

SE8830
Dual N-Channel Enhancement Mode Field Effect Transistor

Revision:A

Features

For a single mosfet

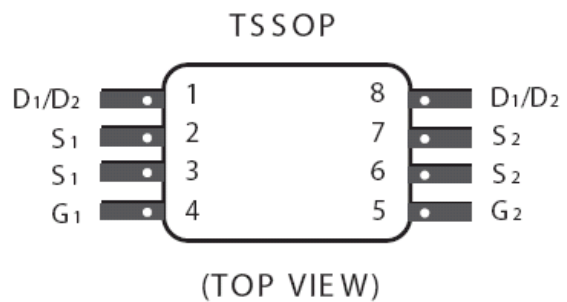
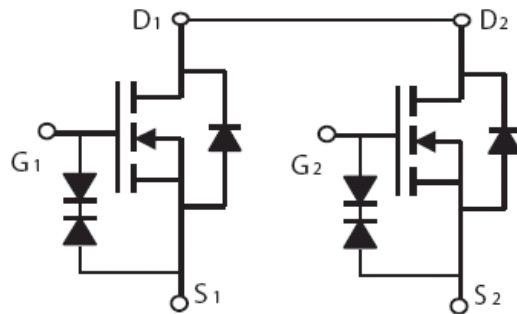
- $V_{DSS} = 20\text{ V}$
- $R_{DS(ON)} = 13\text{m}\Omega @ V_{GS}=4.0\text{V} @ I_{DS}=5\text{A}$
 $R_{DS(ON)} = 16\text{m}\Omega @ V_{GS}=2.5\text{V} @ I_{DS}=3\text{A}$

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}	24	
Drain-Source Diode Forward Current		I_S	1.5	A
Maximum Power Dissipation		P_D	1.5	W
Operating Junction Temperature Range		T_J	-55 to 150	$^{\circ}\text{C}$
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} =V _{GS} I _D =250μA	0.5	0.7	1.0	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =4.0V, I _D =5A	-	13	17	mΩ
		V _{GS} =2.5V, I _D =3A	-	16	22	
g _{FS}	Forward Transconductance	V _{DS} =5V, I _D =5A		19		S
DYNAMIC PARAMETERS						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =8V, f=1.0MHz		890		pF
C _{oss}	Output Capacitance			250		pF
C _{rss}	Reverse Transfer Capacitance			180		pF
SWITCHING PARAMETERS						
Q _g	Total Gate Charge	V _{GS} =4.0V		23		nC
Q _{gs}	Gate Source Charge	V _{DS} =10V		3		
Q _{gd}	Gate Drain Charge	I _D =5A		6.2		
t _{d(on)}	Turn-On DelayTime	V _{GEN} =4.0V		38		ns
t _{d(off)}	Turn-Off DelayTime	R _{GEN} =10Ω		106		
t _{d(r)}	Turn-On Rise Time	V _{DD} =10V		78		
t _{d(f)}	Turn-Off Fall Time	I _D =1A		56		

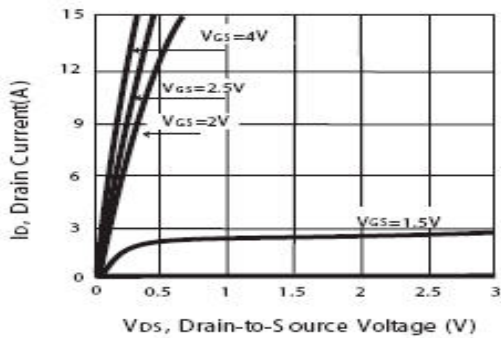


Figure 1. Output Characteristics

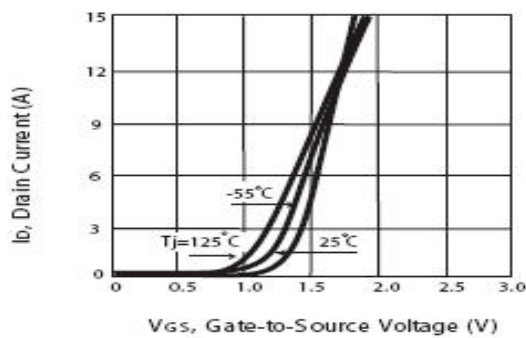


Figure 2. Transfer Characteristics

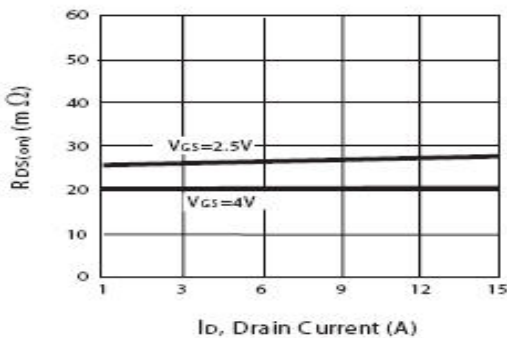


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

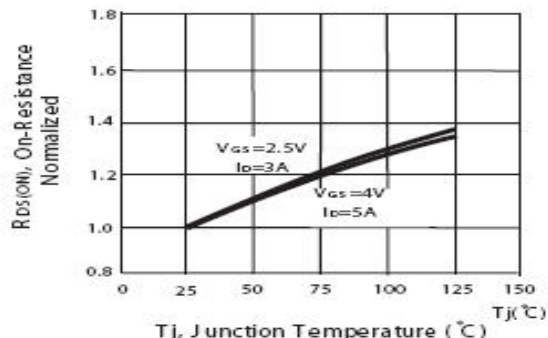
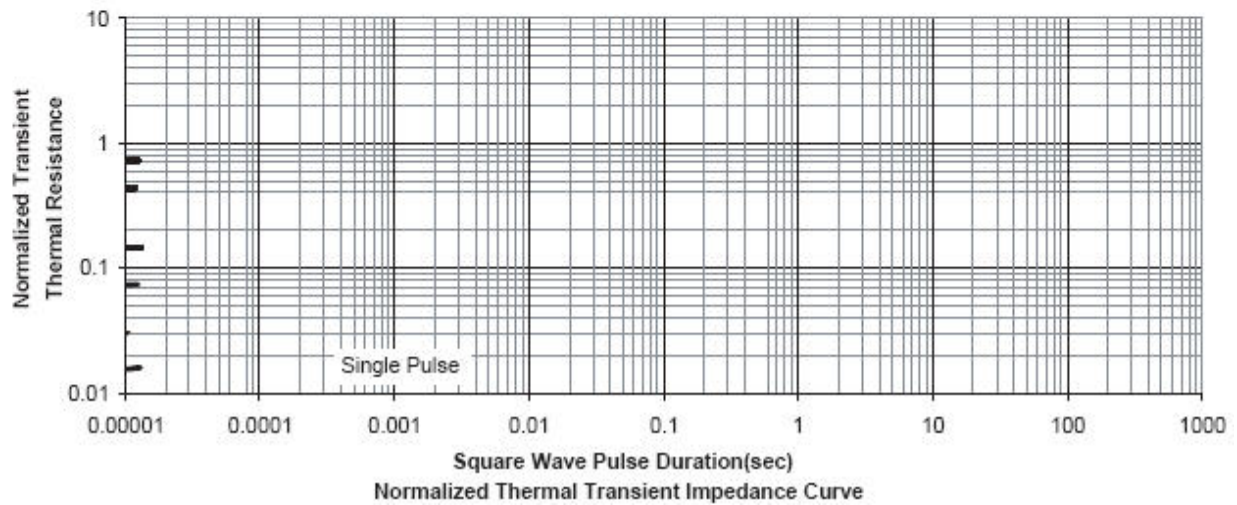
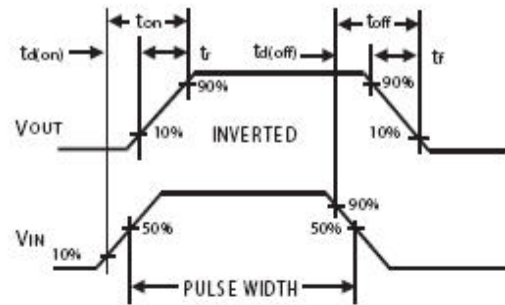
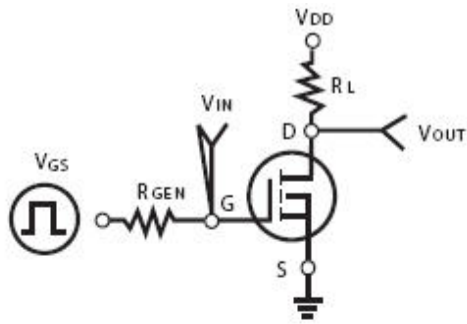
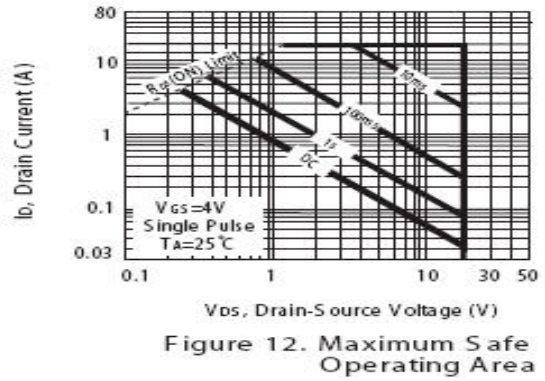
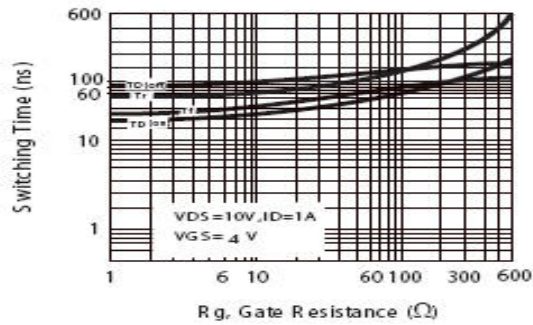
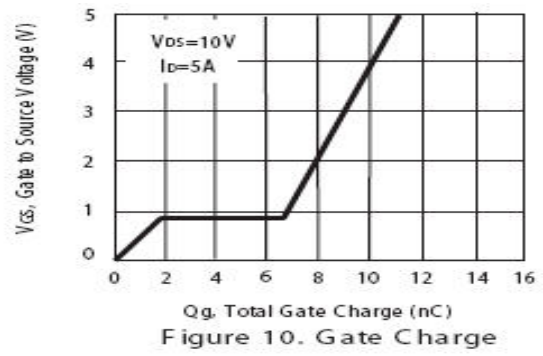
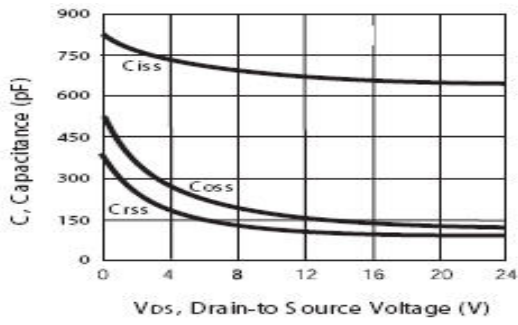
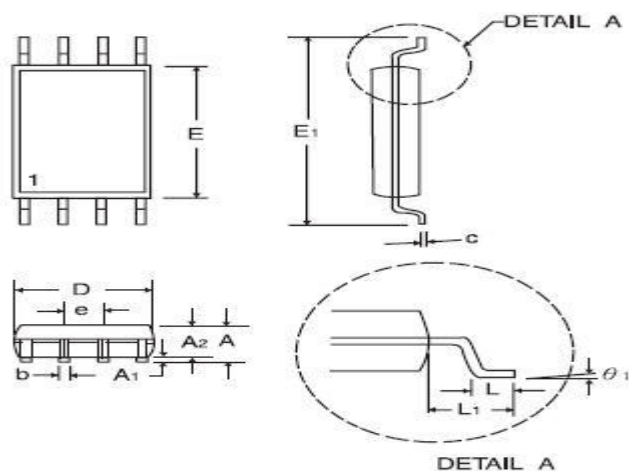


Figure 4. On-Resistance Variation with Drain Current and Temperature



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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