

FEATURES

- High Density Cell Design For Low $R_{DS(On)}$
- Exceptional on-resistance and maximum DC current capability
- Load/Power Switching
- Interfacing Switching

MECHANICAL DATA

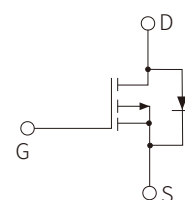
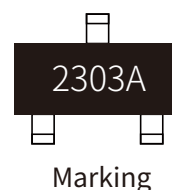
- SOT-23-3L Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any

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
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-4	A
Power Dissipation	P_D	1.4	W
Storage Temperature	T_{stg}	-55~+150	$^{\circ}\text{C}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Thermal Resistance- Junction to Ambient	$R_{\theta JA}$	125	$^{\circ}\text{C/W}$



Schematic Symbol

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Off characteristics						
Drain-source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _{DS} =-250μA	-30			V
Zero Gate Voltage Drain current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V			-1	μA
Gate-body Leakage	I _{GSS}	V _{GS} =±20V, V _{GS} =0V			±100	nA
On characteristics						
Drain-Source On-Resistance (note 1)	R _{DS(on)}	V _{GS} =-10V, I _{DS} =-4A		45	56	mΩ
		V _{GS} =-4.5V, I _{DS} =-2.5A		65	88	mΩ
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _{DS} =-250μA	-1.3	-1.8	-2.3	V
Dynamic characteristics (note 2)						
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-15V, f=1MHz		459		pF
Output capacitance	C _{oss}			59		pF
Reverse transfer capacitance	C _{rss}			44		pF
Switching characteristics (note 2)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-15V, V _{GEN} =-10V R _G = 6Ω, R _L =15Ω, I _{DS} =-1A		8		nS
Turn-on Rise Time	t _r			10		nS
Turn-Off Delay Time	t _{d(off)}			18		nS
Turn-Off Fall Time	t _f			8		nS
Drain-source diode characteristics and maximum ratings						
Diode forward voltage(note 1)	V _{SD}	I _{SD} =-1A, V _{GS} =0V		-0.8	-1.0	V

Notes:

1 : Pulse test ; pulse width ≤ 300μs, duty cycle ≤ 2 %

2 : These parameters have no way to verify

PARAMETER CHARACTERISTIC CURVE

Figure1: Power Capability

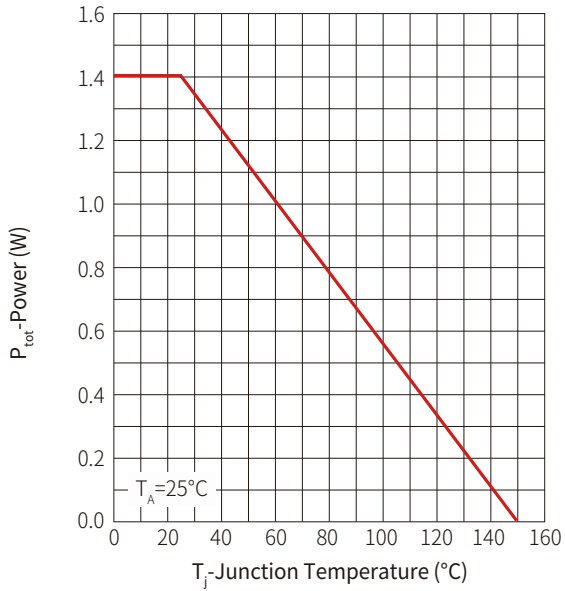


Figure2: Drain Current

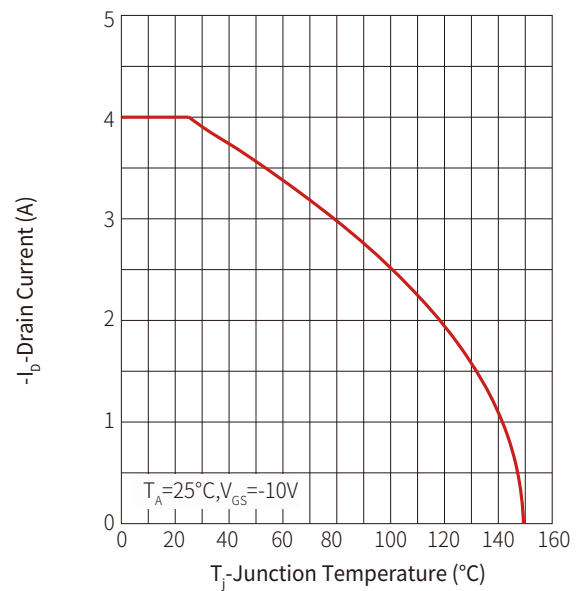


Figure3: Safe operating Area

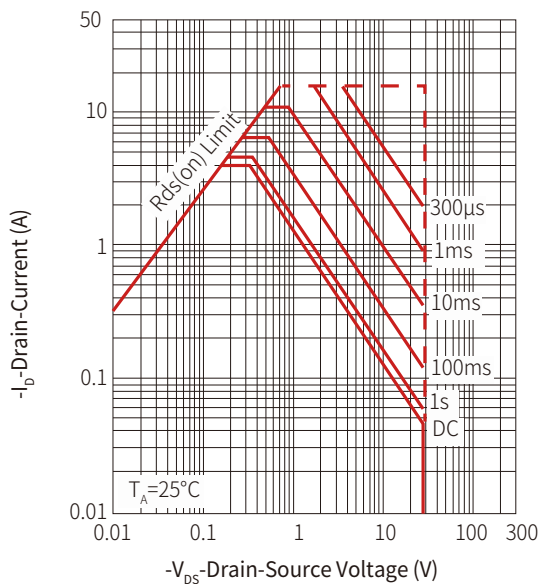


Figure 4: Transient Thermal Impedance

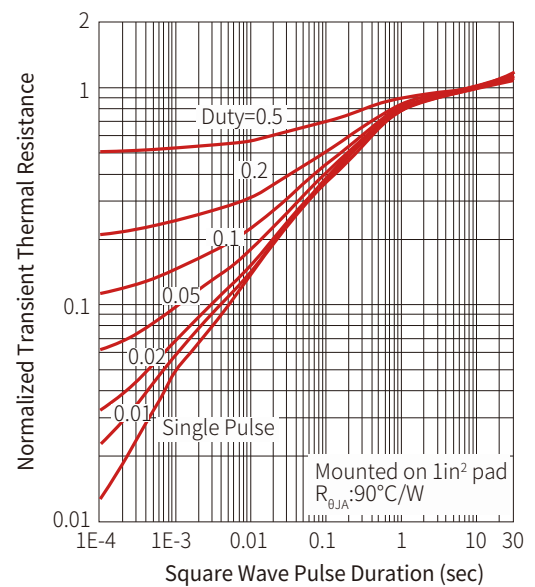


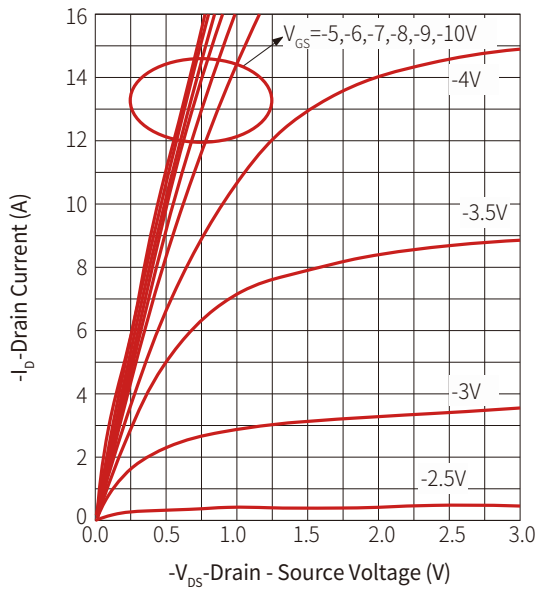
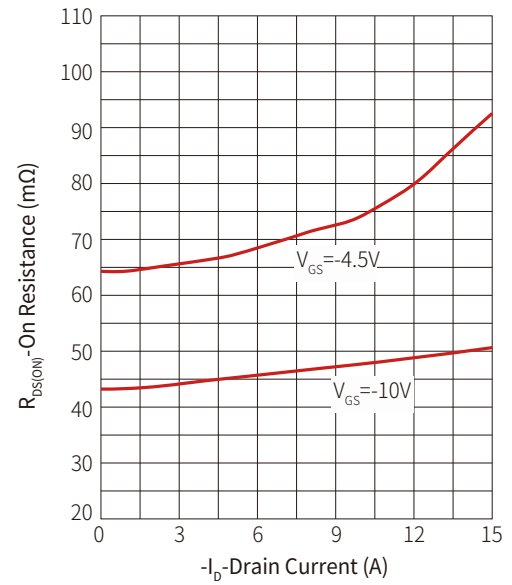
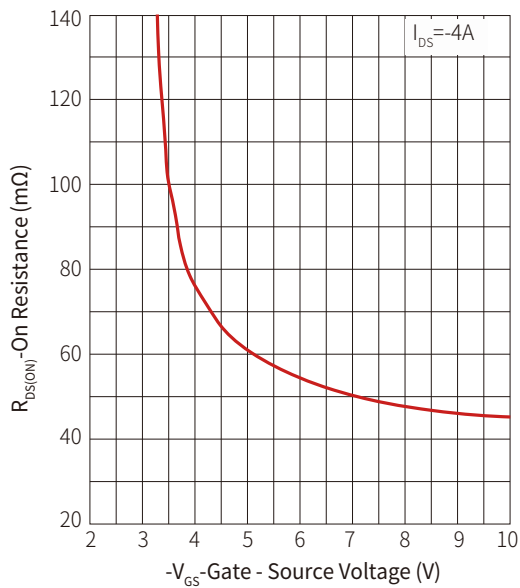
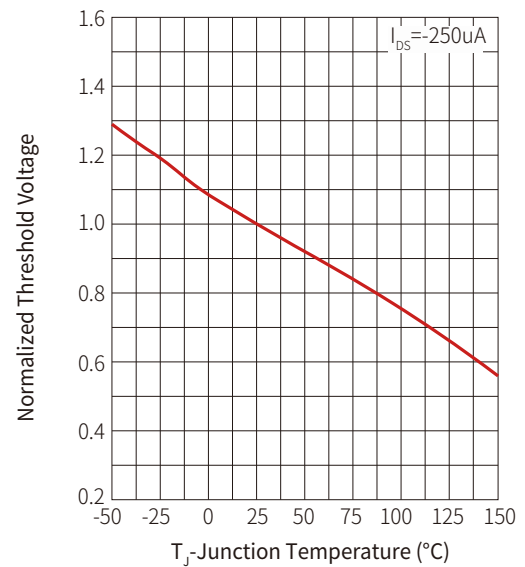
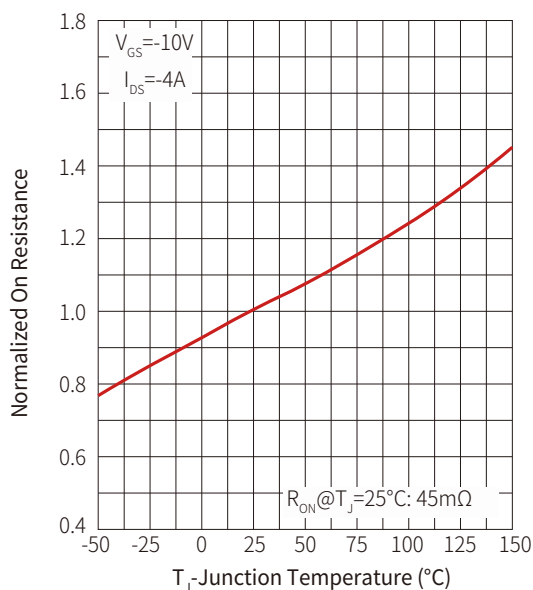
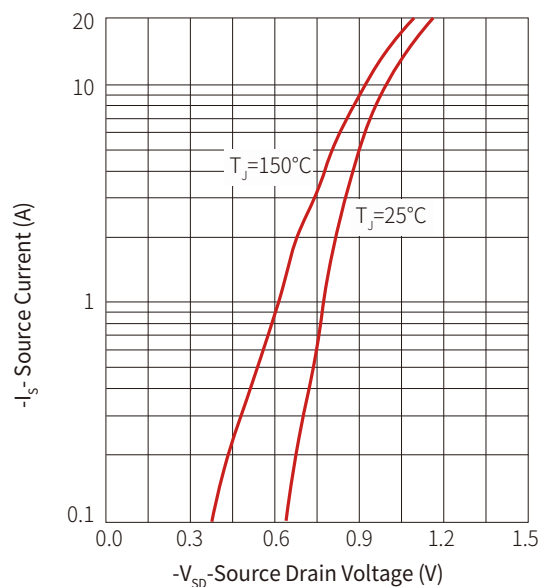
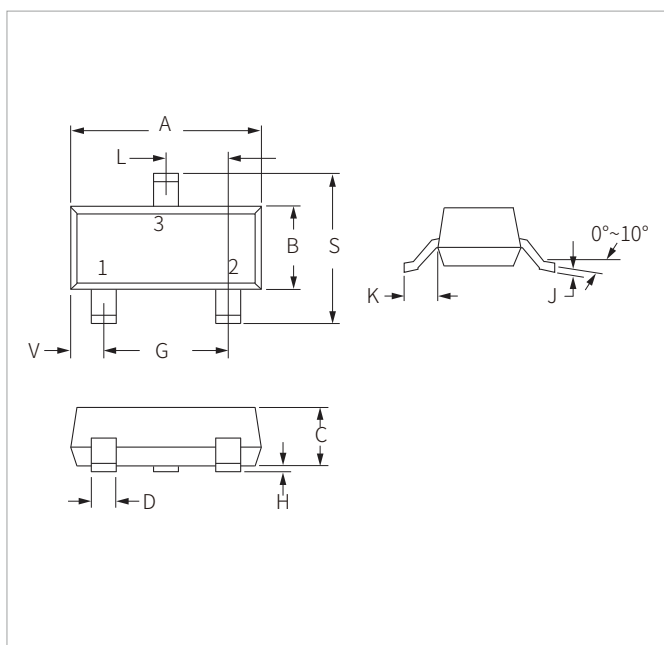
Figure 5: Output Characteristics

Figure 6: Drain-Source On Resistance

Figure 7: Transfer Characteristics

Figure 8: Normalized Threshold Voltage


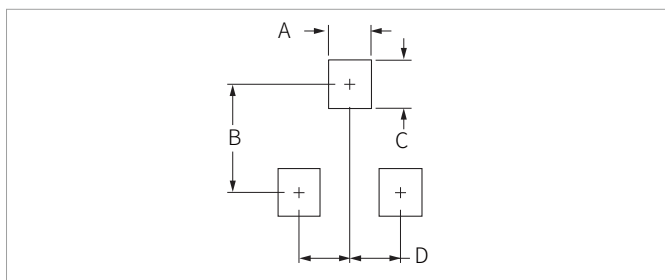
Figure 9: Normalized On Resistance

Figure 10: Diode Forward Current


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	0.70	1.00	0.028	0.039
B	2.30	2.50	0.090	0.098
C	0.70	1.00	0.028	0.039
D	0.80	1.10	0.032	0.043

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SPM2303A	SOT-23-3L	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.