

FEATURES

| $V_{DS} = 20V$, $I_D = 6A$ $R_{DS(ON)} < 27m\Omega$ @ $V_{GS} = 4.5V$

| $R_{DS(ON)} < 35m\Omega$ @ $V_{GS} = 2.5V$

| High Power and current handing capability

| Lead free product is acquired

| Surface Mount Package

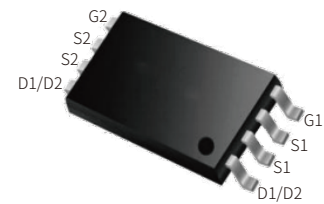
| ESD

APPLICATION

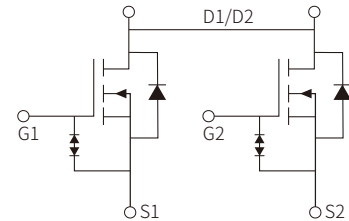
| PWM applications

| Load switch

| Power management



TSSOP-8



Schematic Symbol

APPROVALS

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

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

Parameter		Symbol	Value	Unit
Drain-source voltage		V_{DS}	20	V
Continuous drain current ($T_J = 150^\circ C$) ^a	$T_A = 25^\circ C$	I_D	6.0	A
	$T_A = 70^\circ C$		4.5	A
Continuous source current (diode conduction) ^b		I_{DM}	25	A
Pulsed Drain Current ^a		I_S	1.2	A
Gate-source voltage		V_{GS}	± 10	V
Power dissipation ^a	$T_A = 25^\circ C$	P_D	1.25	W
	$T_A = 70^\circ C$		0.9	W
Maximum junction-to-ambient Steady-State ^a		$R_{\theta JA}$	125	$^\circ C/W$
Operating junction and storage temperature range		T_J, T_{STG}	-55 to 150	$^\circ C$

a. Surface mounted on 1" x 1" FR4 board

b. Pulse width limited by maximum junction temperature

Product Datasheet | Rev. A2.0

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off Characteristic						
Drain-source Breakdown Voltage	BV _{DSS}	V _{GS} =0V,I _D =250μA	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V,V _{GS} =0V			1	μA
Gate–Body Leakage Current	I _{GSS}	V _{GS} =±10V,V _{DS} =0V			±100	nA
ON Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =250μA	0.5	0.7	1.2	V
Drain-Source On–State Resistance ^a	R _{DS(on)}	V _{GS} =4.5V,I _D =4A		19	27	mΩ
		V _{GS} =2.5V,I _D =3A		24	35	mΩ
Forward transconductance ^a	g _{FS}	V _{DS} =5V,I _D =4A		10		S
Dynamic Characteristics ^b						
Input Capacitance	C _{iss}	V _{DS} =8V,V _{GS} =0V,F=1.0MHz		600		pF
Output Capacitance	C _{oss}			330		pF
Reverse Transfer Capacitance	C _{rss}			140		pF
Switching Characteristics						
Turn–On Delay Time	t _{d(on)}	V _{DD} =10V,I _D =1A,V _{GEN} =4V R _{GEN} =10mΩ		18		nS
Turn–On Rise Time	t _r			5		nS
Turn–Off Delay Time	t _{d(off)}			43		nS
Turn–Off Fall Time	t _f			20		nS
Total Gate Charge	Q _g	V _{DS} =10V,V _{GS} =4.5V,I _D =4A		11		nC
Gate- Source Charge	Q _{gs}			2.3		nC
Gate- Drain Charge	Q _{gd}			2.5		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V,I _S =2A		0.75	1.0	V

Notes

a. Pulse test: Pulse width < 300 μs, duty cycle < 2 %

b. Guaranteed by design, not subject to production testing

PARAMETER CHARACTERISTIC CURVE

Figure1: Power Dissipation

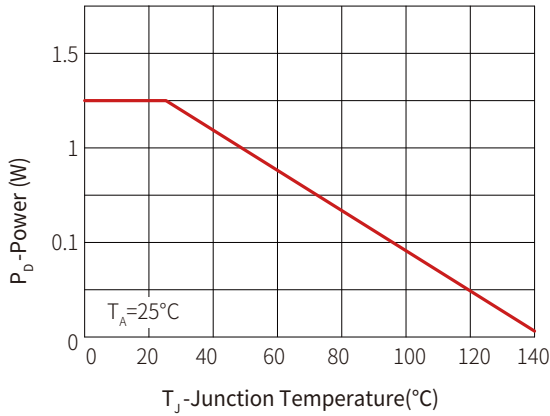


Figure 2: Drain Current

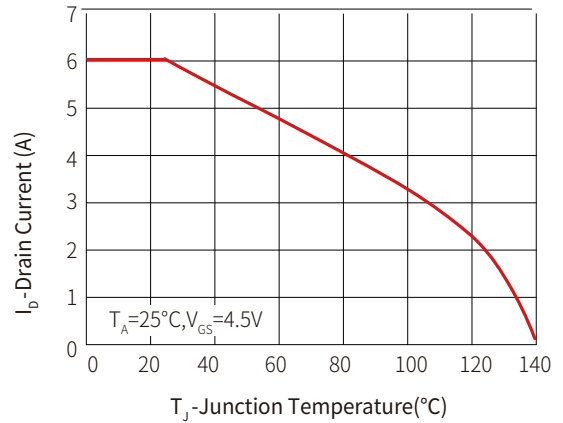


Figure 3: Output Characteristics

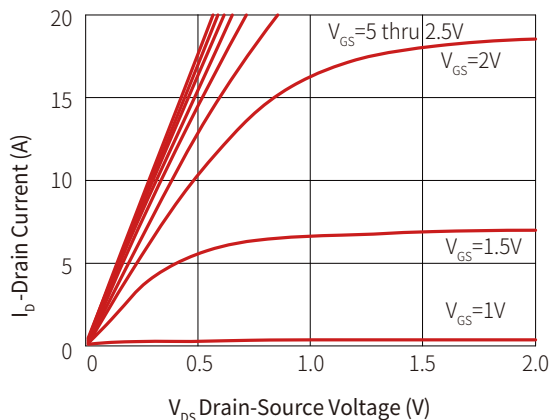


Figure 4: Drain-Source On-Resistance

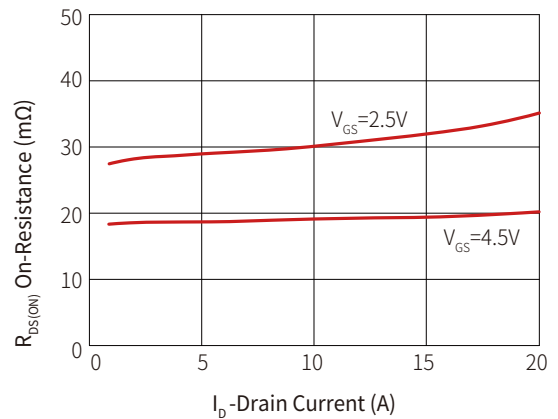


Figure 5: Transfer Characteristics

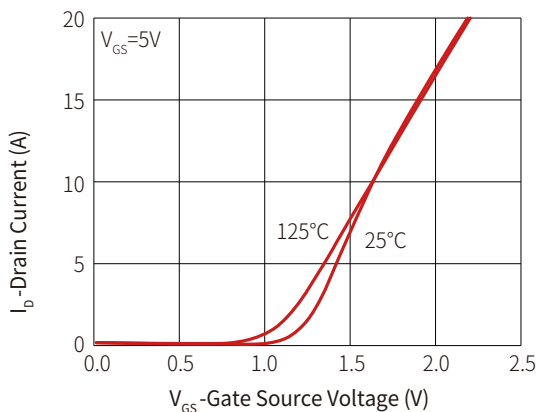


Figure 6: Drain-Source On-Resistance

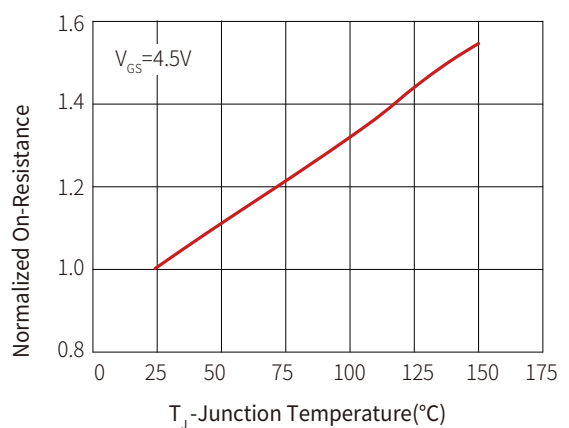
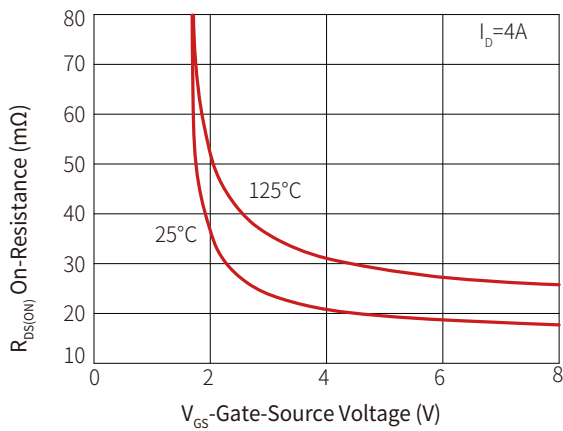
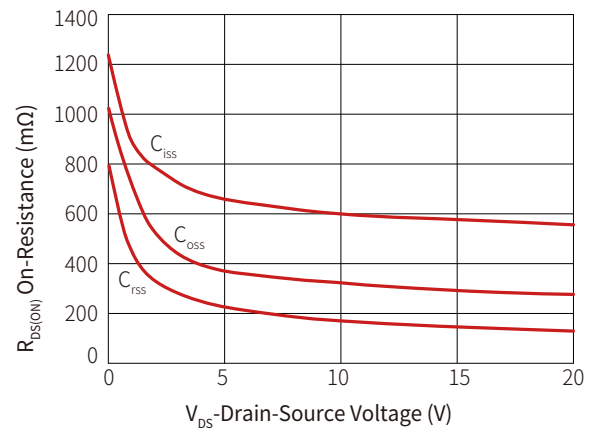
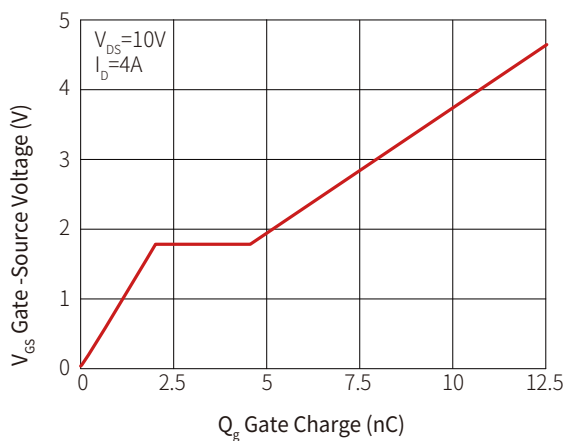
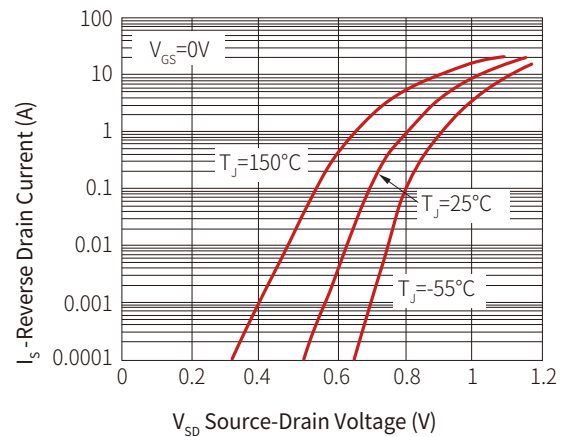
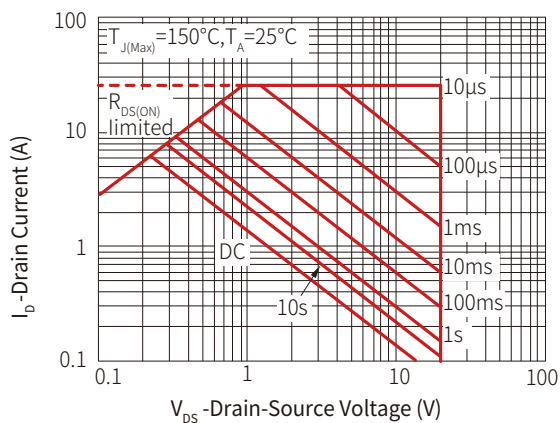
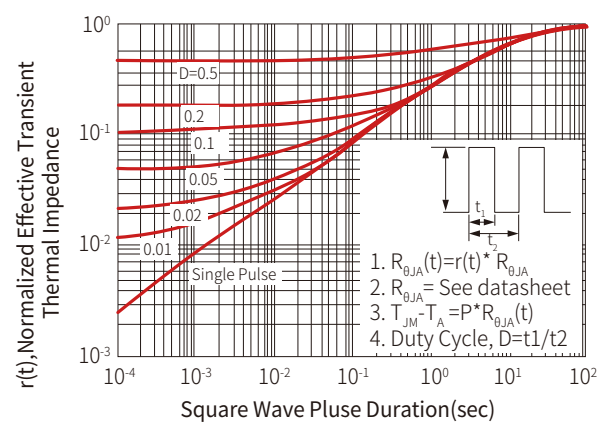
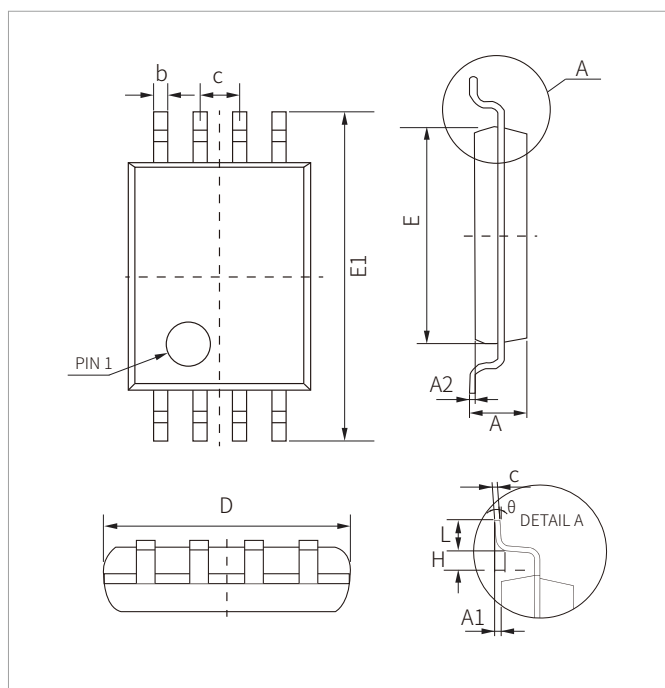


Figure 7: $R_{DS(ON)}$ vs V_{GS}

Figure 8: Capacitance vs V_{DS}

Figure 9: Gate Charge

Figure 10: Source- Drain Diode Forward

Figure 11: Safe Operation Area

Figure 12: Normalized Maximum Transient Thermal Impedance


TSSOP-8 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
D	2.90	3.10	0.114	0.122
E	4.30	4.50	0.169	0.177
b	0.19	0.30	0.007	0.012
c	0.09	0.20	0.004	0.008
E1	6.25	6.55	0.246	0.258
A	-	1.20	-	0.047
A2	0.80	1.00	0.031	0.039
A1	0.05	0.15	0.002	0.006
e	0.65 (BSC)		0.026 (BSC)	
L	0.50	0.70	0.020	0.028
H	0.25(TYP)		0.01(TYP)	
θ	1°	7°	1°	7°

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
SNM8205A	TSSOP-8	8205A	5000PCS	13"

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

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