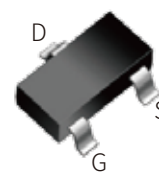
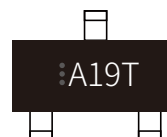


FEATURES

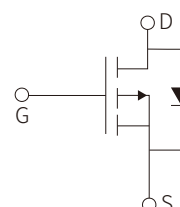
- | $V_{DS} = -30V$, $I_D = -3.8A$
- | $R_{DS(ON)} < 70\text{ m}\Omega$ @ $V_{GS} = -4.5V$
- | $R_{DS(ON)} < 90\text{ m}\Omega$ @ $V_{GS} = -2.5V$
- | High Power and current handing capability
- | Lead free product is acquired
- | Surface Mount Package



SOT-23



Marking



Schematic Symbol

APPLICATION

- | PWM applications
- | Load switch
- | Power management
- | Video monitor

APPROVALS

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

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate Threshold Voltage	V_{GSS}	± 12	V
Drain Current - Continuous ($T_c=25^\circ\text{C}$)	I_D	-3.8	A
Drain Current - Continuous($T_c=70^\circ\text{C}$)		-3.2	
Pulsed Drain Current(Note1)	I_{DM}	-16	A
Power Dissipation ($T_c=25^\circ\text{C}$)	P_D	0.72	W
Thermal Resistance Junction- to- Ambient ($R_{\theta JA} \leq 5s$)	$R_{\theta JA}$	145	$^\circ\text{C/W}$
Thermal Resistance Junction- to- Ambient (Steady-State)	$R_{\theta JA}$	175	$^\circ\text{C/W}$
Thermal Resistance Junction- to- Ambient	$R_{\theta JL}$	78	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Gate-source leakage current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V$			-1	μA
On Characteristics						
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.5		-1.3	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-3.8A$		47	60	m Ω
		$V_{GS}=-4.5V, I_D=-3.8A$		55	72	m Ω
		$V_{GS}=-2.5V, I_D=-2A$		75	92	m Ω
Diode Forward Voltage	V_{SD}	$I_S=-3A, V_{GS}=0V$		-0.8	-1.2	V
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		676		pF
Output Capacitance	C_{oss}			60		pF
Reverse Transfer Capacitance	C_{rss}			51		pF
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-15V, I_D=-3A$ $V_{GEN}=-10V, R_G=6\Omega$ $R_L=3.6\Omega$		8		ns
Turn-on Rise Time	t_r			5		ns
Turn-Off Delay Time	$t_{d(off)}$			26		ns
Turn-off Fall Time	t_f			11		ns
Total Gate Charge	Q_g	$V_{DS}=-8V, I_D=-3A$ $V_{GS}=-4.5V$		10		nC
Gate-Source Charge	Q_{gs}			2.4		nC
Gate-Drain Charge	Q_{gd}			2.2		nC
Gate Resistance	R_g	$f=1MHz$		1		Ω

Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

PARAMETER CHARACTERISTIC CURVE

Figure1: Output Characteristic

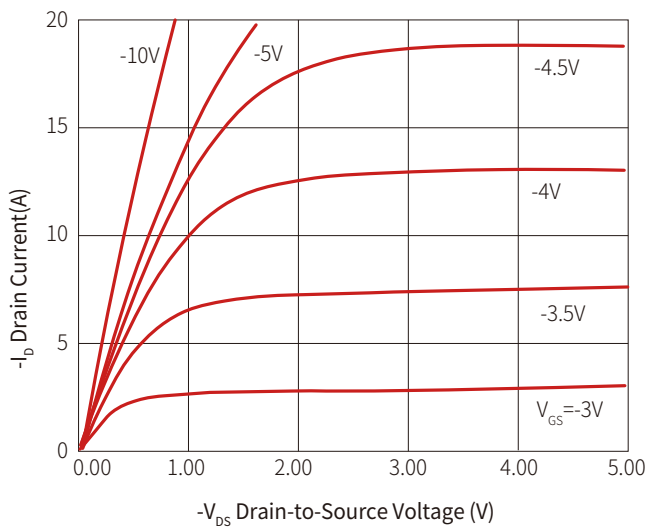


Figure2: On-Resistance vs. Drain Current

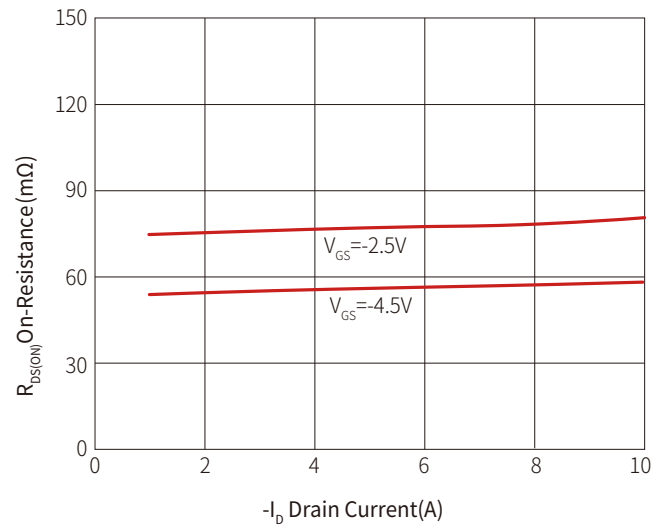


Figure3: Transfer Characteristic

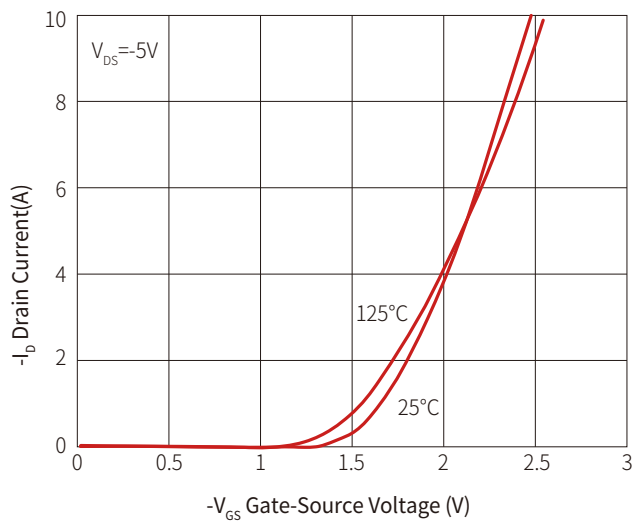


Figure 4: On-Resistance vs. Junction Temperature

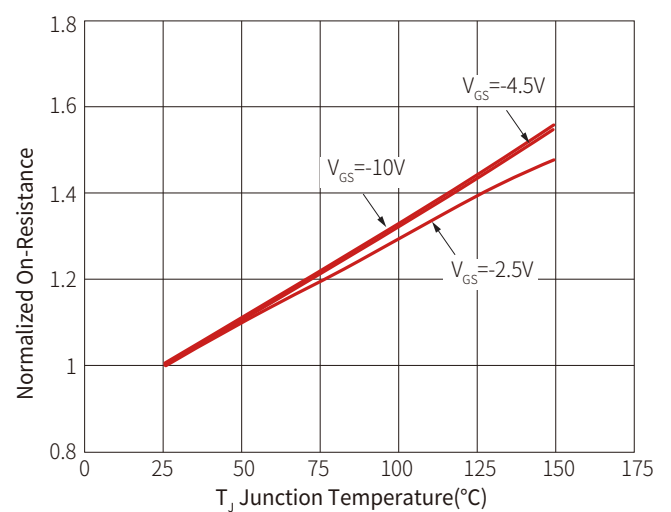
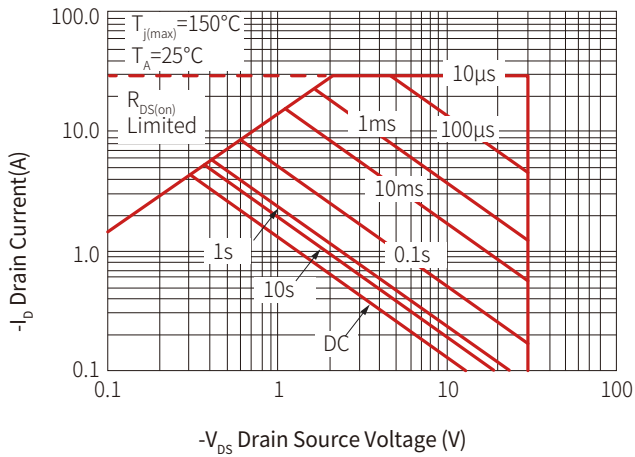
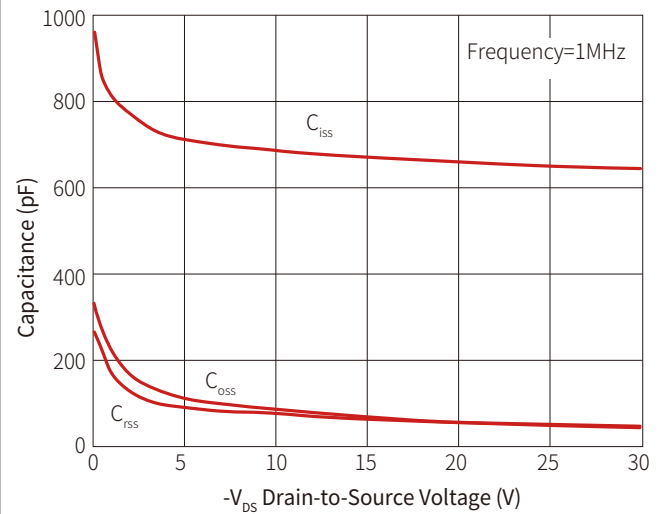
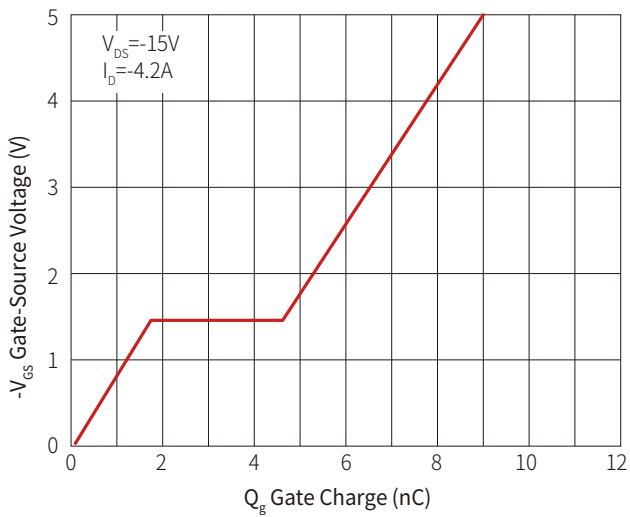
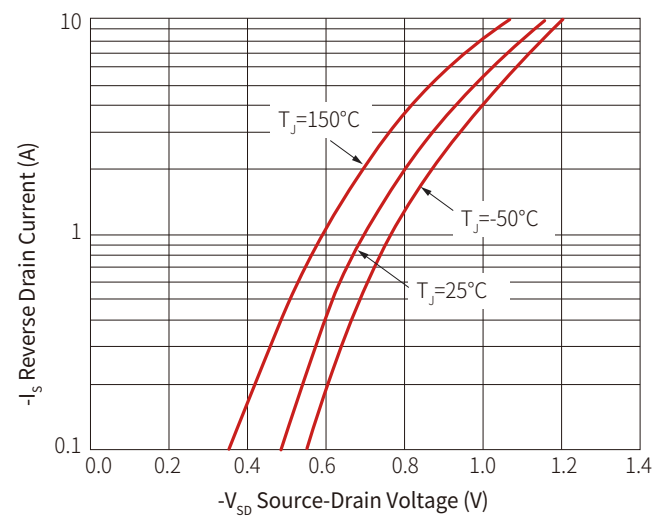
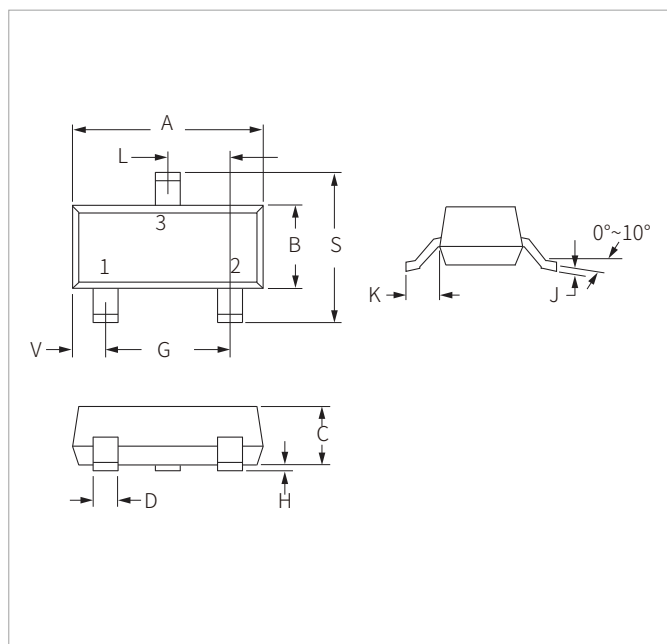


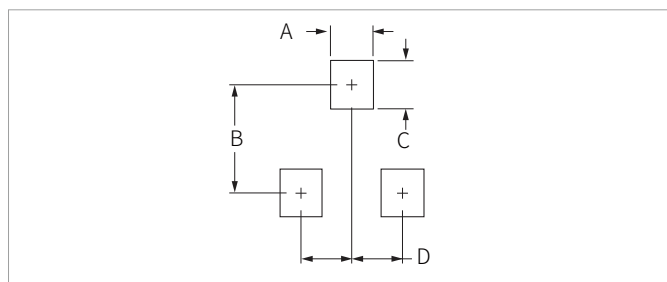
Figure 5: Safe Operation Area

Figure 6: Capacitance Characteristic

Figure 7: Gate-Charge Characteristic

Figure 8: Body Diode Characteristic


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	0.110	0.120
B	1.20	1.60	0.047	0.063
C	0.90	1.15	0.035	0.045
D	0.37	0.50	0.015	0.020
G	1.75	2.05	0.069	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.65	0.083	0.104
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	QTY/Reel	Reel Size
SPM3401S	SOT-23	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

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