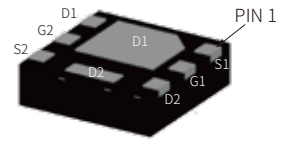


FEATURES

Trench FET Structure

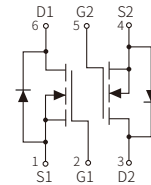
High Dense Cell Design for Extremely Low $R_{DS(ON)}$



DFN2020-6L

3400

Marking



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_{DS}	30	V
Drain Current-Continuous	I_D	5.0	A
Drain Current-Pulsed ^(Note 2)	I_{DM}	30	A
Gate-Source Voltage	V_{GS}	± 12	V
Power Dissipation	P_D	1.4	W
Thermal Resistance Junction to Ambient ^(Note 1)	$R_{\theta JA}$	89	$^{\circ}\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}\text{C}$

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 _D =250μA	30			V
Gate-Threshold Voltage ^(Note 3)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.7		1.5	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V			±100	nA
Drain-Source ON-Resistance ^(Note 3)	R _{DS(on)}	V _{GS} =10V, I _D =5.8A		29	32	mΩ
		V _{GS} =4.5V, I _D =5.0A		32	38	mΩ
		V _{GS} =2.5V, I _D =4.0A		40	45	mΩ
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =5.0A	8.0			S
Dynamic Characteristics^(Note 4)						
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz			1155	pF
Output capacitance	C _{oss}			108		pF
Reverse transfer capacitance	C _{rss}			84		pF
Gate Resistance	R _g	V _{DS} =0V, V _{GS} =0V, f=1MHz			3.6	Ω
Switching Characteristics^(Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DS} =15V, V _{GS} =10V R _L =2.7Ω, R _{GEN} =3Ω			5	ns
Turn-on Rise Time	t _r				7	ns
Turn-Off Delay Time	t _{d(off)}				40	ns
Turn-Off Fall Time	t _f				6	ns
Drain Source Diode Characteristics and Maximum Ratings						
Diode Forward Voltage ^(Note 3)	V _{SD}	I _S =1A, V _{GS} =0V			1.0	V

Notes:

- Surface Mounted on FR4 Board, t ≤ 5 sec
- Repetitive Rating: Pulse width limited Maximum Junction Temperature
- Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
- Guaranteed by Design, Not Subject to Production Testing

PARAMETER CHARACTERISTIC CURVE

Figure 1: Output Characteristics

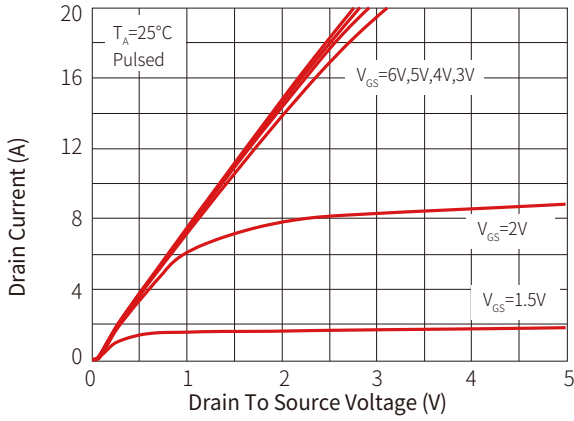


Figure 2: Transfer Characteristics

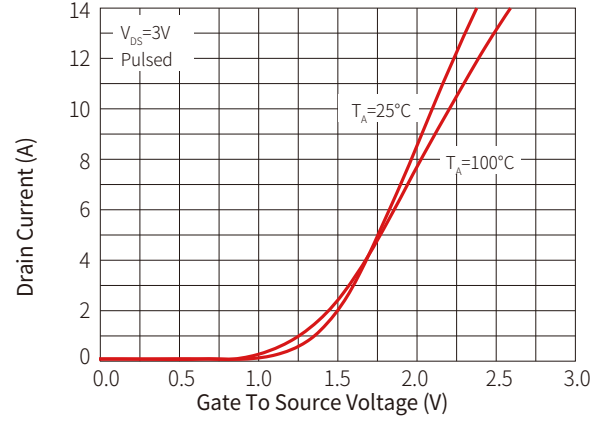


Figure 3: $R_{DS(ON)}$ — I_D

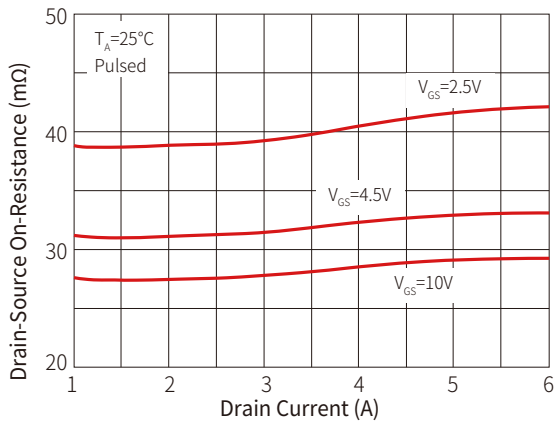


Figure 4: $R_{DS(ON)}$ — V_{GS}

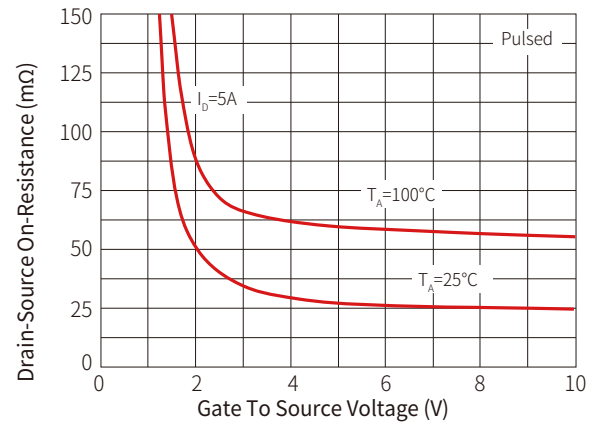


Figure 5: I_S — V_{SD}

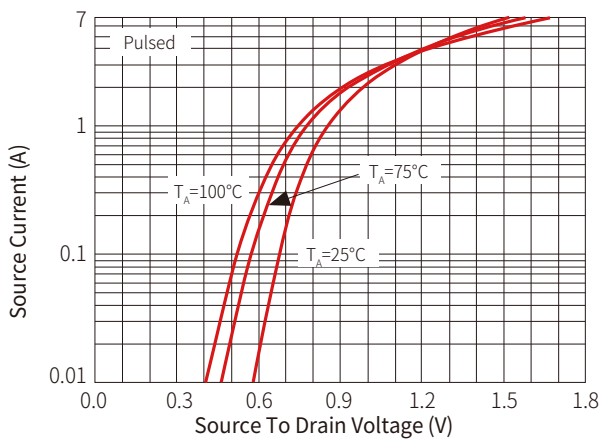
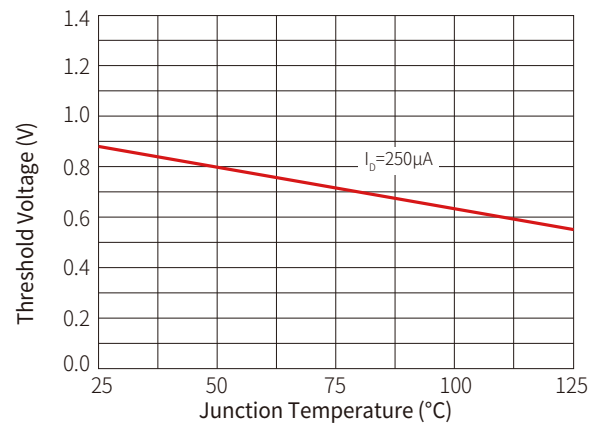
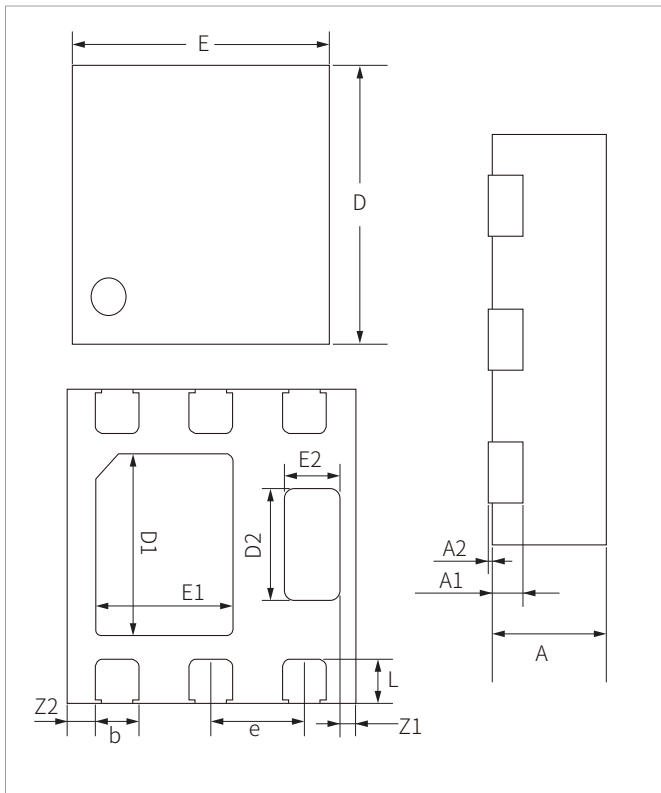


Figure 6: Threshold Voltage



DFN2020-6L PACKAGE INFORMATION



Ref.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D	1.95	2.00	2.05	0.077	0.079	0.081
E	1.95	2.00	2.05	0.077	0.079	0.081
D1	1.10	1.15	1.20	0.043	0.045	0.047
E1	0.90	0.95	1.00	0.035	0.037	0.039
D2	0.65	0.70	0.75	0.026	0.028	0.030
E2	0.33	0.38	0.43	0.013	0.015	0.017
L	0.23	0.275	0.33	0.009	0.011	0.013
b	0.25	0.30	0.35	0.010	0.012	0.014
e	0.65BSC			0.026BSC		
A	0.40	0.50	0.60	0.016	0.020	0.024
A1	0.150REF			0.006REF		
A2	0.00	-	0.05	0.00	-	0.002
Z1	0.06	0.11	0.16	0.002	0.004	0.006
Z2	0.15	0.20	0.25	0.006	0.008	0.010

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SNNM3400D	DFN2020-6L	3000PCS	7"

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.