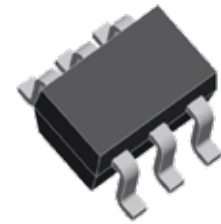


FEATURES

- | Surface-mounted package
- | Advanced trench cell design



SOT-23-6L

APPLICATION

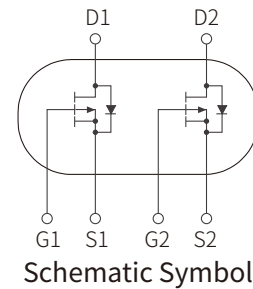
- | LED Display appliances
- | High power inverter system
- | LCDM appliances



Marking

APPROVALS

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



Schematic Symbol

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

Parameter	Symbol	Conditions	Value	Unit
Drain-Source Voltage	V_{DS}	$T_A=25^{\circ}\text{C}$	-30	V
Gate-Source Voltage	V_{GS}	$T_A=25^{\circ}\text{C}$	± 20	V
Drain Current (DC)	I_D^*	$T_A=25^{\circ}\text{C}, V_{GS}=-10\text{V}$	-6.3	A
		$T_A=100^{\circ}\text{C}, V_{GS}=-10\text{V}$	-4	A
Pulsed Drain Current	I_{DM}^{**}	$T_A=25^{\circ}\text{C}, V_{GS}=-10\text{V}$	-25	V
Total Power Dissipation	P_{tot}	$T_A=25^{\circ}\text{C}$	2	W
Storage Temperature	T_{STG}		-55 to 150	$^{\circ}\text{C}$
Junction Temperature	T_J		-55 to 150	$^{\circ}\text{C}$
Diode Forward Current	I_S	$T_A=25^{\circ}\text{C}$	-6.3	A
Thermal Resistance- Junction to Ambient	$R_{\theta JA}^*$		62.5	$^{\circ}\text{C}/\text{W}$

Notes: * Surface Mounted on 1 in² pad area, $t \leq 10$ sec
 ** Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$

ELECTRICAL CHARACTERISTICS(T_a = 25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _{DS} =250μA	-30			V
Drain Leakage Current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V			-1.0	μA
Gate Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _{DS} =250μA	-1.0		-2.0	V
On-State Resistance	R _{DS(on)} ^a	V _{GS} =-10V, I _{DS} =-6A		45	55	mΩ
		V _{GS} =-4.5V, I _{DS} =-3A		55	65	
Diode Characteristics						
Diode Forward Voltage	V _{SD} ^a	V _{GS} =0V, I _{SD} =-6A			-1.3	V
Reverse Recovery Time	t _{rr}	I _{SD} = -6A, dI _{SD} /dt = 100 A/μs		38		ns
Reverse Recovery Charge	Q _{rr}			17		nC
Dynamic Characteristics^b						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V Frequency = 1 MHz		750		pF
Output Capacitance	C _{oss}			115		
Reverse Transfer Capacitance	C _{rss}			75		
Turn-On Delay Time	t _{d(on)}	V _{DS} =-15V, R _L =2.5Ω V _{GEN} =-10V, R _G =4.5Ω, I _{DS} =-6A		7		ns
Turn-On Rise Time	t _r			3		
Turn-Off Delay Time	t _{d(off)}			30		
Turn-Off Fall Time	t _f			12		
Gate Charge Characteristics^b						
Total Gate Charge	Q _g	V _{GS} =-10V, V _{DS} =-15V, I _{DS} =-6A		9.5		nC
Gate Source Charge	Q _{gs}			2		
Gate Drain Charge	Q _{gd}			3		

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

PARAMETER CHARACTERISTIC CURVE

Figure1: Power Capability

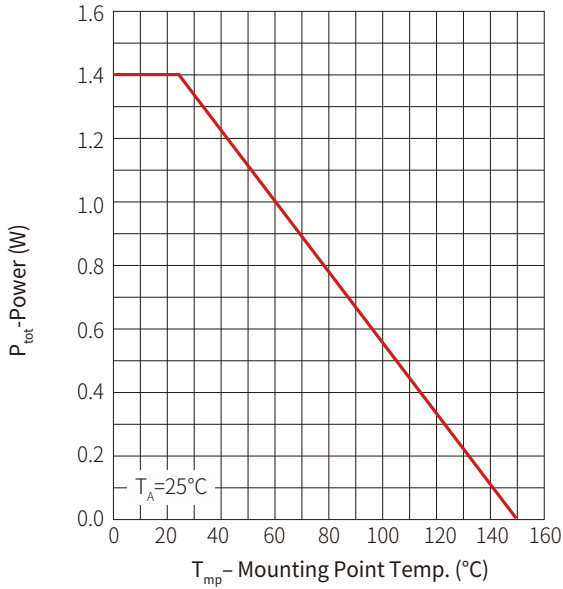


Figure2: Current Capability

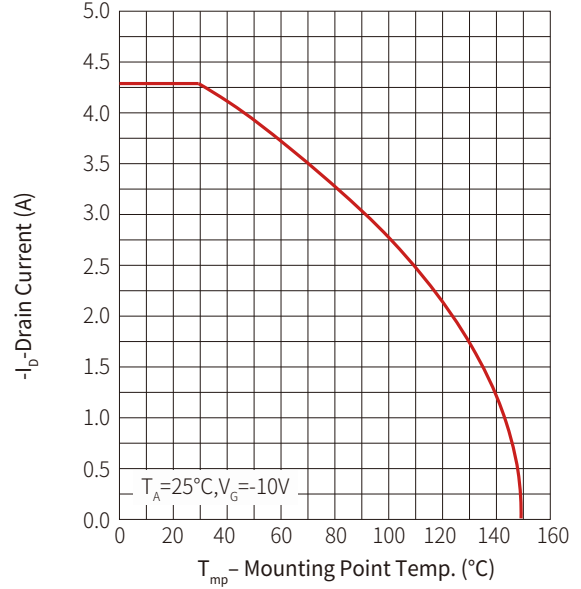


Figure3: Safe Operating Area

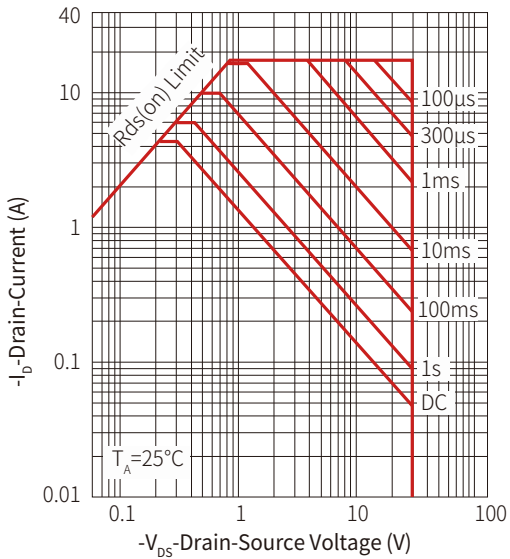


Figure 4: Transient Thermal Impedance

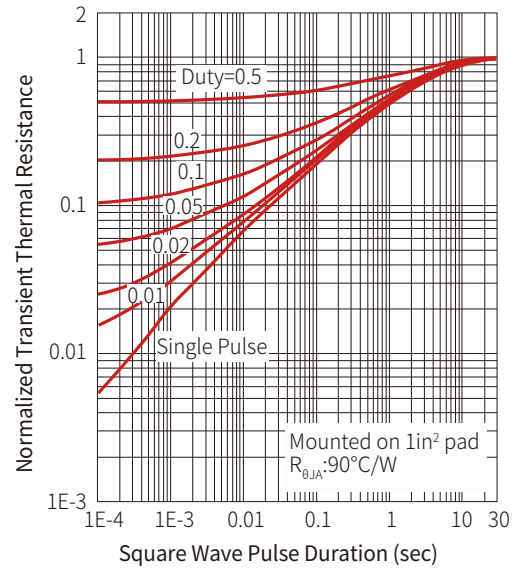


Figure 5: Output Characteristics

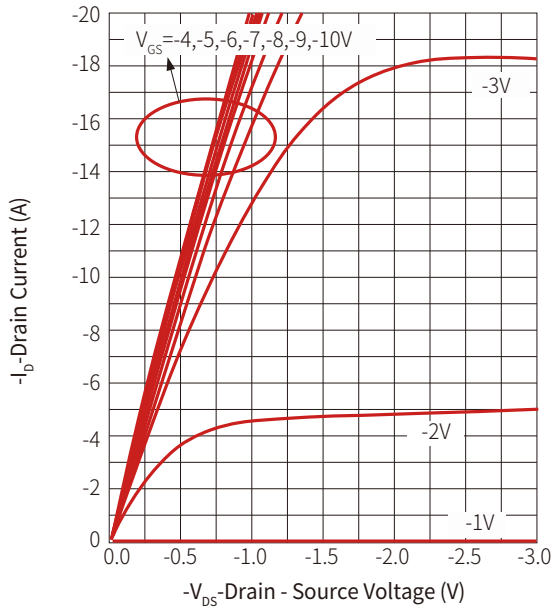


Figure 6: On Resistance

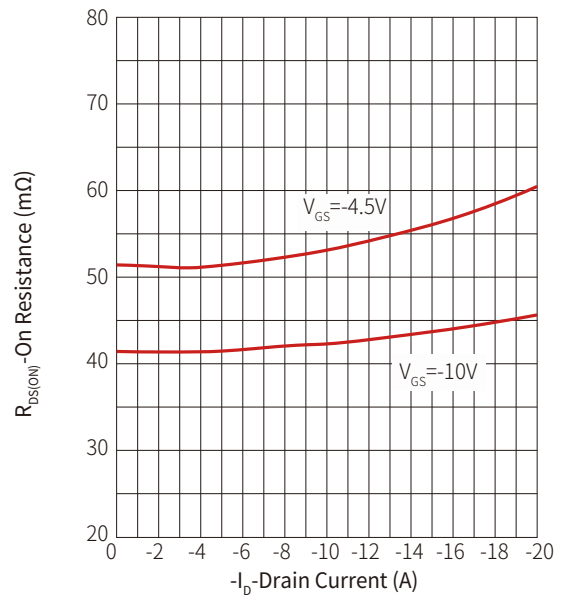


Figure 7: Transfer Characteristics

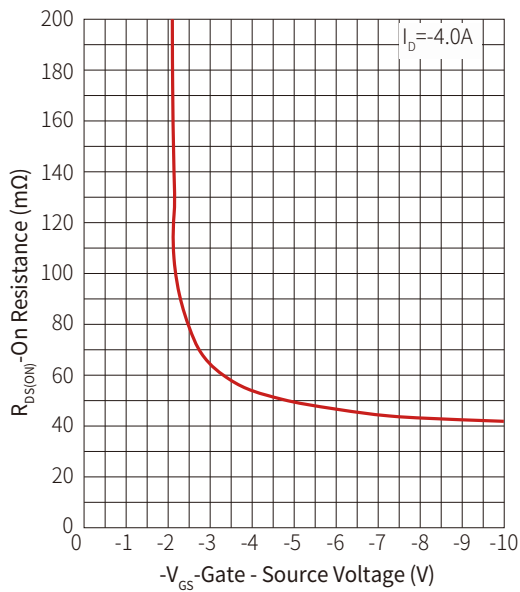


Figure 8: Normalized Threshold Voltage

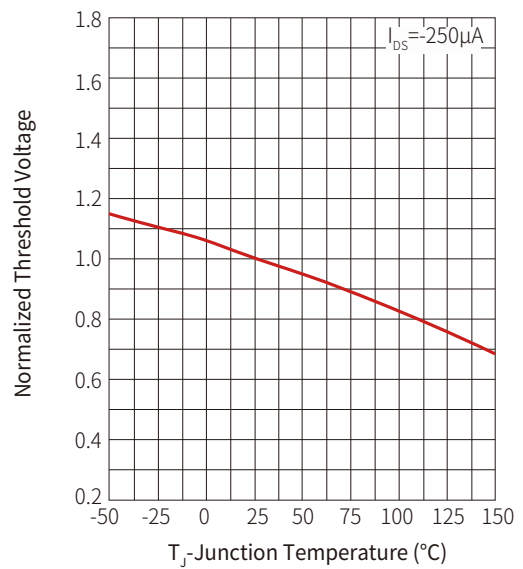


Figure 9: Normalized On Resistance

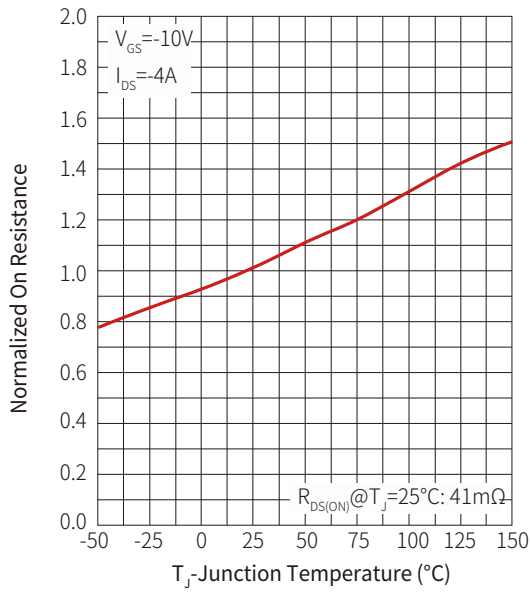


Figure 10: Diode Forward Current

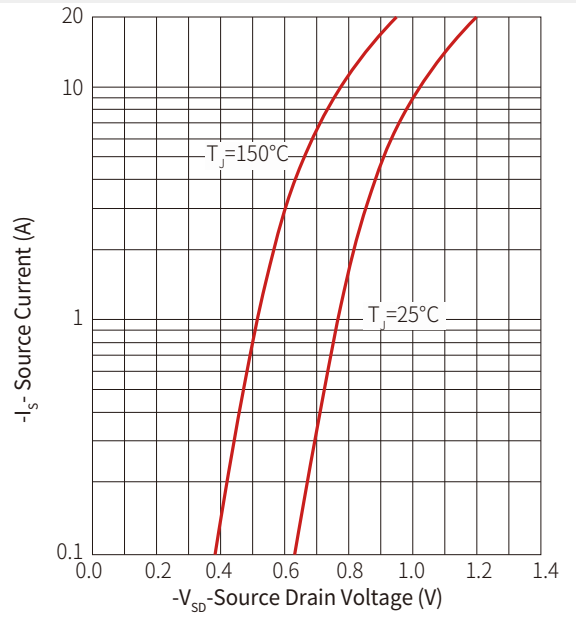


Figure 11: Capacitance

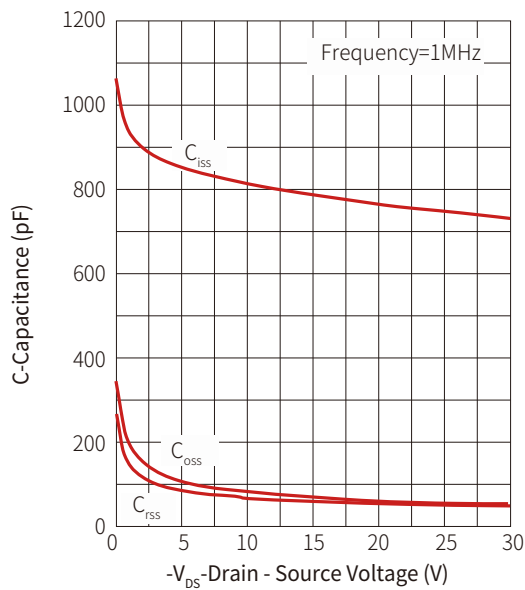
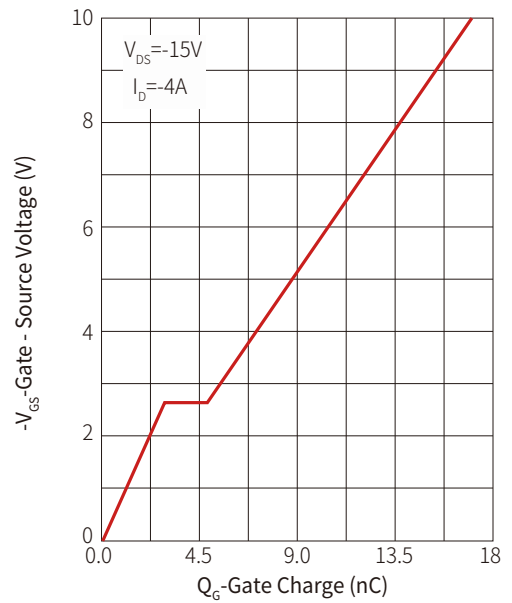
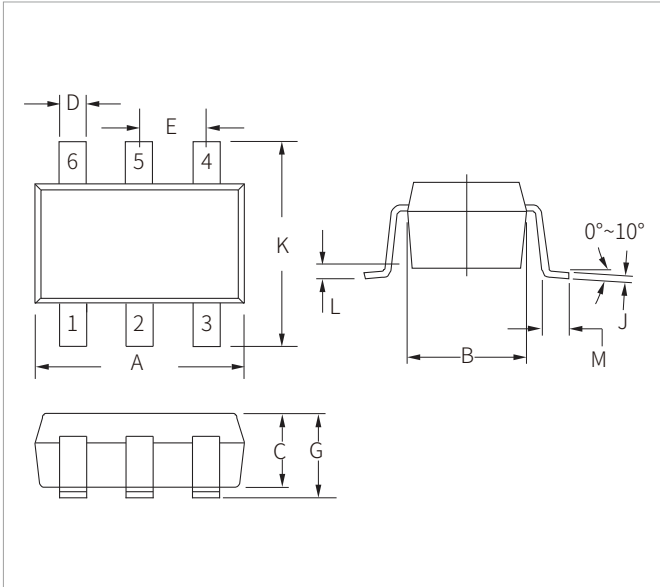


Figure 12: Gate Charge

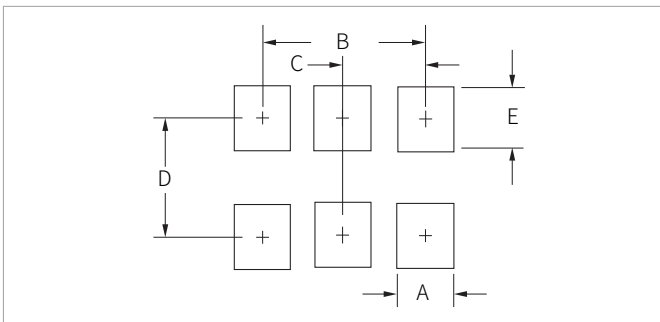


SOT-23-6L PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.10	0.110	0.125
B	1.50	1.80	0.059	0.071
C	0.90	1.30	0.036	0.051
D	0.25	0.50	0.010	0.020
E	0.85	1.05	0.033	0.040
G	0.90	1.45	0.036	0.057
J	0.09	0.20	0.003	0.008
K	2.60	3.00	0.102	0.118
L	0.0	0.15	0.0	0.006
M	0.30	0.60	0.012	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
	Nominal	Nominal
A	0.70	0.028
B	1.90	0.074
C	0.95	0.037
D	2.40	0.094
E	1.00	0.039

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SPM4953CS	SOT-23-6L	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.