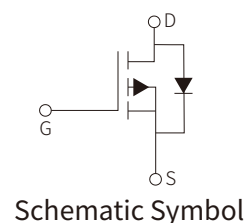
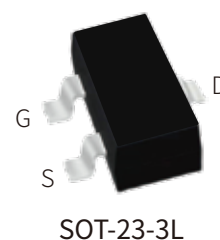


FEATURES

- | High Density Cell Design For Low $R_{DS(On)}$
- | Voltage Controlled Small Signal Switch
- | Rugged and Reliable
- | High Saturation Current Capability
- | Lead free product is acquired

APPLICATION

- | Direct logic-level interface: TTL/CMOS
- | Drivers: relays, solenoids, lamps
- | hammers, display, memories, etc.
- | Battery operated systems
- | Solid-state relays



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
Maximum Drain Current - Continuous	I_D	-4.2	A
Pulsed Drain Current	I_{DM}	-30	A
Gate-Source Voltage	V_{GS}	± 12	V
Power Dissipation	P_D	1.4	W
Junction Temperature	T_J	-55 to 150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}\text{C}$

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	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V			-1	μA
		V _{DS} =-24V, V _{GS} =0V, T _J =55°C			-5	
Gate-Body Leakage.	I _{GSS}	V _{GS} =±12V, V _{DS} =0V			±0.1	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.7	-1	-1.3	V
Static Drain-Source On-Resistance	R _{DS(on)(1)}	V _{GS} =-10V, I _D =-4.2A		52	60	mΩ
	R _{DS(on)(2)}	V _{GS} =-10V, I _D =-4.2A, T _J =125°C			75	mΩ
	R _{DS(on)(3)}	V _{GS} =-4.5V, I _D =-4A		60	65	mΩ
	R _{DS(on)(4)}	V _{GS} =-2.5V, I _D =-1A		75	120	mΩ
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _F =-1A		-0.75	-1	V
Reverse Recovery Time	T _{rr}	I _{DS} =-4A, dI/dt=100A/μs		20.2		nS
Reverse Recovery Charge	Q _{rr}			11.2		nC
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1.0MHz		957		pF
Output Capacitance	C _{oss}			115		pF
Reverse Transfer Capacitance	C _{rss}			77		pF
Turn-On Delay Time	t _{d(on)}	V _{DS} =-15V, V _{GS} =-10V R _L =3.6Ω, R _G =6Ω		6.3		ns
Turn-On Rise Time	t _r			3.2		ns
Turn-Off Delay Time	t _{d(off)}			38.2		ns
Turn-Off Fall Time	t _f			12		ns
Total Gate Charge	Q _g			9.4		nC
Gate- Source Charge	Q _{gs}	V _{DS} =-15V, V _{GS} =-4.5V, I _D =-4A		2		nC
Gate- Drain Charge	Q _{gd}			3		nC

PARAMETER CHARACTERISTIC CURVE

Fig 1: On-Region Characteristics

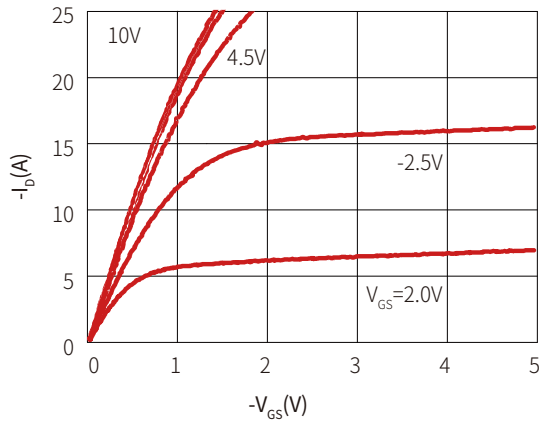


Figure 2: Transfer Characteristics

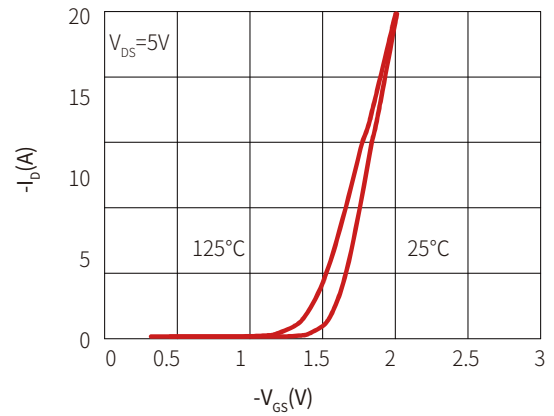


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

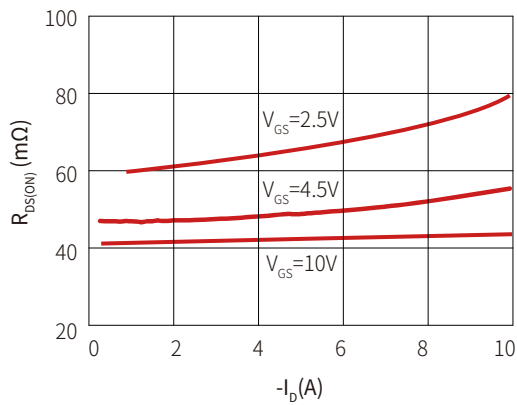


Figure 4: On-Resistance vs. Junction Temperature

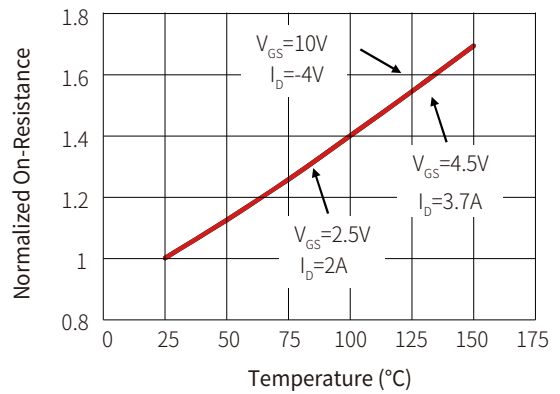


Figure 5: On-Resistance vs. Gate-Source Voltage

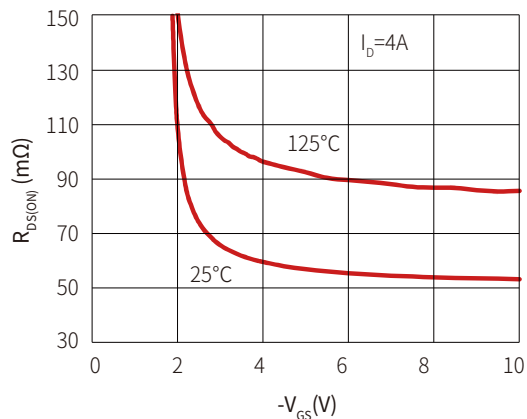


Figure 6: Body-Diode Characteristics

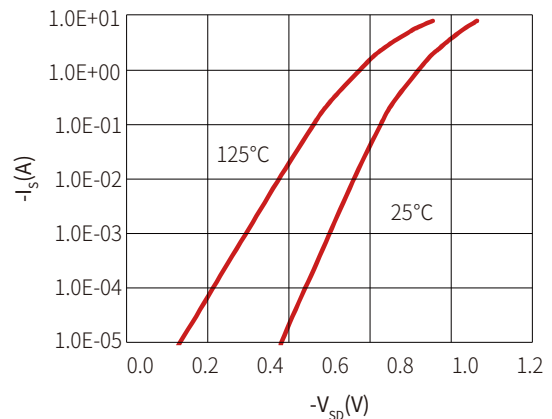
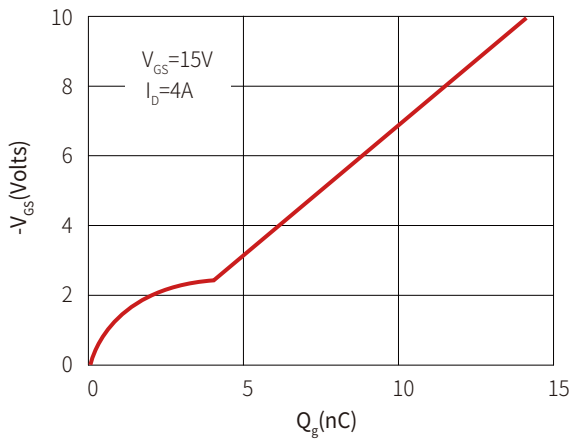
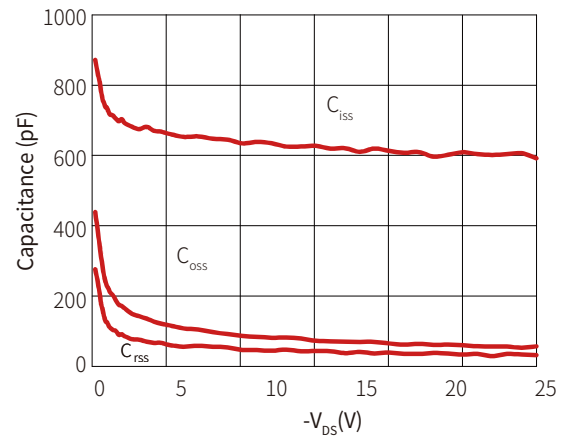
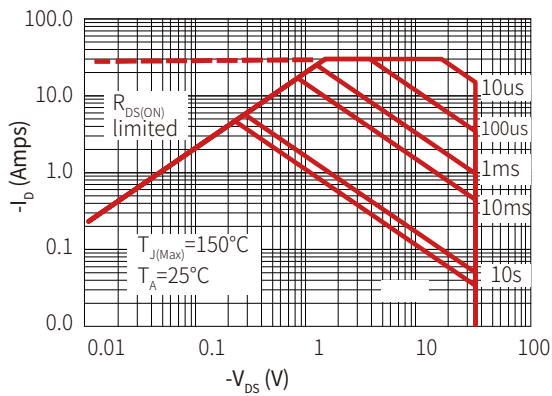
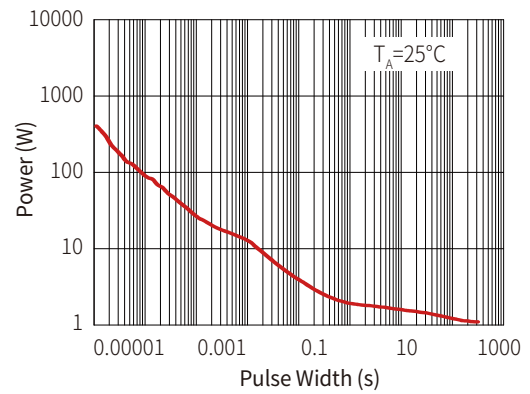
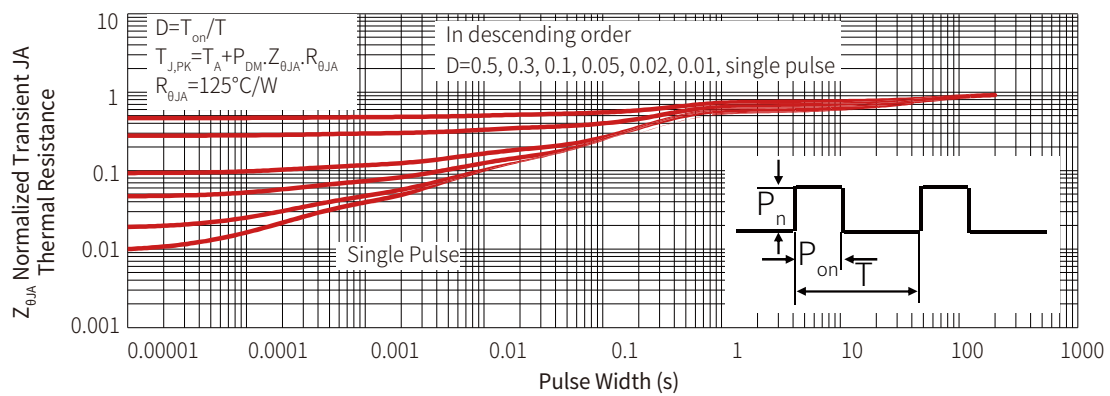
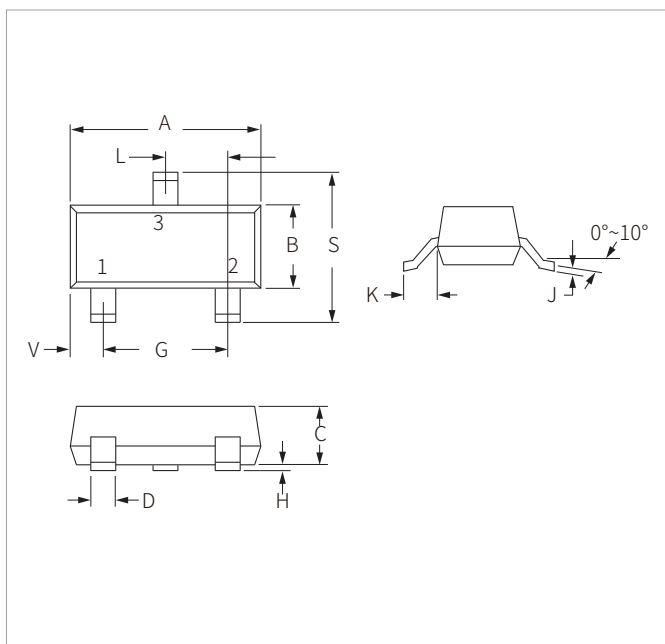


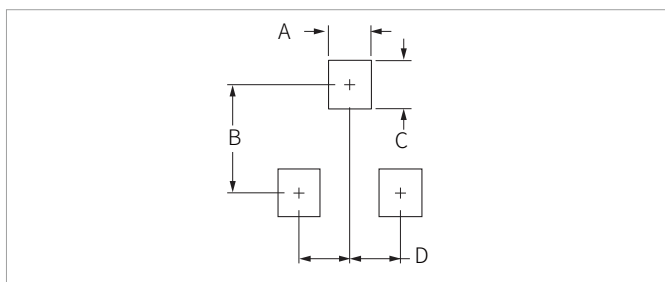
Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics

Figure 9: Maximum Forward Biased Safe Operating Area

Figure 10: Single Pulse Power Rating Junction-to-Ambient

Figure 11: Normalized Maximum Transient Thermal Impedance


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
SPM3401	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

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