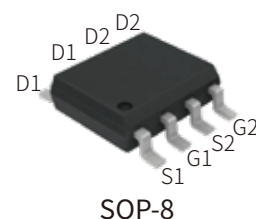


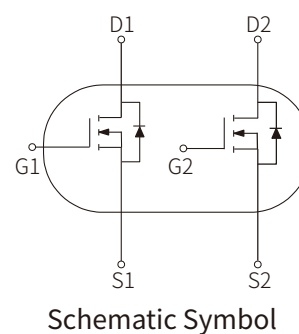
FEATURES

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



APPLICATION

- | LCD TV appliances
- | LCDM appliances
- | High power inverter system



APPROVALS

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

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage $T_A=25^\circ\text{C}$	V_{DS}	60	V
Drain Current (Pulsed) $T_A=25^\circ\text{C}$ $V_{GS}=10\text{V}$	I_{DM}^{***}	24.8	A
Drain Current (DC)	I_D^*	8	A
		3.9	A
Gate-Source Voltage $T_A=25^\circ\text{C}$	V_{GS}	± 20	V
Total Power Dissipation $T_A=25^\circ\text{C}$	P_{tot}	2	W
Diode Forward Current $T_A=25^\circ\text{C}$	I_S	8	A
Junction Temperature	T_J	-55 to 150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^\circ\text{C}$
Thermal Resistance – Junction to Ambient	$R_{\theta JA}^*$	56	$^\circ\text{C/W}$

Notes:

* Surface Mounted on 1 in² pad area, $t \leq 10$ sec

** Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$

*** Limited by bonding wire

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	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _{DS} =250μA	1.0		2.0	V
Drain Leakage Current	I _{DSS}	V _{DS} =48V, V _{GS} =0V			1	μA
		V _{DS} =48V, V _{GS} =0V, T _J =85°C			30	μA
Gate Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	nA
On-State Resistance	R _{DS(on)} ^a	V _{GS} =10V, I _{DS} =6A		27	32	mΩ
		V _{GS} =4.5V, I _{DS} =3A		34	38	mΩ
Diode Characteristics						
Diode Forward Voltage	V _{SD} ^a	I _{SD} =6A, V _{GS} =0V			1.3	V
Reverse Recovery Time	t _{rr}	I _{SD} =6A dI _{SD} /dt=100A/μs		12.2		nS
Reverse Recovery Charge	Q _{rr}			2.2		nC
Diode Characteristics ^b						
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, Frequency = 1 MHz		1051		pF
Output capacitance	C _{oss}			42		pF
Reverse transfer capacitance	C _{rss}			35		pF
Turn-on Delay Time	t _{d(on)}	V _{DS} =30V, V _{GEN} =10V R _G =4.5Ω, R _L =5Ω, I _{DS} =6A		7.4		nS
Turn-on Rise Time	t _r			26		nS
Turn-Off Delay Time	t _{d(off)}			17.6		nS
Turn-Off Fall Time	t _f			28		nS
Gate Charge Characteristics ^b						
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =30V, I _{DS} =6A		19.5		nC
Gate-Source Charge	Q _{gs}			5.4		nC
Gate-Drain Charge	Q _{gd}			2.6		nC

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

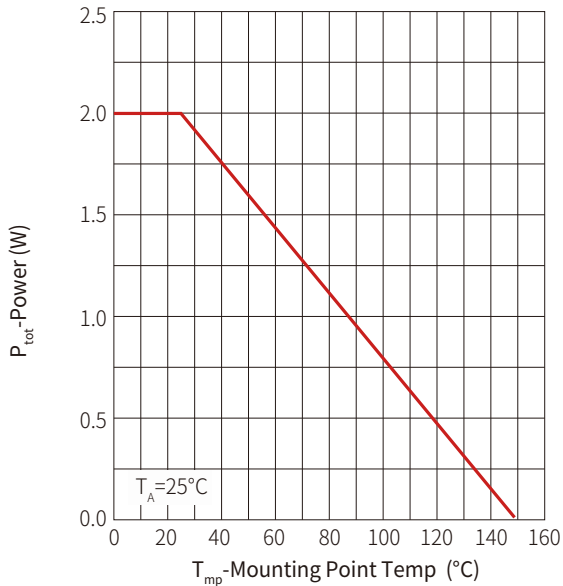


Figure2: Current Capability

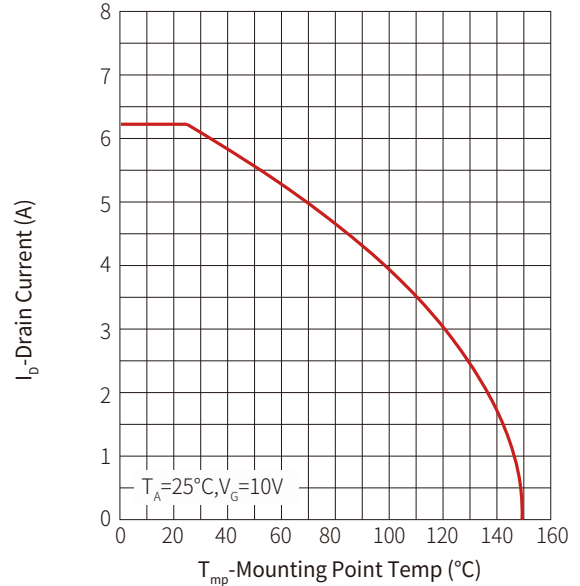


Figure3: Safe Operating Area

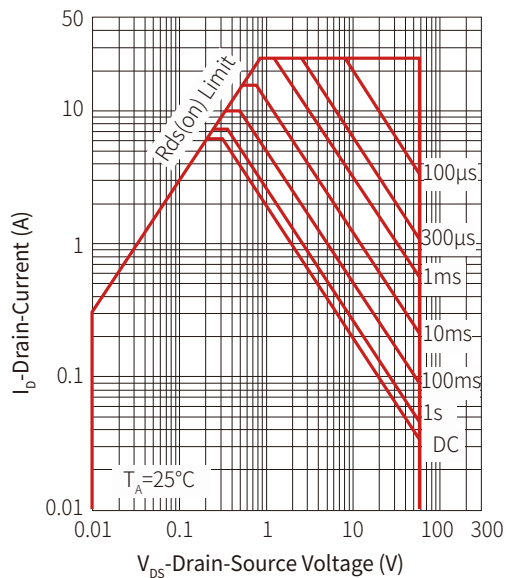
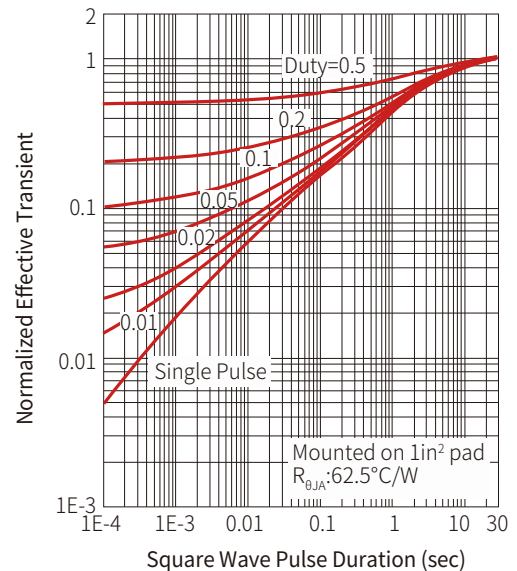


Figure 4: Transient Thermal Impedance



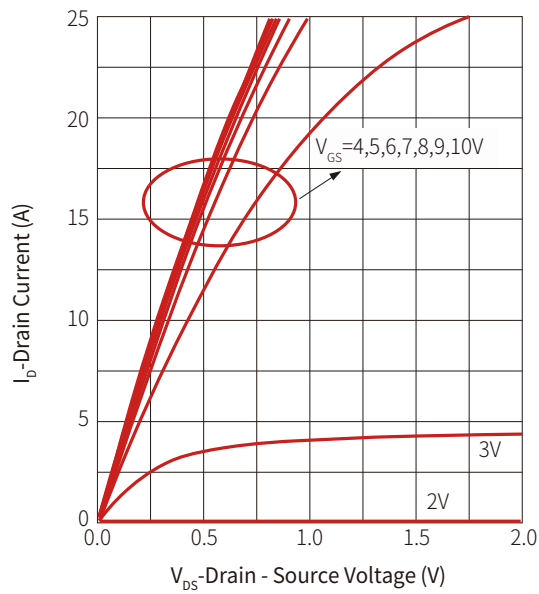
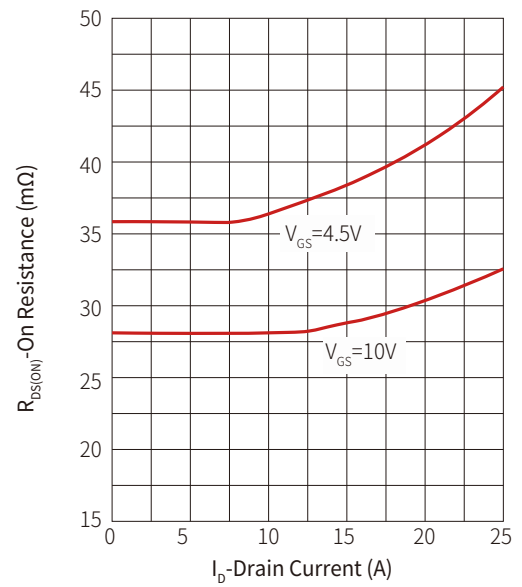
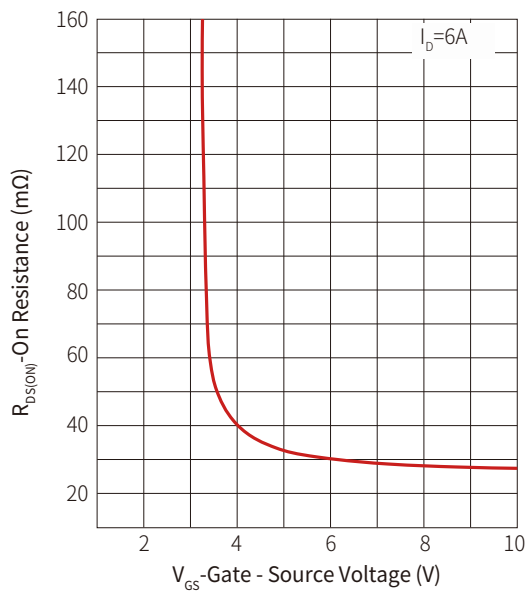
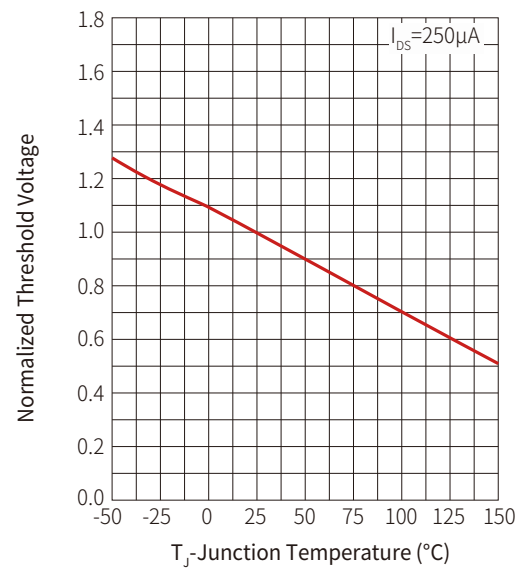
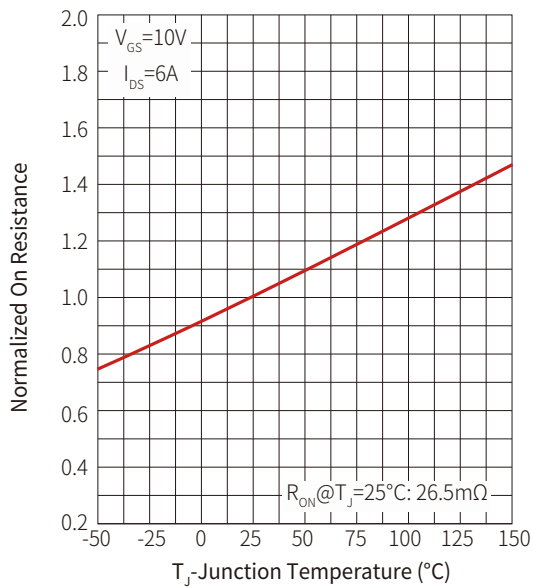
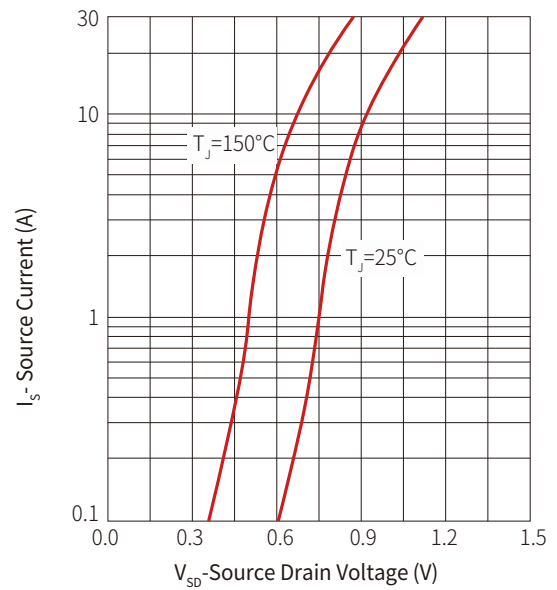
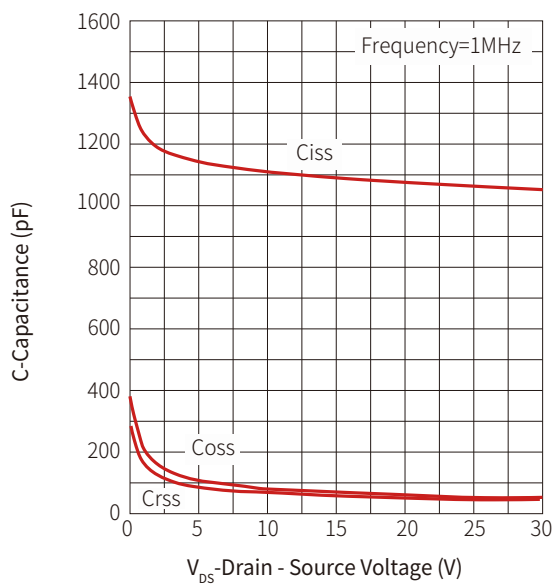
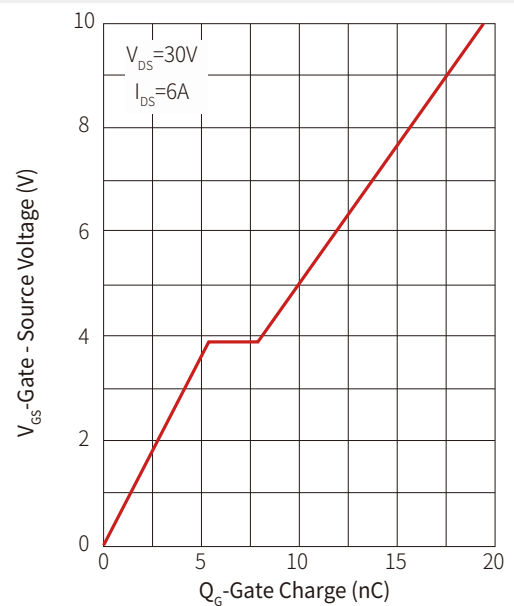
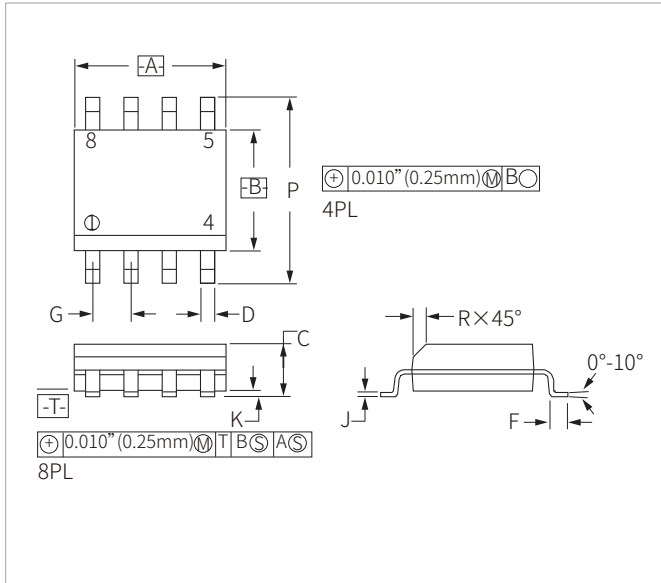
**Figure 5: Output Characteristics****Figure 6: On Resistance****Figure 7: Transfer Characteristics****Figure 8: Gate Threshold Voltage**

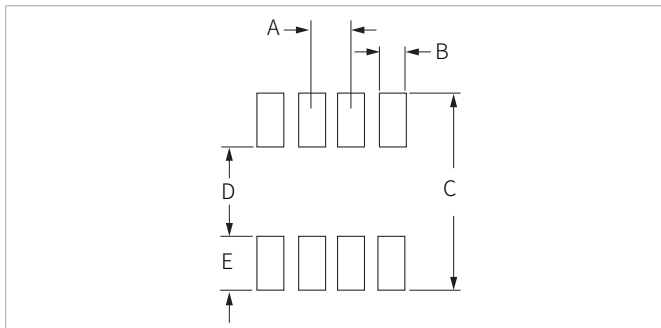
Figure 9: Normalized On Resistance

Figure 10: Diode Forward Current

Figure 11: Capacitance

Figure 12: Gate Charge


SOP-8 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.70	5.30	0.185	0.209
B	3.80	4.20	0.150	0.165
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27BSC		0.050BSC	
J	0.18	0.25	0.007	0.009
K	0.10	0.25	0.004	0.008
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min	Max	Min	Max
A	1.14	1.40	0.045	0.055
B	0.64	0.89	0.025	0.035
C	6.22	-	0.245	-
D	3.94	4.17	0.155	0.165
E	1.02	1.27	0.040	0.050

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
SNNM4946PE	SOP-8	4946 XXXX	3000PCS	7"

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By QR Code

Website



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