SE4435
30V P-Channel MOSFET

Revision:A

General Description

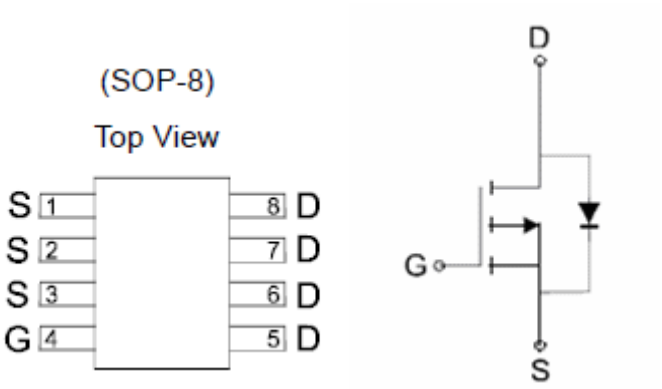
The MOSFETs from SINO-IC provide the best combination of fast switching, low on-resistance and cost-effectiveness.

Features

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

Pin configurations

See Diagram below



Absolute Maximum Ratings

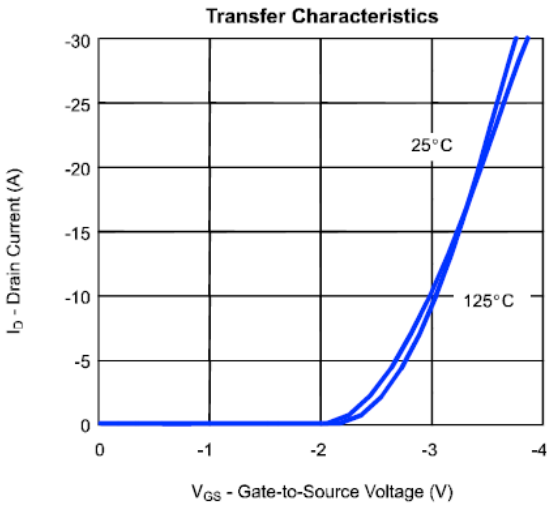
Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current (Note 1)	Continuous	I_D	-7	A
	Pulsed		-30	
Total Power Dissipation		P_D	1.5	W
Operating Junction Temperature Range		T_J	-50 to 150	°C

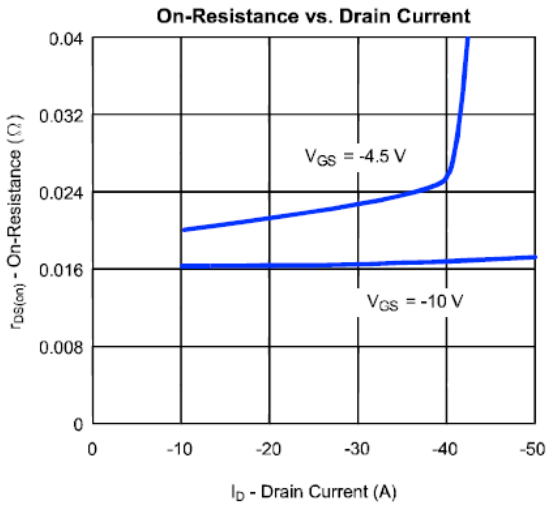
Thermal Characteristics

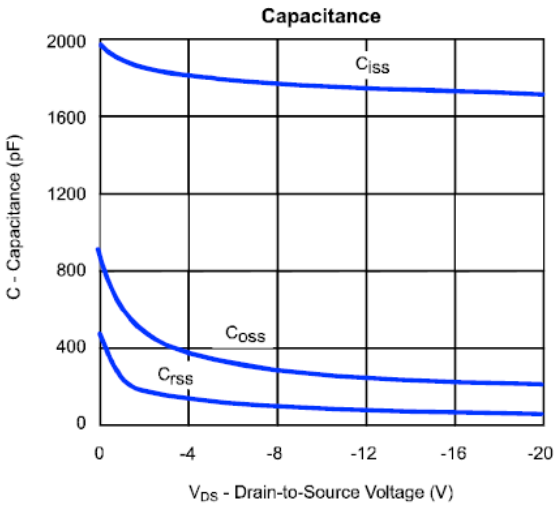
Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient A	t ≤ 10s	$R_{\theta JA}$	62	-	°C/W
Maximum Junction-to-- Case	Steady-State	$R_{\theta JC}$	38	-	°C/W

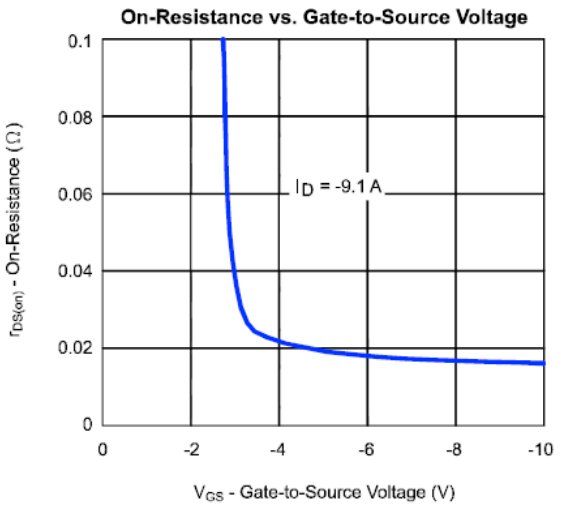
Electrical Characteristics (T_J=25°C unless otherwise noted)						
Symbol	**Parameter**	**Test Conditions**	**Min**	**Typ**	**Max**	**Units**
OFF/ON CHARACTERISTICS (Note 2)						
BV_{DSS}	Drain-Source Breakdown Voltage	I_D=-250μA, V_{GS}=0 V	-30			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-30 V, V_{GS}=0 V			-1	μA
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=-250μA	-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
TON	Turn-On Time	V_{DS} =-15V, I_D=-1A,V_{GS} = -10 V,R_{GEN} =6Ω	-	41	50	ns
TOFF	Turn-Off Time		-	19	23	ns
Tr	Turn-on Rise Time		-	105	120	ns
Tf	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/μs		105	120	ns
Q_{rr}	Body Diode Reverse Recovery Charge	I_F=-9.1A, dI/dt=100A/μs		17	20	uC

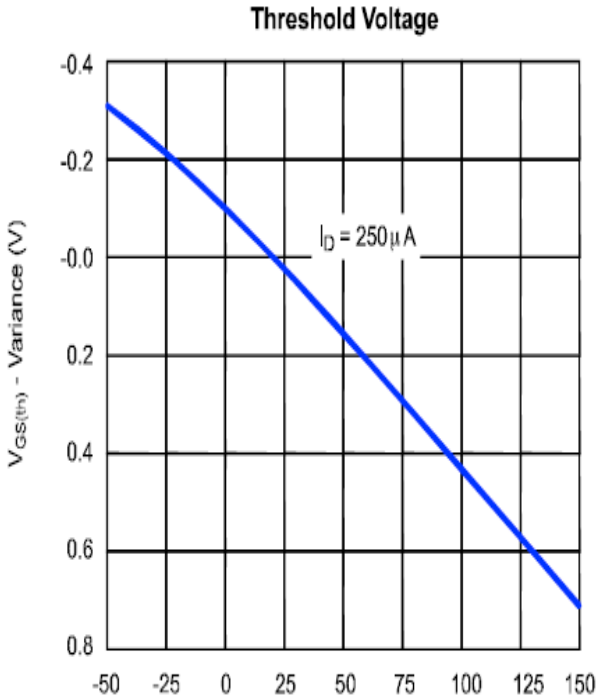
Typical Characteristics

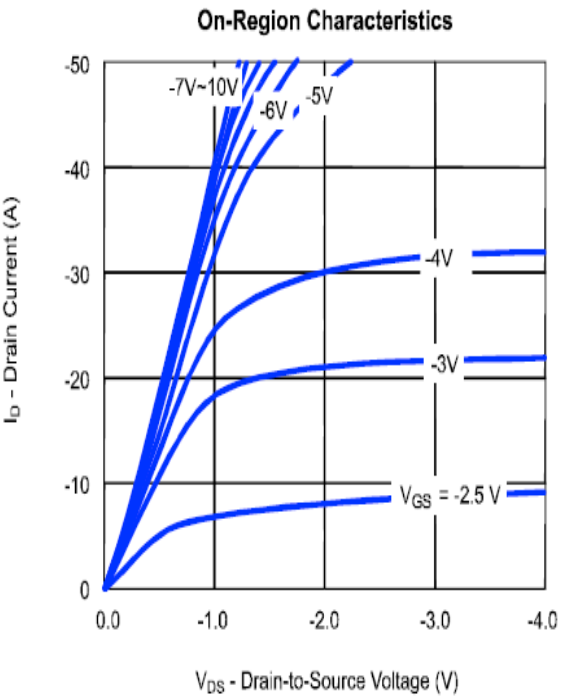




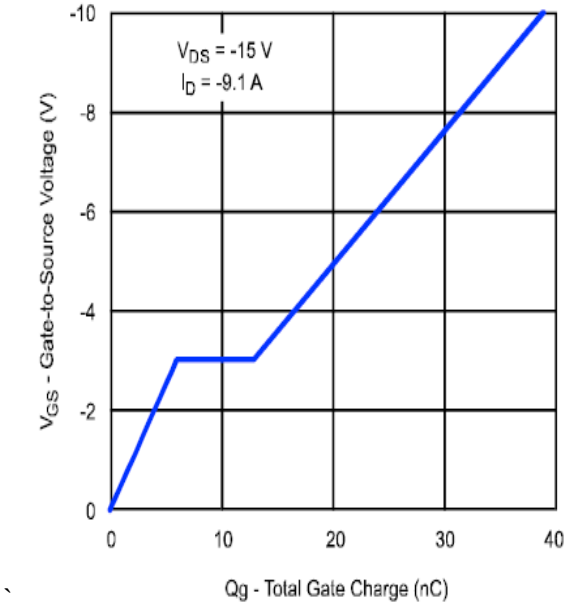




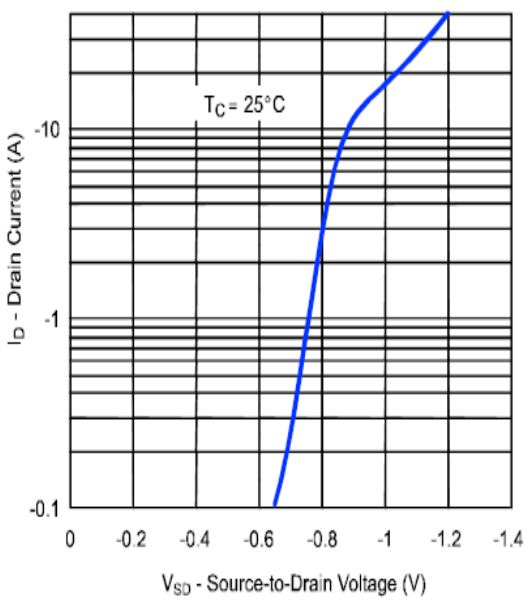




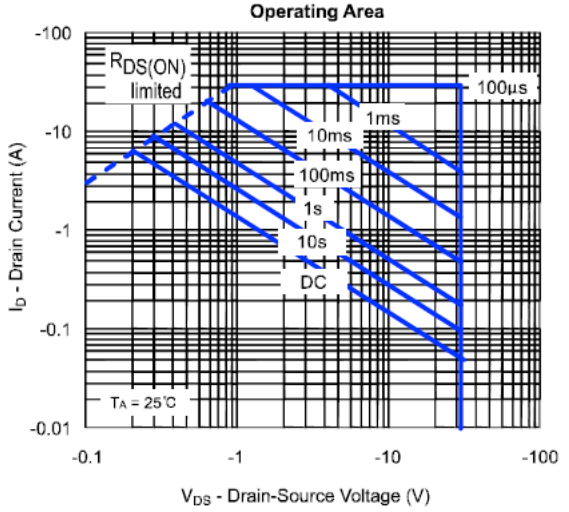
Gate Charge



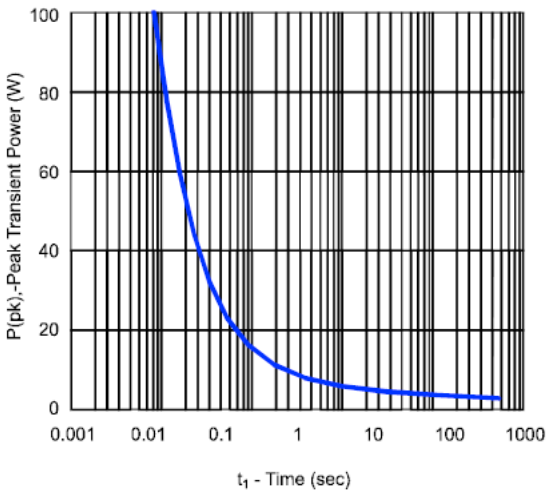
On-Resistance vs. Drain Current



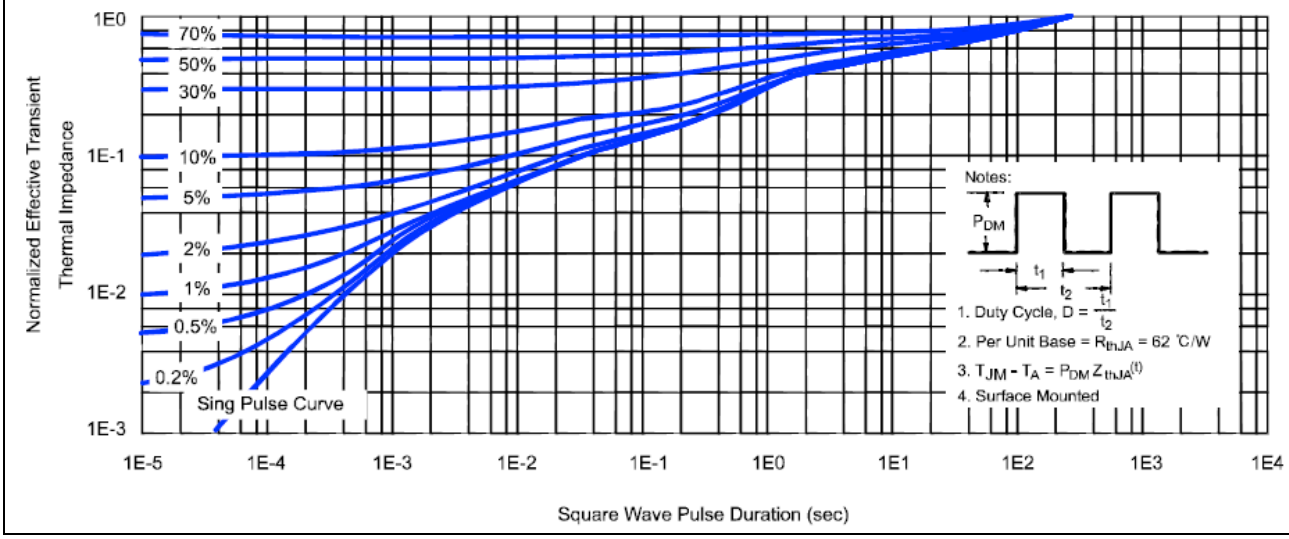
Maximum Forward Biased Safe Operating Area



Single Pulse Maximum Power Dissipation



Normalized Thermal Transient Impedance, Junction-to-Ambient



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