- | DC-DC converters



Schematic Symbol

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

ABSOLUTE MAXIMUM RATINGS($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	30	V
Continuous Drain Current	I_D	$T_c = 25^\circ\text{C}$	50
		$T_c = 100^\circ\text{C}$	35
Pulsed Drain Current	I_{DM}	151	A
Gate Source Voltage	V_{GSS}	± 20	V
Total Power Dissipation $T_c = 25^\circ\text{C}$	P_D	21	W
Single Pulse Avalanche Energy	EAS	52	mJ
Junction-to-Ambient Thermal Resistance ^a	$R_{\theta JC}$	6.2	$^\circ\text{C/W}$
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

^a Surface mounted on FR-5 Board using 1 square inch pad size, 1oz copper

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _{DS} =250μA	30	33		V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.7	3.0	V
Drain Cut-Off Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
Gate Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±0.1	μA
Drain Source ON Resistance	R _{DS(on)}	V _{GS} =10V, I _D =10A		9	12	mΩ
		V _{GS} =4.5V, I _D =5A		11	14	mΩ
		V _{GS} =2.5V, I _D =4A		10		mΩ
Dynamic Characteristics						
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} =10V, I _D =10A		15		nC
Gate-Source Charge	Q _{gs}			2.6		nC
Gate-Drain Charge	Q _{gd}			3.2		nC
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1.0MHz		920		pF
Output capacitance	C _{oss}			165		pF
Reverse transfer capacitance	C _{rss}			142		pF
Turn-on Delay Time	t _{d(on)}	V _{DS} =15V, V _{GS} =10V I _D =10A, R _G =3.0Ω		5		ns
Turn-on Rise Time	t _r			10		ns
Turn-Off Delay Time	t _{d(off)}			15		ns
Turn-Off Fall Time	t _f			5.4		ns
Drain Source Body Diode Characteristics						
Source Drain Diode Forward Voltage	V _{SD}	I _S =10A, V _{GS} =0V			1.2	V

Notes:

1. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
2. Dynamic parameters cannot be verified
3. Avalanche energy testing conditions: L = 8.5mH, I_{AS} = 100A, V_{DD} = 30V, Starting T_J = 25°C

PARAMETER CHARACTERISTIC CURVE

Figure 1: Output Characteristics

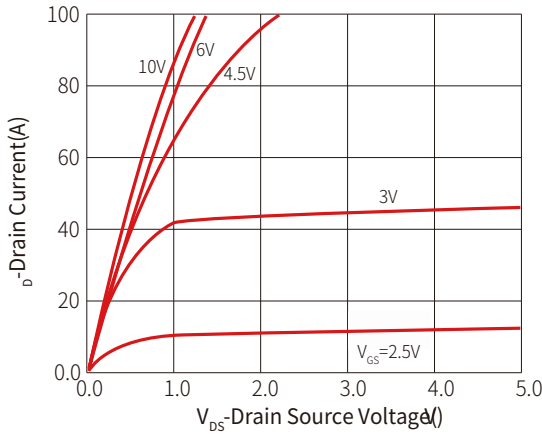


Figure 2: Transfer Characteristics

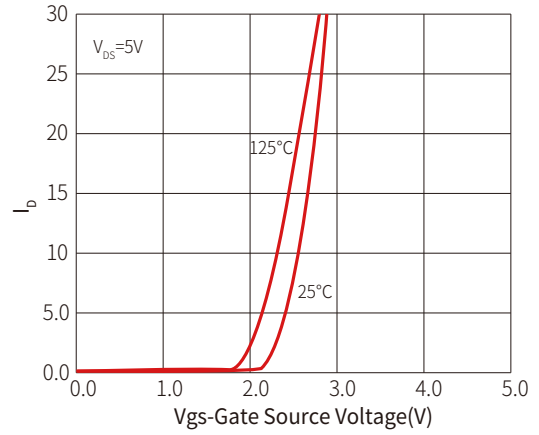


Figure 3: Rds(on)-Drain Current

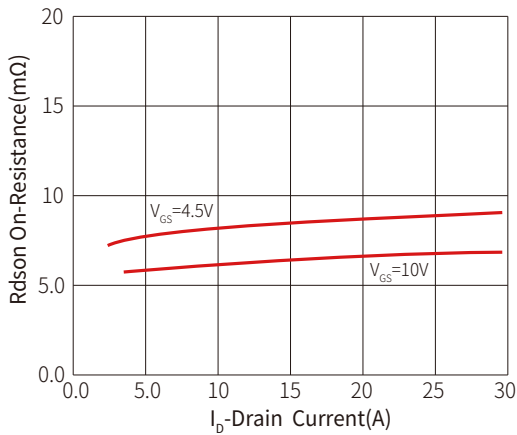


Figure 4: Rds(on)-Junction Temperature

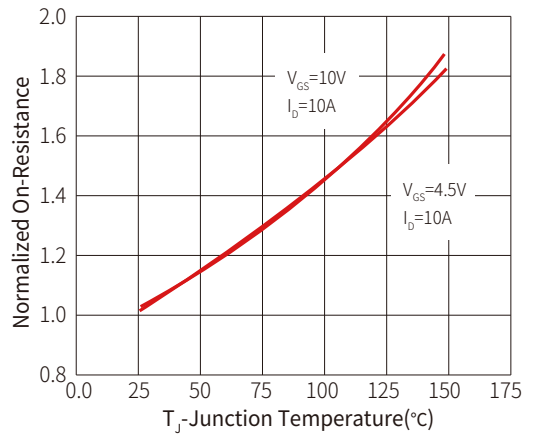


Figure 5: Gate Charge

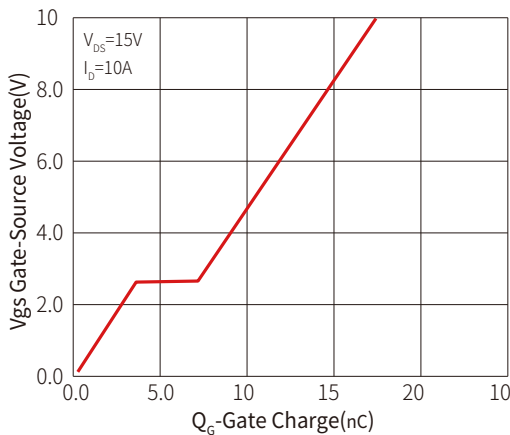


Figure 6: Source-Drain Diode Forward

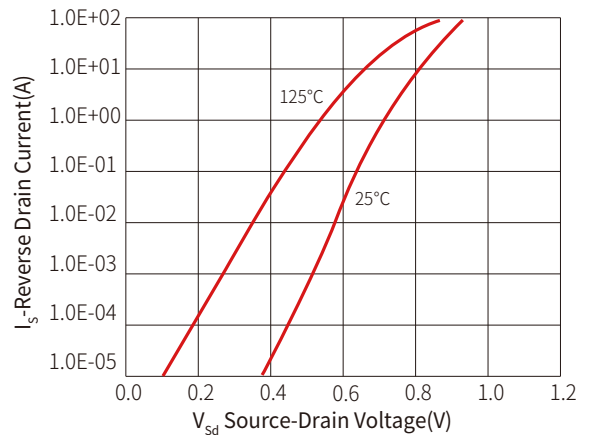


Figure 7: Capacitance vs Vds

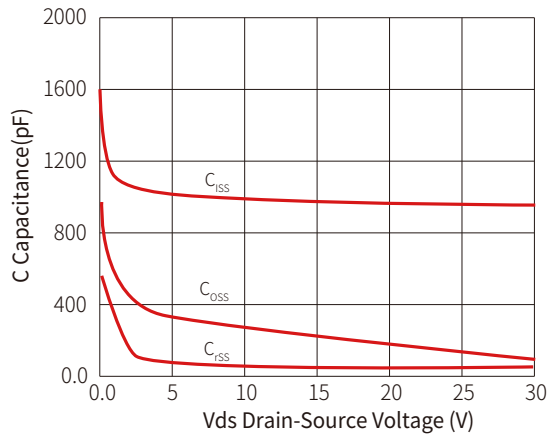


Figure 8: Safe Operation Area

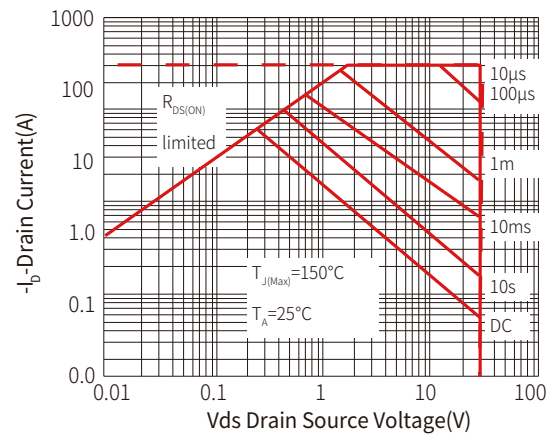


Figure 9: Power De-rating

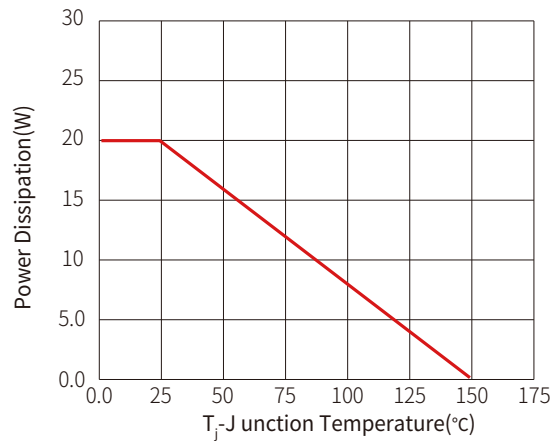


Figure 10: I_b Current De-rating

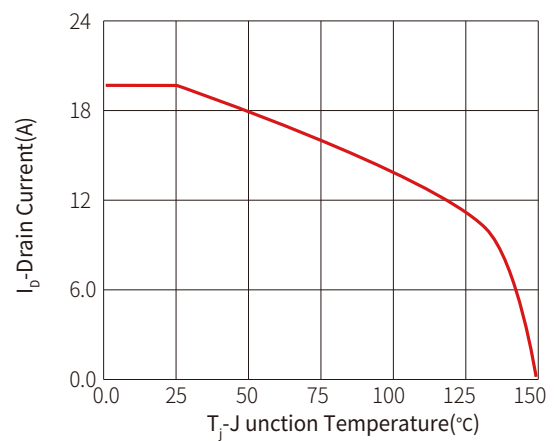
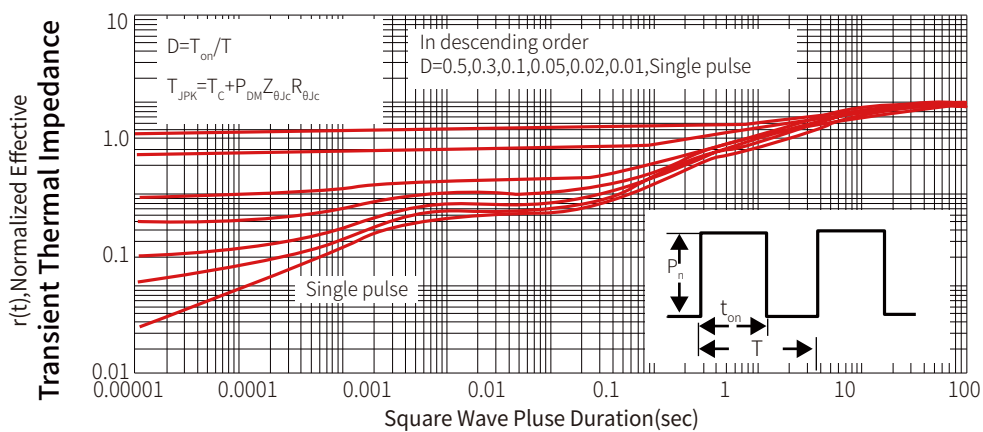
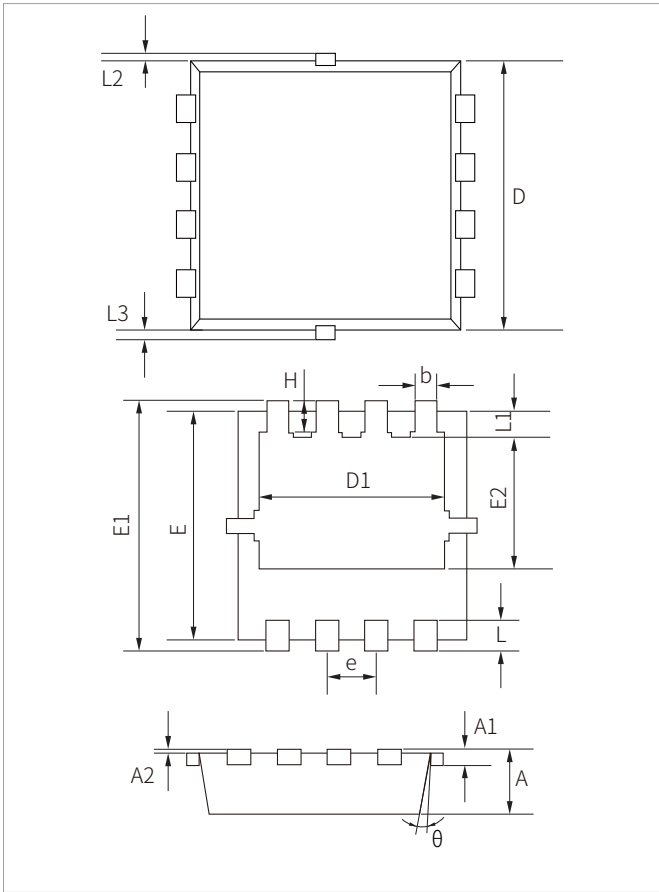


Figure 11: Normalized Maximum Transient Thermal Impedance



PDFN3×3-8L PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152REF		0.006REF	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SNM3012PQ	PDFN3×3-8L	5000PCS	13"

Headquarters

No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline

400-021-5756

Web

<https://www.semiware.com>

Sales Center

Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service

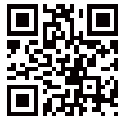
Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website



Wechat

To find your local partner within Semiware' s global website: www.semiware.com

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.