

SE4435
30V P-Channel MOSFET

Revision:A

General Description

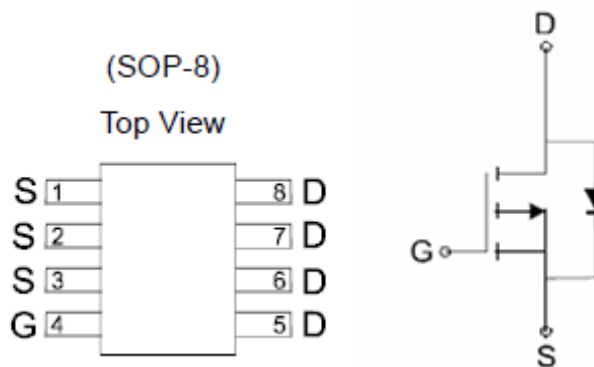
The MOSFETs from SINO-IC provide the best combination of fast switching, low on-resistance and cost-effectiveness.

Features

- $R_{DS(ON)} < 20m\Omega$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 35m\Omega$ ($V_{GS} = -4.5V$)
- Super high density cell design for extremely low $R_{DS(ON)}$

Pin configurations

See Diagram below



Absolute Maximum Ratings

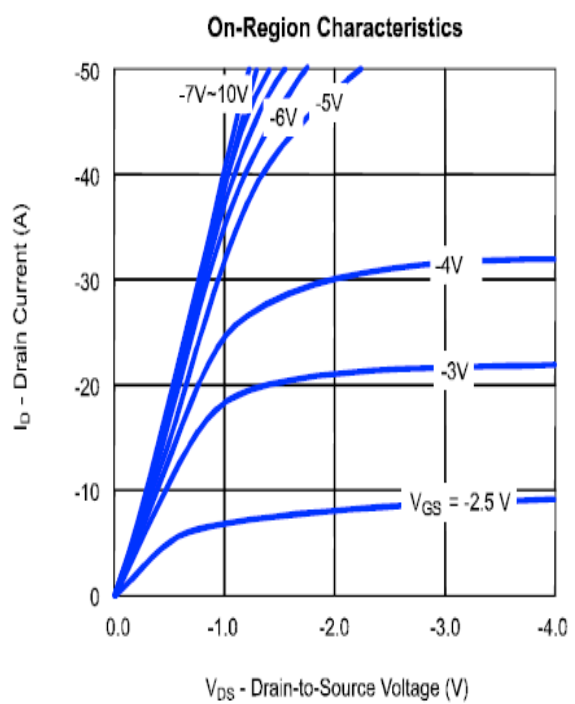
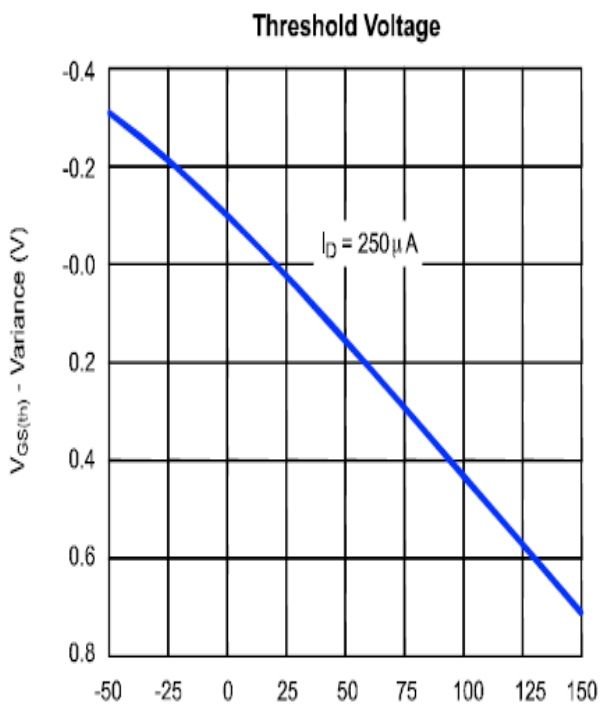
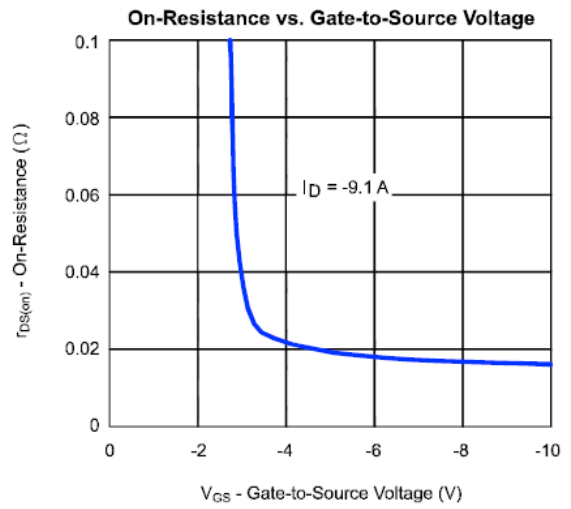
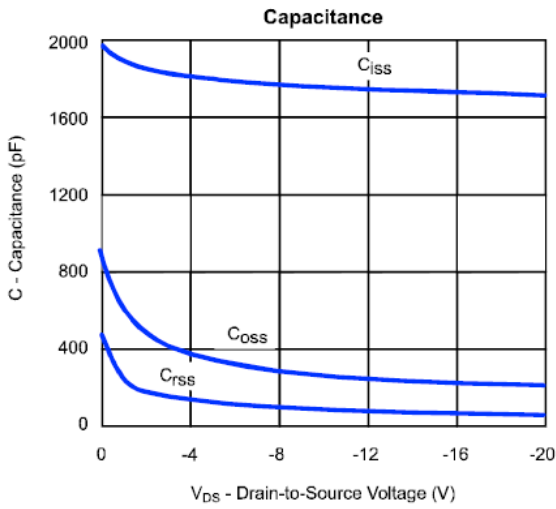
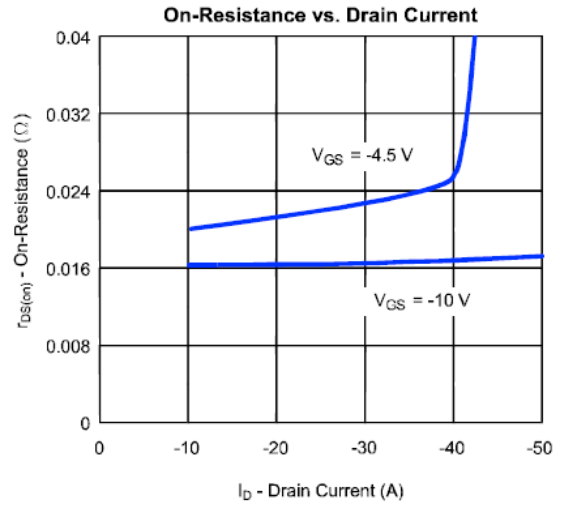
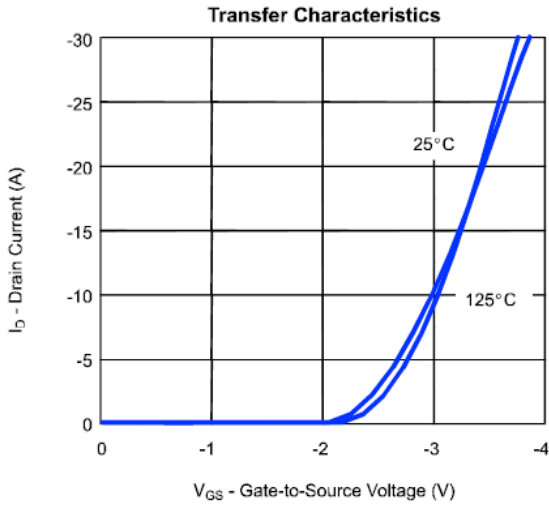
Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current (Note 1)	Continuous	I_D	-7	A
	Pulsed		-30	
Total Power Dissipation		P_D	1.5	W
Operating Junction Temperature Range		T_J	-50 to 150	$^{\circ}C$

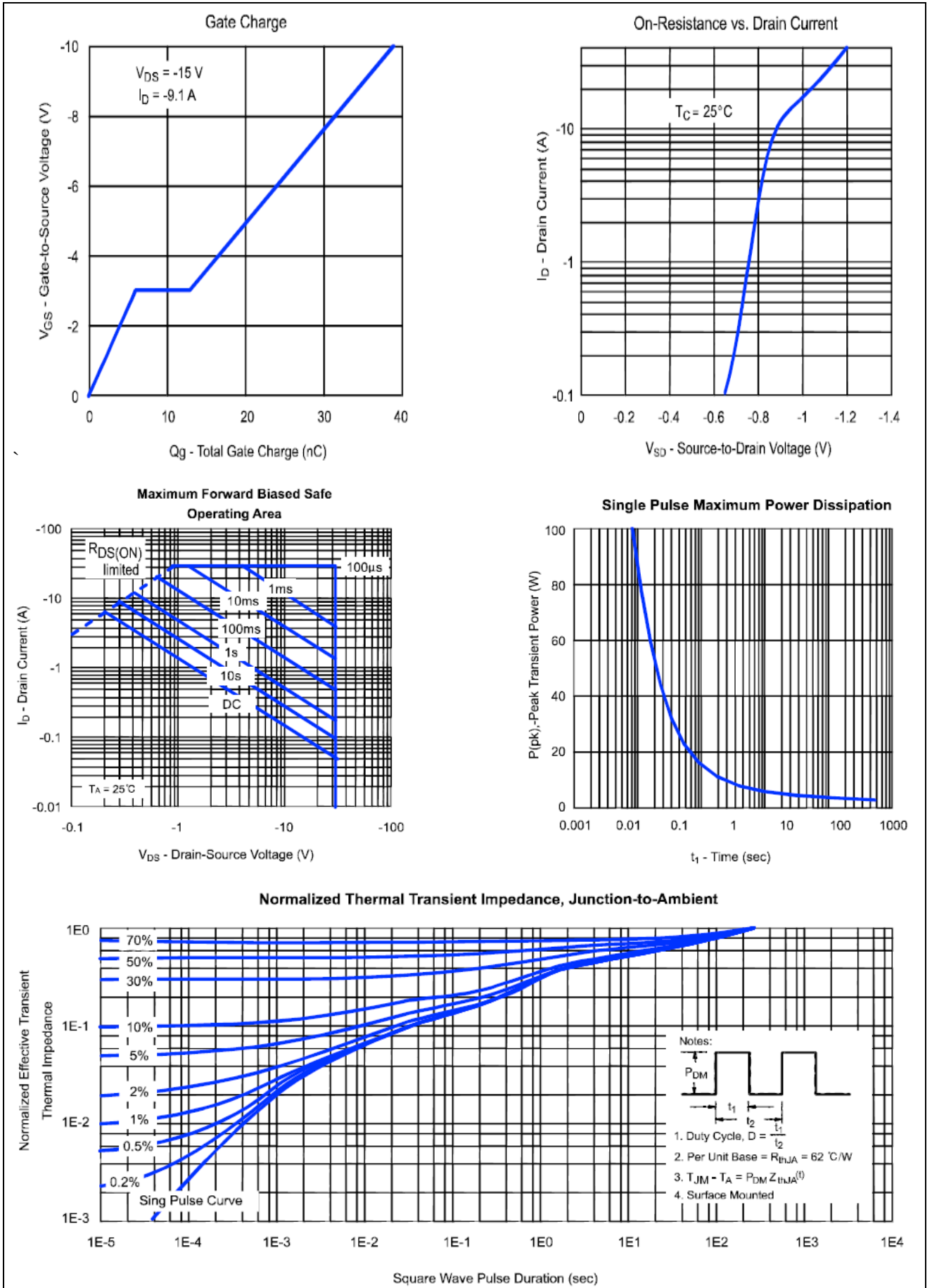
Thermal Characteristics

Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient θ_{JA}	$t \leq 10s$	$R_{\theta JA}$	62	-	$^{\circ}C/W$
Maximum Junction-to-- Case	Steady-State	$R_{\theta JC}$	38	-	$^{\circ}C/W$

Electrical Characteristics (T _J =25°C unless otherwise noted)							
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units	
OFF/ON CHARACTERISTICS (Note 2)							
BV _{DSS}	Drain-Source Breakdown Voltage	I _D =-250 μ A, V _{GS} =0 V	-30			V	
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-30 V, V _{GS} =0 V			-1	μ A	
I _{GSS}	Gate-Body leakage current	V _{DS} =0 V, V _{GS} =±20 V			100	nA	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} I _D =-250 μ A	-1	-1.4	-3	V	
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =-10V, I _D =-9.1A	-	15	20	mΩ	
		V _{GS} =-4.5V, I _D =-6.9 A		25	35	mΩ	
V _{SD}	Diode Forward Voltage	I _S =-2.1A, V _{GS} =0V	-	-0.8	-1.2	V	
DYNAMIC PARAMETERS							
C _{iss}	Input Capacitance	V _{GS} =-10V, V _{DS} =-15V, f=1MHz		1730	1900	pF	
C _{oss}	Output Capacitance			240		pF	
C _{rss}	Reverse Transfer Capacitance			70		pF	
t _{ON}	Turn-On Time	V _{DS} =-15V, I _D =-1A, V _{GS} = -10 V, R _{GEN} =6 Ω	-	41	50	ns	
t _{OFF}	Turn-Off Time			-	19	23	ns
t _r	Turn-on Rise Time			-	105	120	ns
t _f	Turn-on Fall Time			-	17	20	ns
Q _{g(10)}	Total Gate Charge	V _{DS} =-15V, I _D =-9.1A, V _{GS} =-10V		38	45	nC	
Q _{gs}	Gate-Source Charge			7.7		nC	
Q _{gd}	Gate-Drain Charge			9		nC	
t _{rr}	Body Diode Reverse Recovery Time	I _F =-9.1A, dI/dt=100A/ μ s		105	120	ns	
Q _{rr}	Body Diode Reverse Recovery Charge	I _F =-9.1A, dI/dt=100A/ μ s		17	20	uC	

Typical Characteristics





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SHANGHAI SINO-IC MICROELECTRONICS CO., LTD

Add: Building 3, Room 3401-03, No.200 Zhangheng Road, ZhangJiang Hi-Tech Park, Pudong,
Shanghai 201203, China

Phone: +86-21-33932402 33932403 33932405 33933508 33933608

Fax: +86-21-33932401

Email: szrxw002@126.com

Website: <http://www.sino-ic.net>