SE8810
Dual N-Channel Enhancement Mode Field Effect Transistor

Revision:A

Features

For a single mosfet

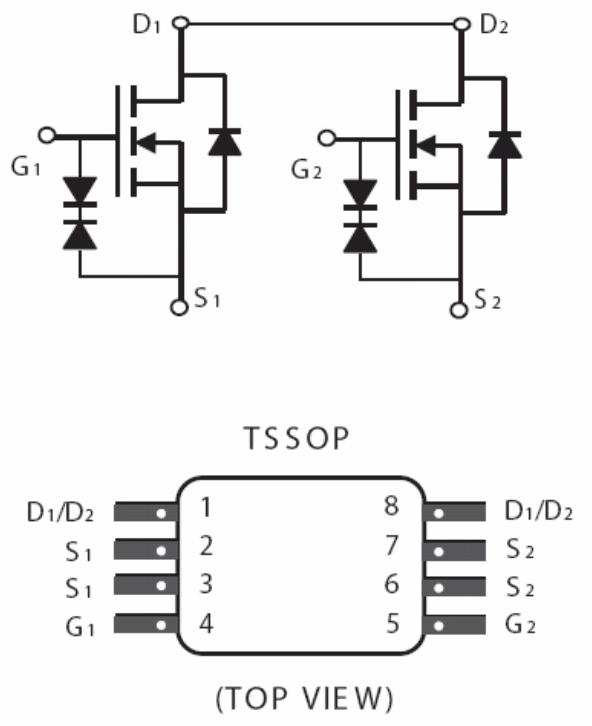
- V_{DSS} = 20 V
- $R_{DS(ON)}$ < 20mΩ @ V_{GS}=4.5V @Ids=7A
  $R_{DS(ON)}$ < 25mΩ @ V_{GS}=2.5V @Ids=4A

Applications

- Battery protection
- Load switch
- Power management

Construction

- Silicon epitaxial planer



Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Drain Current (Note 1)	Continuous	I_D	7	A
	Pulsed	I_{DM}	28	
Drain-Source Diode Forward Current		I_S	1.7	A
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**	**Units**
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}=16 V, V_{GS}=0 V			1	μA
I_{GSS}	Gate-Body leakage	V_{DS}=0 V, V_{GS}=±12 V			±10	μA
ON CHARACTERISTICS						
V_{GS}(th)	Gate Threshold Voltage	V_{DS}=VGS I_D=250μA	0.5	0.8	1.2	V
R_{DS}(ON)	Static Drain-Source On-Resistance	V_{GS}=4.5V, I_D=7A	-	17	20	mΩ
		V_{GS}=2.5V, I_D=5A	-	20	25	
g_{FS}	Forward Transconductance	V_{DS}=5V, I_D=5A		19		S
DYNAMIC PARAMETERS						
Ciss	Input Capacitance	V_{GS}=0V, V_{DS}=8V, f=1.0MHz		693		pF
Coss	Output Capacitance			189		pF
Crss	Reverse Transfer Capacitance			136		pF
SWITCHING PARAMETERS						
Qg	Total Gate Charge	V_{GS}=4.0V		11		nC
Qgs	Gate Source Charge	V_{DS}=10V		1.8		
Qgd	Gate Drain Charge	I_D=5A		4.9		
td(on)	Turn-On DelayTime	V_{GEN}=4.0V		31		ns
$t_{d(off)}$	Turn-Off DelayTime	R_{GEN}=10Ω		96		
$t_{d(r)}$	Turn-On Rise Time	V_{DD}=10V		62		
$t_{d(f)}$	Turn-Off Fall Time	I_D=1A		40		

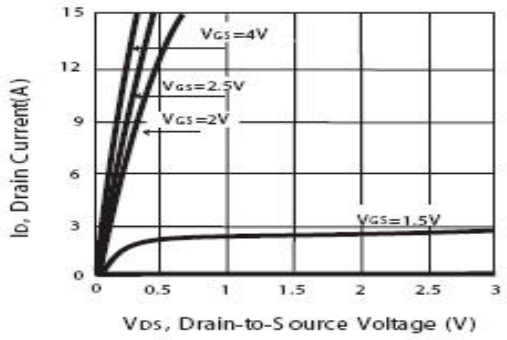


Figure 1. Output Characteristics

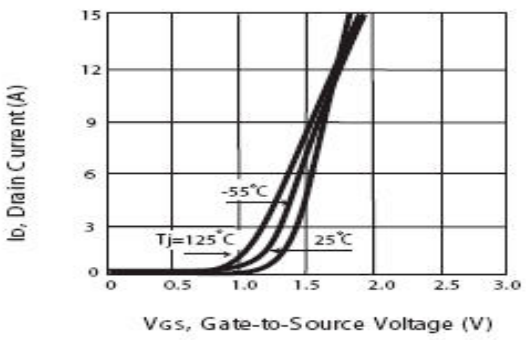


Figure 2. Transfer Characteristics

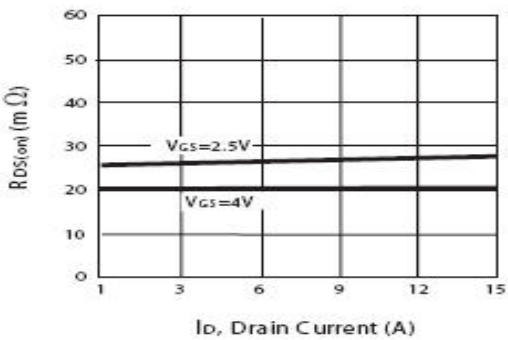


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

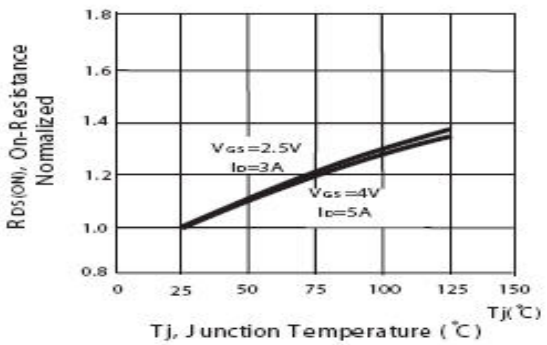


Figure 4. On-Resistance Variation with Drain Current and Temperature

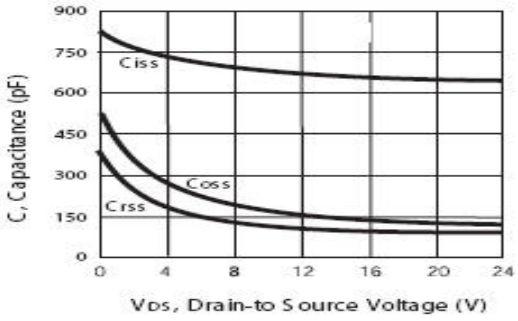


Figure 9. Capacitance

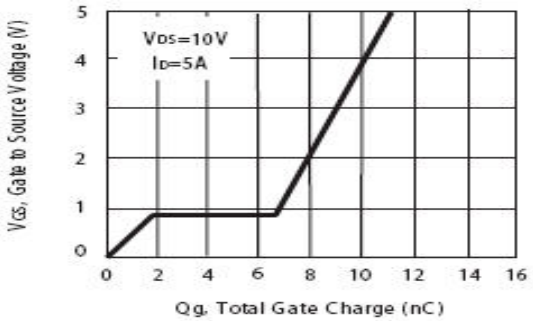


Figure 10. Gate Charge

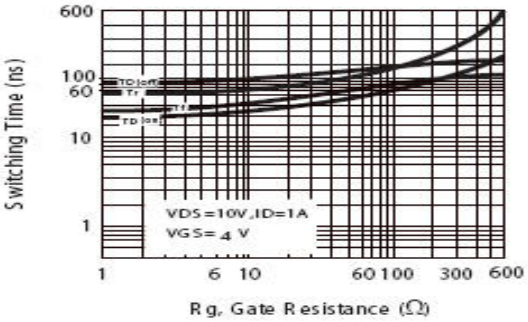


Figure 11.switching characteristics

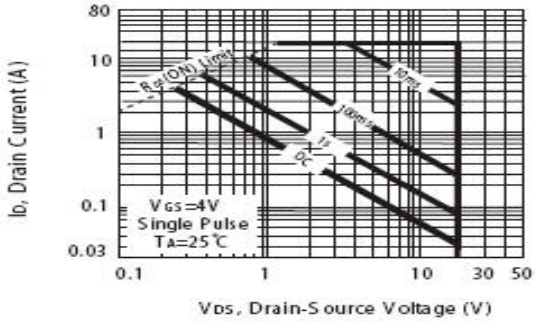


Figure 12. Maximum Safe Operating Area

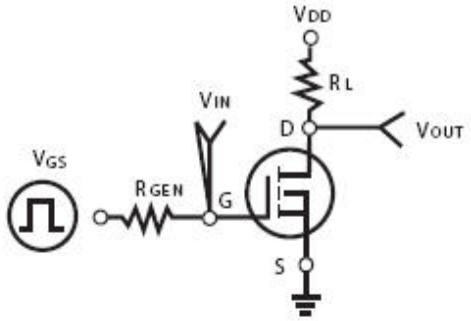


Figure 11. Switching Test Circuit

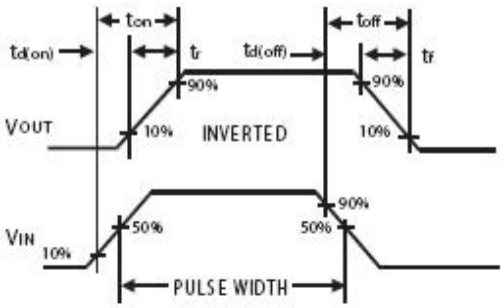
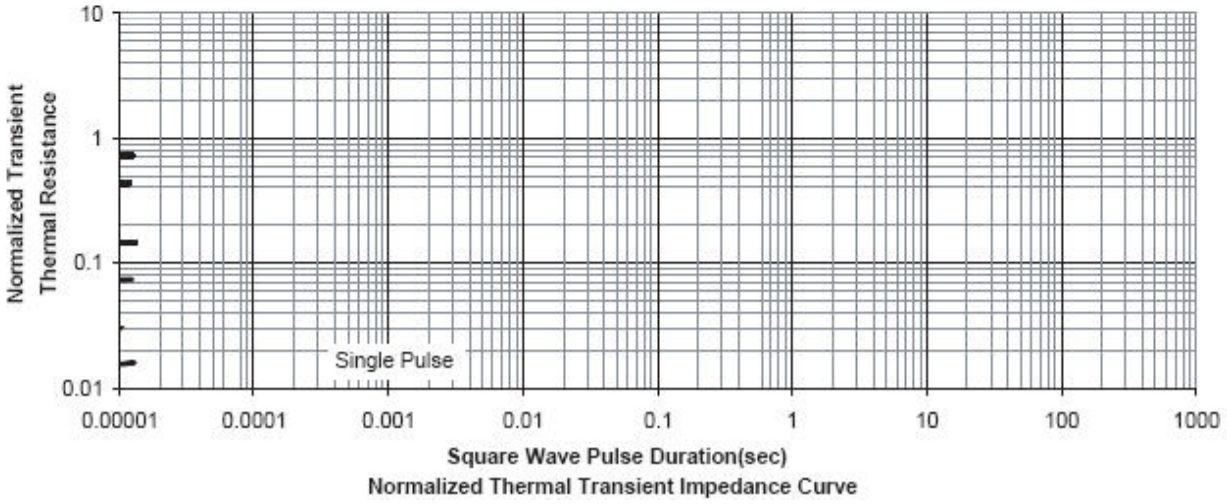
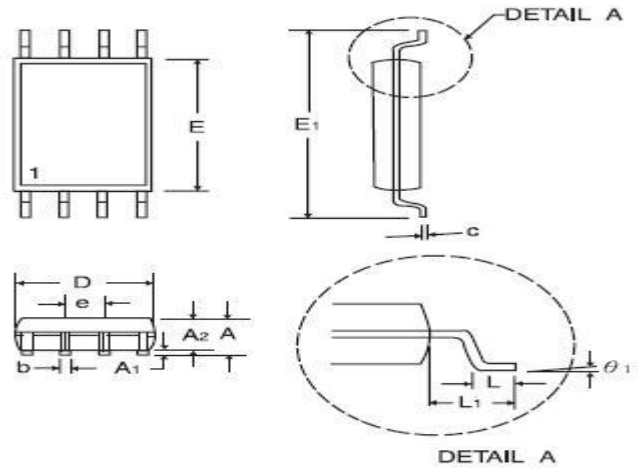


Figure 12. Switching Waveforms



Normalized Thermal Transient Impedance Curve

Typical Characteristics



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°

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