SHENZHEN SINO-IC

Semiconductor Co., Ltd.

SE8205

Dual N-Channel Enhancement Mode Field Effect Transistor

Revision:A

Features

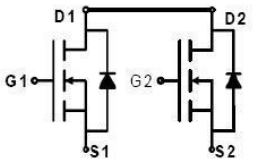
For a single MOSFET
V_{DSS} = 20 V
$R_{DS(ON)}$=21mΩ@V_{GS}=4.5

Applications

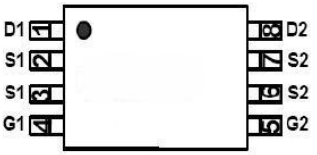
- Battery protection
- Load switch
- Power management

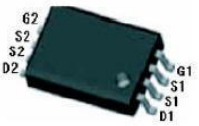
Construction

- Silicon epitaxial planer

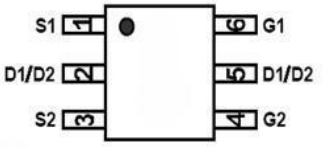


Schematic diagram





TSSOP-8 top view




SOT23-6 top view

Absolute Maximum Ratings

Paramet		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±10	V
Drain Current (Note 1)	Continuous	I_D	6	A
	Pulsed	I_{DM}	25	
Maximum Power Dissipation		P_D	1.5	W
Operating Junction Temperature Range		T_J	-55 to 150	°C
Storage Temperature Range		T_{STG}		

Electrical Characteristics (T$_J$=25°C unless otherwise noted)						
Symbol	**Parameter**	**Test Conditions**	**Min**	**Typ**	**Max**	**Unit**
OFF CHARACTERISTICS						
B_{VDSS}	Drain-Source Breakdown Voltage	I_D=250μA, V_{GS}=0 V	20			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=20V, V_{GS}=0 V			1	μA
I_{GSS}	Gate-Body leakage	V_{DS}=0V, V_{GS}=±12 V			±80	nA
ON CHARACTERISTICS						
V_{GS}(th)	Gate Threshold Voltage	V_{DS}=VGS I_D=250μA	0.45	0.6	1.2	V
R_{DS}(ON)	Static Drain-Source On-Resistance	V_{GS}=4.0V, I_D=6.8A	-	21	24.5	mΩ
g_{FS}	Forward Transconductance	V_{DS}=5V, I_D=5A	3			S
DYNAMIC						
Ciss	Input Capacitance	V_{GS}=0V,V_{DS}=8V, f=1.0MHz		600		pF
Coss	Output Capacitance			330		pF
Crss	Reverse Transfer Capacitance			140		pF
SWITCHING						
Qg	Total Gate Charge	V_{GS}=4.5V V_{DS}=10V I_D=6A		10	15	nC
Qgs	Gate Source Charge			2.3		
Qgd	Gate Drain Charge			3		
td(on)	Turn-On DelayTime	V_{GEN}=4.0V R_{GEN}=10Ω V_{DD}=10V I_D=1A		10	20	ns
$t_{d(off)}$	Turn-Off DelayTime			35	70	
$t_{d(r)}$	Turn-On Rise Time			11	25	
$t_{d(f)}$	Turn-Off Fall Time			30	60	

Typical Characteristics

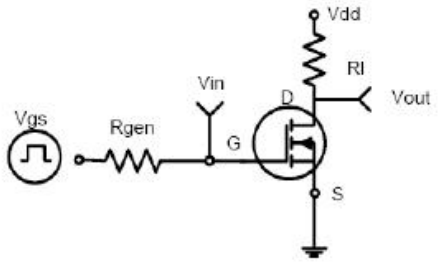


Figure 1:Switching Test Circuit

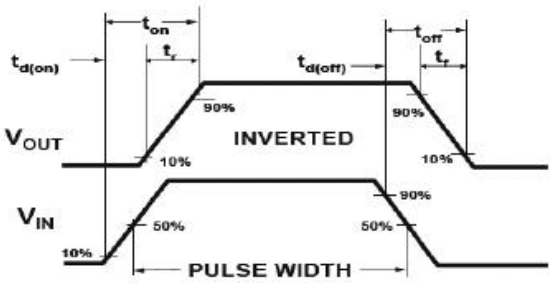


Figure 2:Switching Waveforms

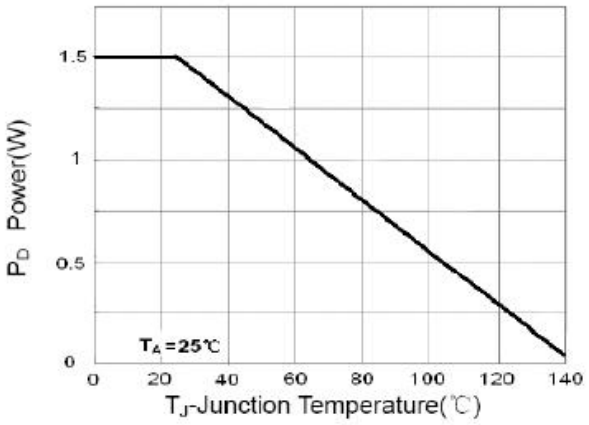


Figure 3 Power Dissipation

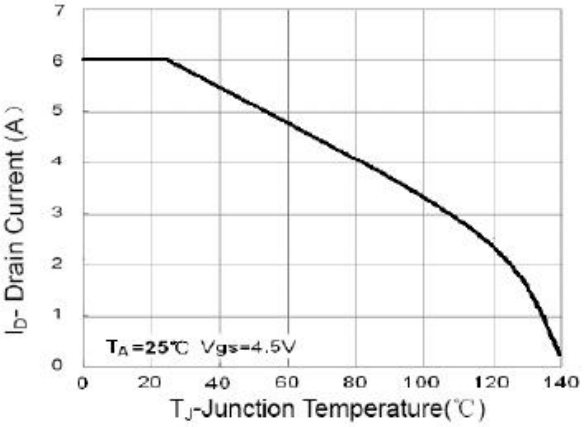


Figure 4 Drain Current

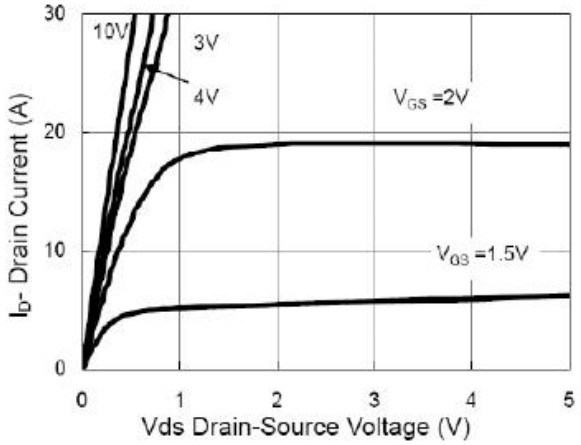


Figure 5 Output CHARACTERISTICS

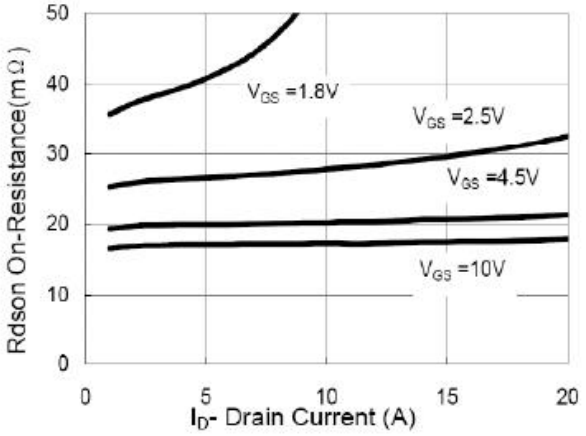


Figure 6 Drain-Source On-Resistance

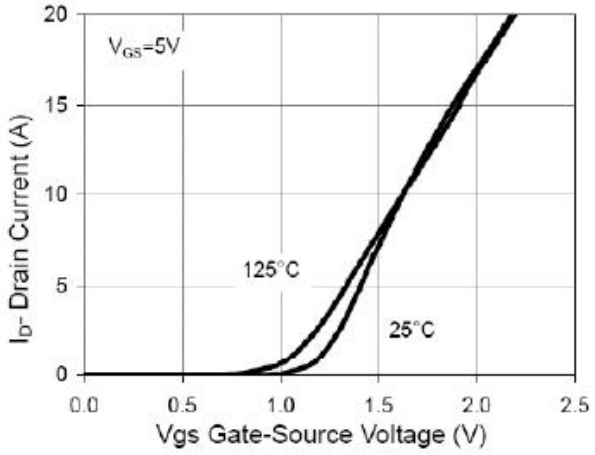


Figure 7 Transfer Characteristics

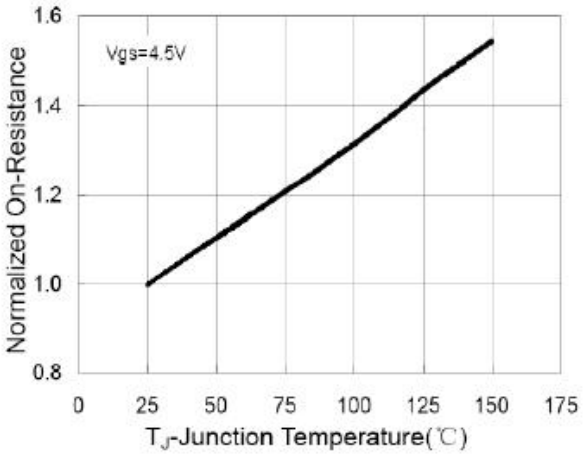


Figure 8 Drain-Source On-Resistance

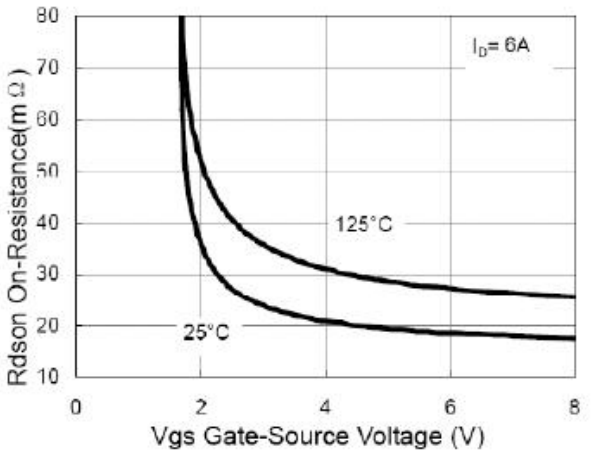


Figure 9 Rdson vs Vgs

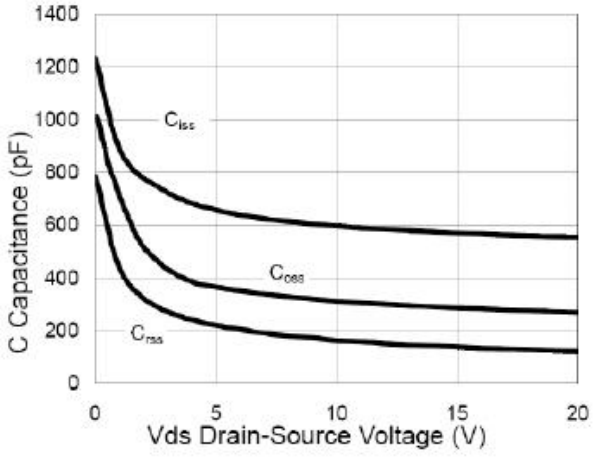


Figure 10 Capacitance vs Vds

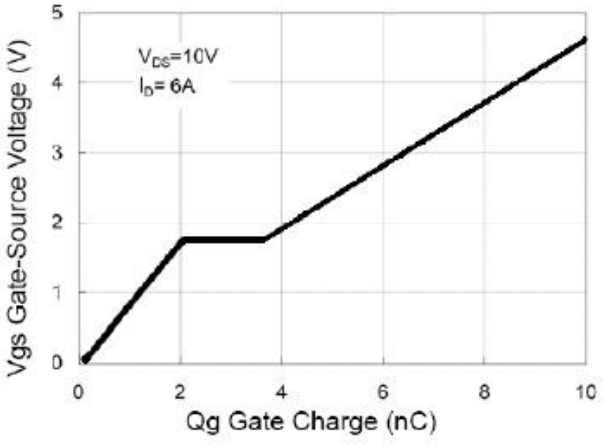


Figure 11 Gate Charge

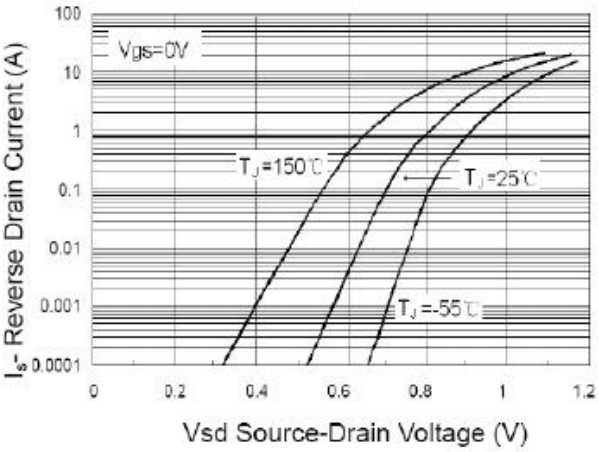
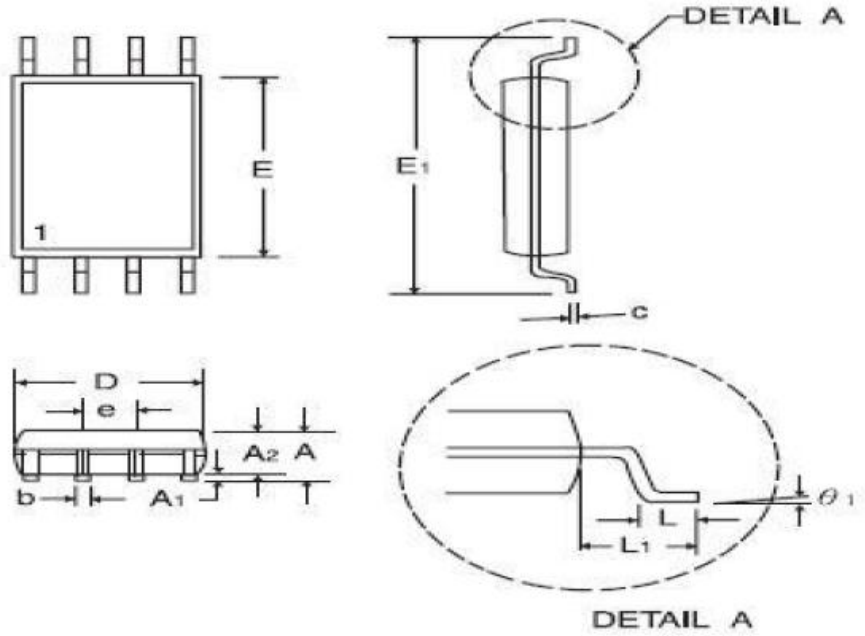
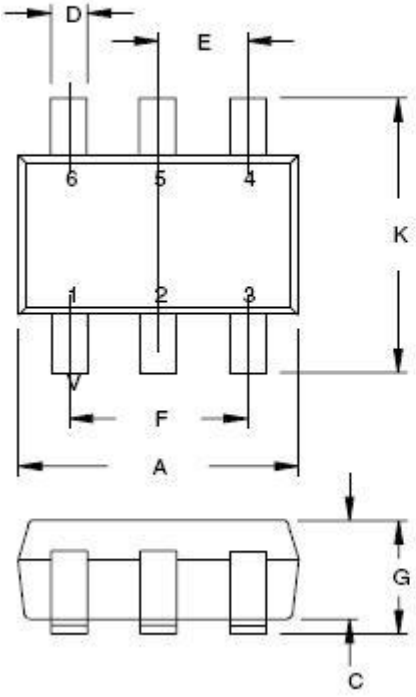
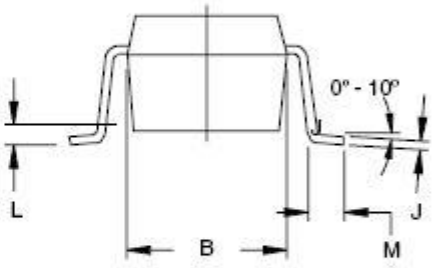


Figure 12 Source- Drain Diode Forward



SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.05	1.20	0.041	0.047
A1	0.05	0.15	0.002	0.006
A2	-	1.05	-	0.041
b	0.20	0.28	0.008	0.011
c	0.127		0.005	
D-8	2.90	3.10	0.114	0.122
E	4.30	4.50	0.169	0.177
E1	6.20	6.60	0.244	0.260
e	0.65BSC		0.025BSC	
L	0.50	0.70	0.020	0.028
L1	1.00		0.039	
θ_1	0°	8°	0°	8°





PACKAGE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.90	3.00	0.114	0.118
B	1.50	1.75	0.059	0.070
C	0.90	1.30	0.036	0.051
D	0.35	0.50	0.014	0.020
E	0.85	1.05	0.033	0.040
F	1.70	2.10	0.067	0.083
G	0.90	1.45	0.036	0.057
J	0.090	0.20	0.0035	0.008
L	0.20TYP	0.20TYP	0.007TYP	0.007TYP
K	2.72	2.88	0.107	0.113
M	0.35	0.55	0.014	0.022

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