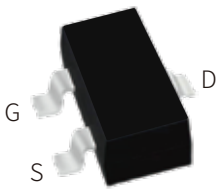
FEATURES

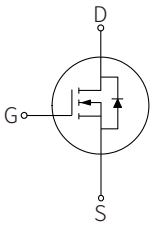
- Green Device Available
- Super Low Gate Charge
- Advanced high cell density Trench technology



SOT-23-3L

APPROVALS

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



Schematic Symbol

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Conditions	Rating	Unit
Drain-Source Voltage	V_{DS}		60	V
Gate-Source Voltage	V_{GS}		±20	V
Continuous Drain Current, V_{GS} @ 10V[1]	I_D	@T_C=25°C	5	A
Continuous Drain Current, V_{GS} @ 10V[1]	I_D	@T_C=100°C	3.5	A
Pulsed Drain Current[2]	I_{DM}		15	A
Single Pulse Avalanche Energy[3]	EAS		3.5	mJ
Avalanche Current	I_{AS}		5	A
Thermal Resistance Junction-Ambient[1]	$R_{\theta JA}$		62	°C/W
Thermal Resistance Junction-Case[1]	$R_{\theta JC}$		3	°C/W
Storage Temperature Range	T_{STG}		-55~+150	°C
Operating Junction Temperature Range	T_J		-55~+150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=-250μA	60			V
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V			±100	nA
Drain-Source Leakage Current	I_{DSS}	V_{DS}=48V,V_{GS}=0V , T_J=25°C			1	μA
		V_{DS}=48V,V_{GS}=0V , T_J=55°C			5	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS},I_D=250μA	1.2		2.5	V
Static Drain-Source On-Resistance[2]	$R_{DS(on)}$	V_{GS}=10V,I_D=5A			75	mΩ
		V_{GS}=4.5V,I_D=5A			90	mΩ
Forward Transconductance	g_{fs}	V_{DS}=5V , I_D=5A		7		S
Total Gate Charge (-10V)	Q_g	V_{DS} = 12 V, V_{GS} = 10 V I_D =5A		5.5		nC
Gate-Source Charge	Q_{gs}			1.8		nC
Gate-Drain Charge	Q_{gd}			2.4		nC
Turn–on Delay Time	$t_{d(on)}$	V_{DD}=12V,V_{GS}=10V R_G=3.3Ω, I_D = 5A		6		ns
Rise Time	t_r			10		ns
Turn–Off Delay Time	$t_{d(off)}$			15		ns
Fall Time	t_f			7		ns
Input Capacitance	C_{iss}	V_{DS}=15V,V_{GS}=0V f = 1MHz		695		pF
Output Capacitance	C_{oss}			148		pF
Reverse Transfer Capacitance	C_{rss}			7		pF
Continuous Source Current[1,5]	I_S	V_G= V_D = 0V, Force Current			17	A
Pulsed Source Current[2,5]	I_{SM}				50	A
Diode Forward Voltage[2]	V_{DS}	V_{GS}=0V,I_S=1A , T_J=25°C			1.2	V

Note :

1.The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper.

2.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%

3.The EAS data shows Max. rating . The test condition is V_{DD}=25V,V_{GS}=10V,L=0.1mH,I_{AS}=15A

4.The power dissipation is limited by 150°C junction temperature

5.The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation

PARAMETER CHARACTERISTIC CURVE

Figure 1: Typical Output Characteristics

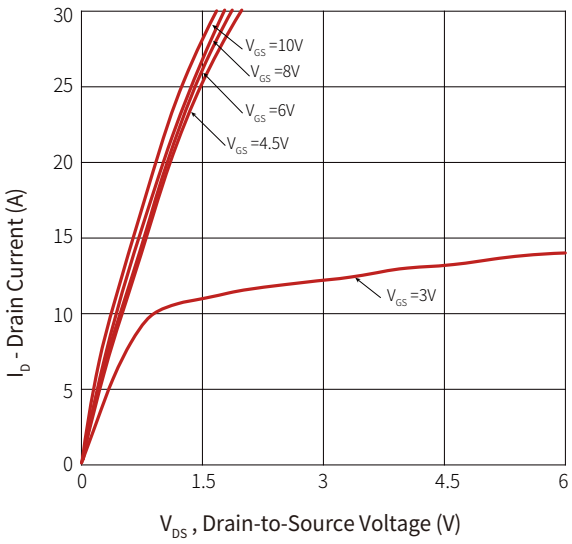


Figure 2: On-Resistance vs G-S Voltage

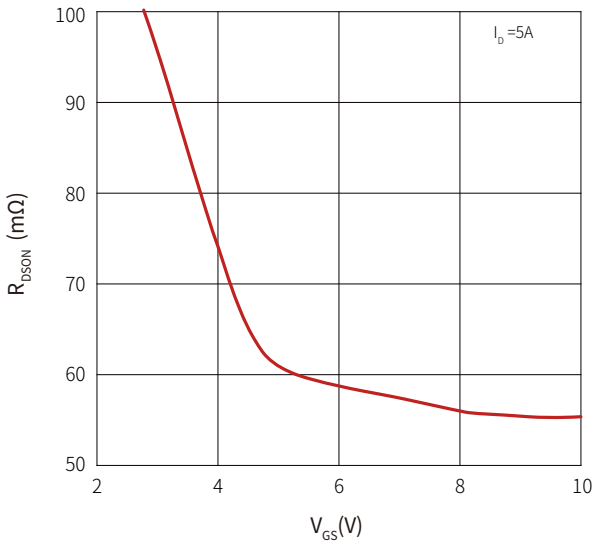


Figure 3: Source Drain Forward Characteristics

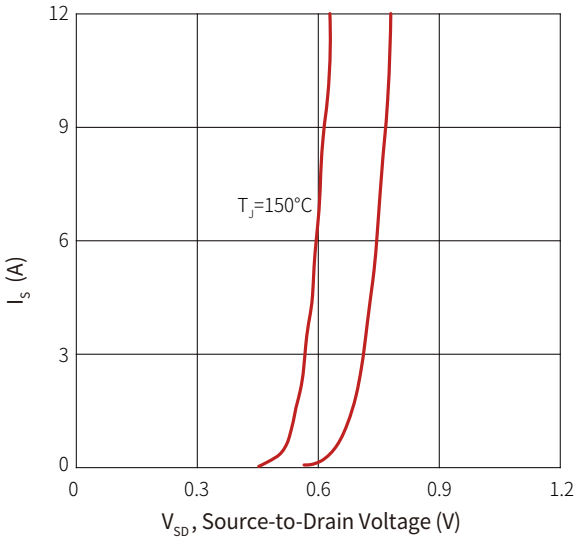


Figure 4: Gate-Charge Characteristics

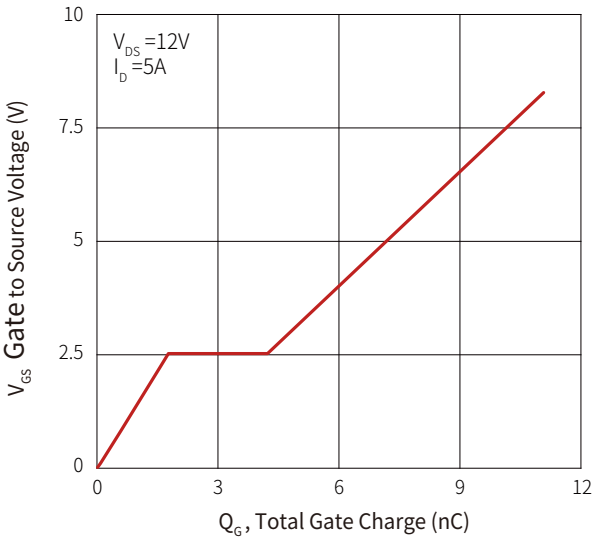


Figure 5: Normalized $V_{GS(th)}$ vs T_J

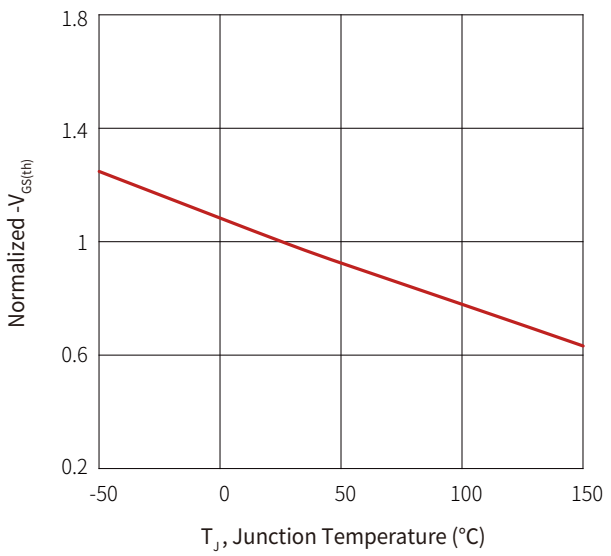


Figure 6: Normalized R_{DSON} vs T_J

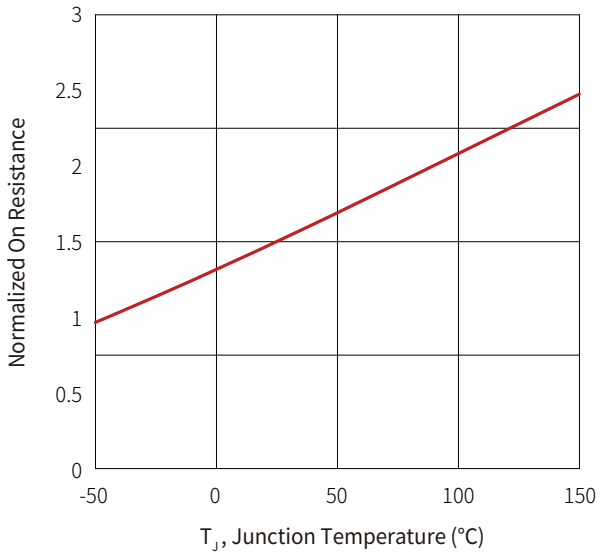


Figure 7: Capacitance

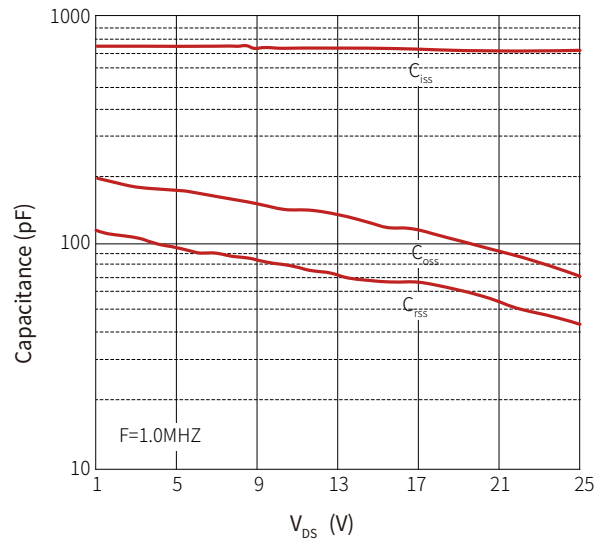


Figure 8: Safe Operating Area

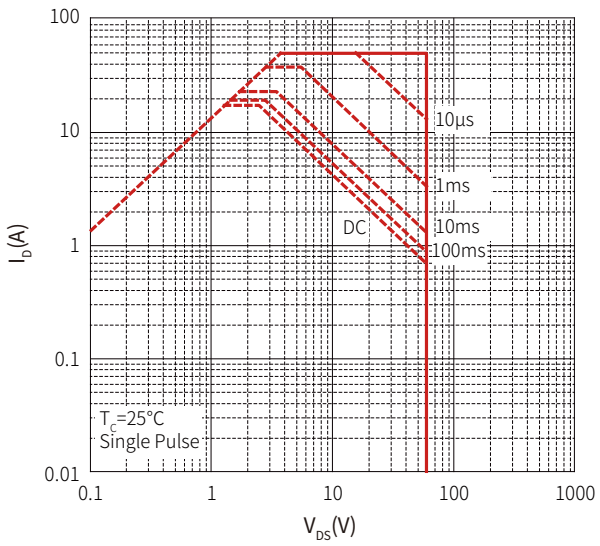


Figure 9: Normalized Maximum Transient Thermal Impedance

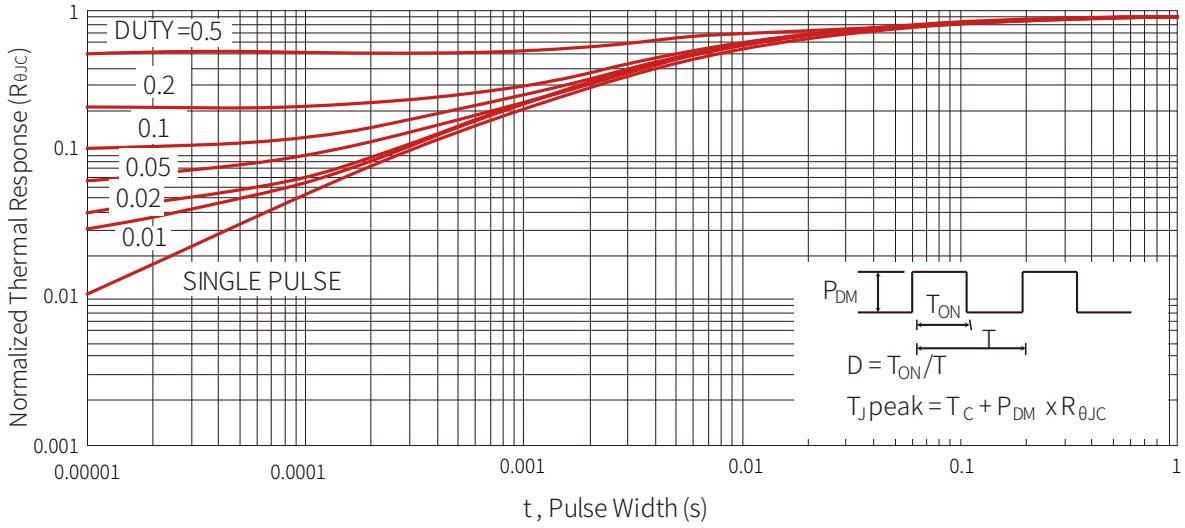


Figure 10: Switching Time Waveform

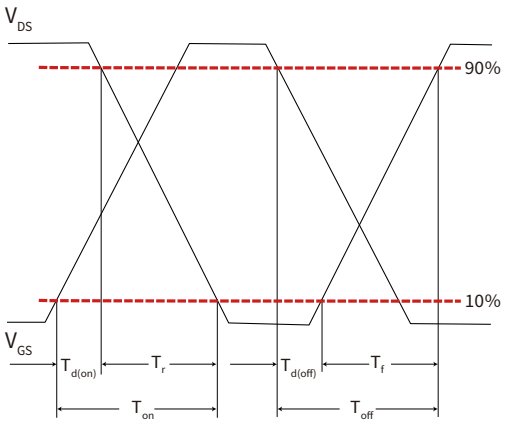
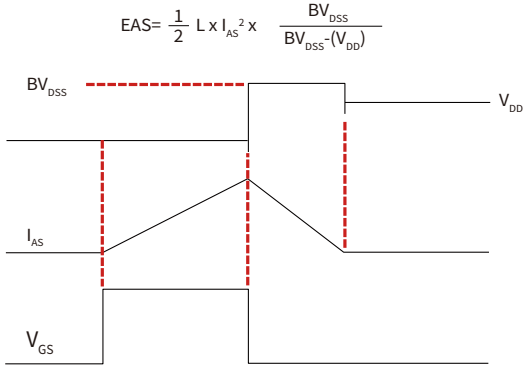
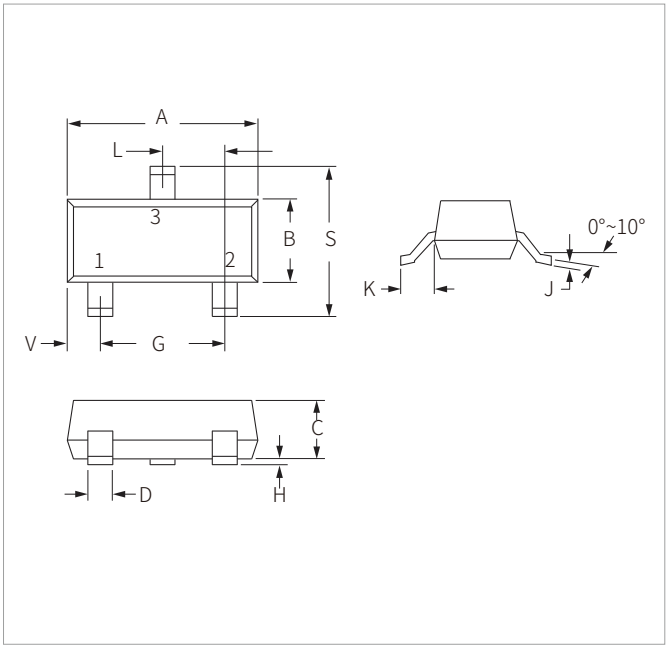


Figure 11: Unclamped Inductive Waveform

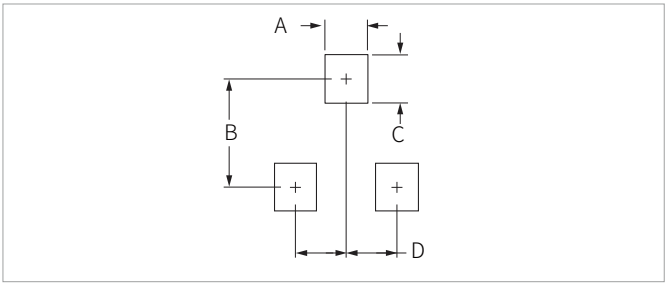


SOT-23-3L PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.15	0.110	0.124
B	1.50	1.70	0.060	0.070
C	1.00	1.30	0.039	0.051
D	0.37	0.50	0.015	0.020
G	1.78	2.10	0.070	0.083
H	0.01	0.15	0.001	0.006
J	0.08	0.18	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.60	3.00	0.102	0.118
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
SNM3422AS	SOT-23-3L	ARDP 7B	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