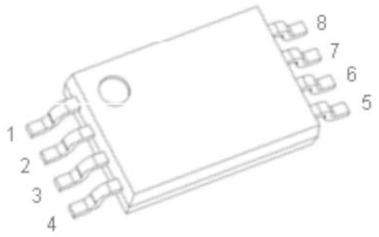
GP8810S

20V Dual N-Channel MOSFET

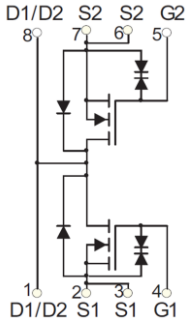
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	12.3mΩ@4.5V	7A
	13mΩ@3.8V	
	14mΩ@3.1V	
	15.7mΩ@2.5V	

TSSOP8



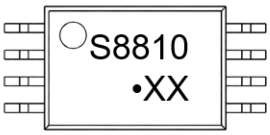
Schematic diagram



DESCRIPTION

The GP8810S uses advanced trench technology to provideexcellent $R_{DS(ON)}$ and low gate charge. It is ESD protected. This device issuitable for use as a uni-directional or bi-directional load switch,facilitated by its common-drain configuration.

MARKING:



S8810 = Device code.
Solid dot = Green molding compound device
XX=Date Code.

ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	7	A
Pulsed Drain Current	I_{DM}*	30	A
Power Dissipation	P_D	2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	℃

* Repetitive rating : Pulse width limited by junction temperature.

MOSFET ELECTRICAL CHARACTERISTICS(T_A=25℃ unless otherwise noted)

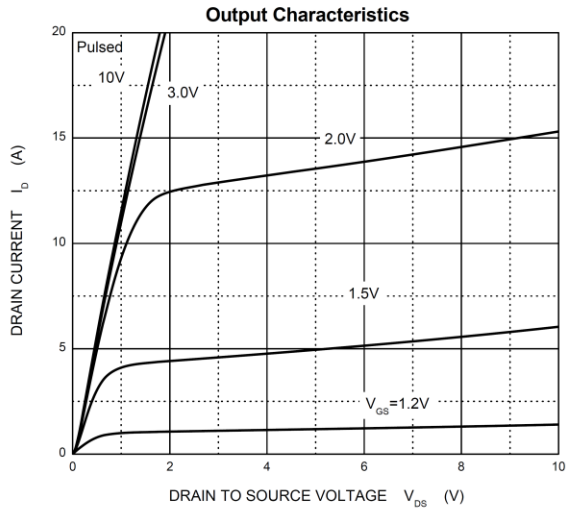
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 16V,V_{GS} = 0V			1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS} = ±4.5V, V_{DS} = 0V			±1	
		V_{GS} = ±8V, V_{DS} = 0V			±10	
Gate Threshold Voltage(1)	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.4	0.7	1.0	V
Drain-Source On-Resistance(1)	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 5A	10.5	12.3	17	mΩ
		V_{GS} = 3.8V, I_D = 5A	11.5	13	19	
		V_{GS} = 3.1V, I_D = 4A	12	14	21	
		V_{GS} = 2.5V, I_D = 3A	13	15.7	23	
Forward Tranconductance(1)	g_{FS}	V_{DS} = 5V, I_D = 7A	9			S
Diode Forward Voltage(1)	V_{DS}	V_{GS} = 0V, I_S = 1A			1	V
Dynamic Characteristics(2)						
Input Capacitance	C_{iss}	V_{DS} =10V, V_{GS} = 0V, f = 0.1MHz		567		pF
Output Capacitance	C_{oss}			109		
Reverse Transfer Capacitance	C_{rss}			17		
Total Gate Charge	Q_g	V_{DS} = 10V,V_{GS} = 4.5V,I_D = 7A		15		nC
Gate-Source Charge	Q_{gs}			0.8		
Gate-Drain Charge	Q_{gd}			3.2		
Switching Characteristics(2)						
Turn-On Delay Time	$t_{d(on)}$	V_{GS} = 5V,V_{DD} = 10V, R_L = 1.35Ω,R_{GEN} = 3Ω		6		ns
Turn-On Rise Time	t_r			13		
Turn-Off Delay Time	$t_{d(off)}$			52		
Turn-Off Fall Time	t_f			16		

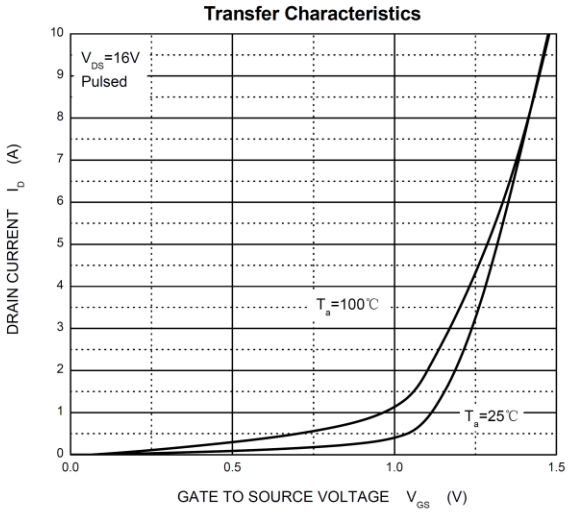
Notes :

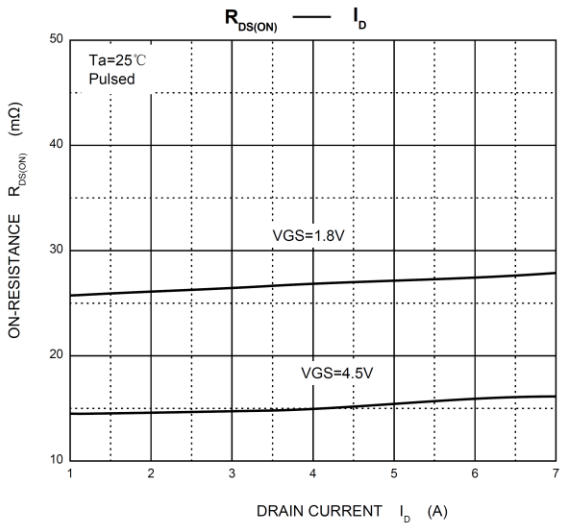
1. Pulse Test : Pulse width≤300μs, duty cycle≤0.5%.

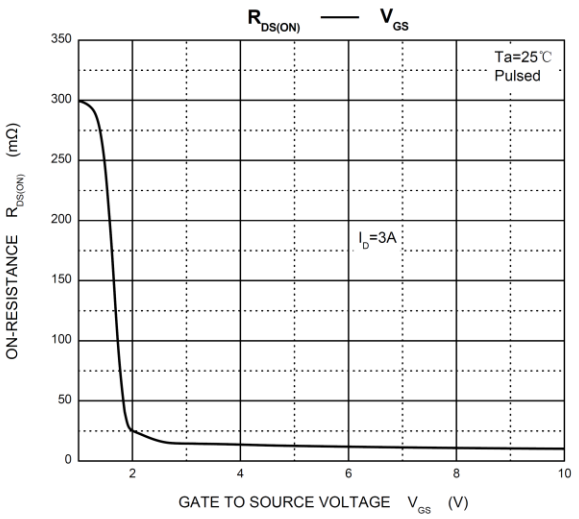
2. Guaranteed by design, not subject to production testing..

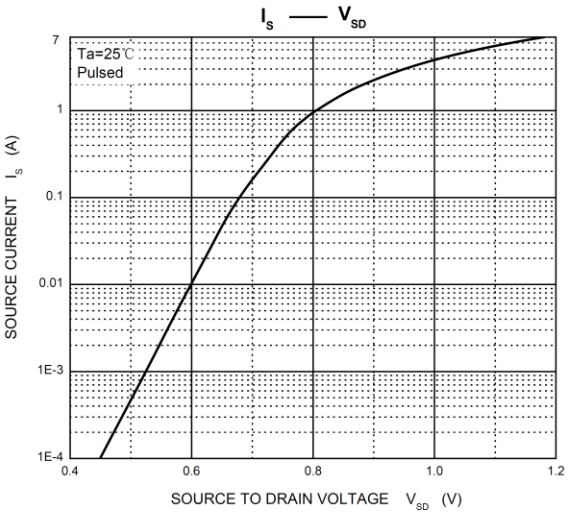
Typical Electrical and Thermal Characteristics

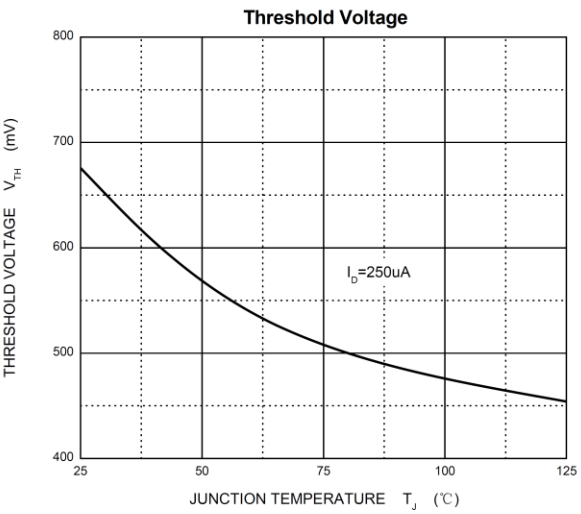




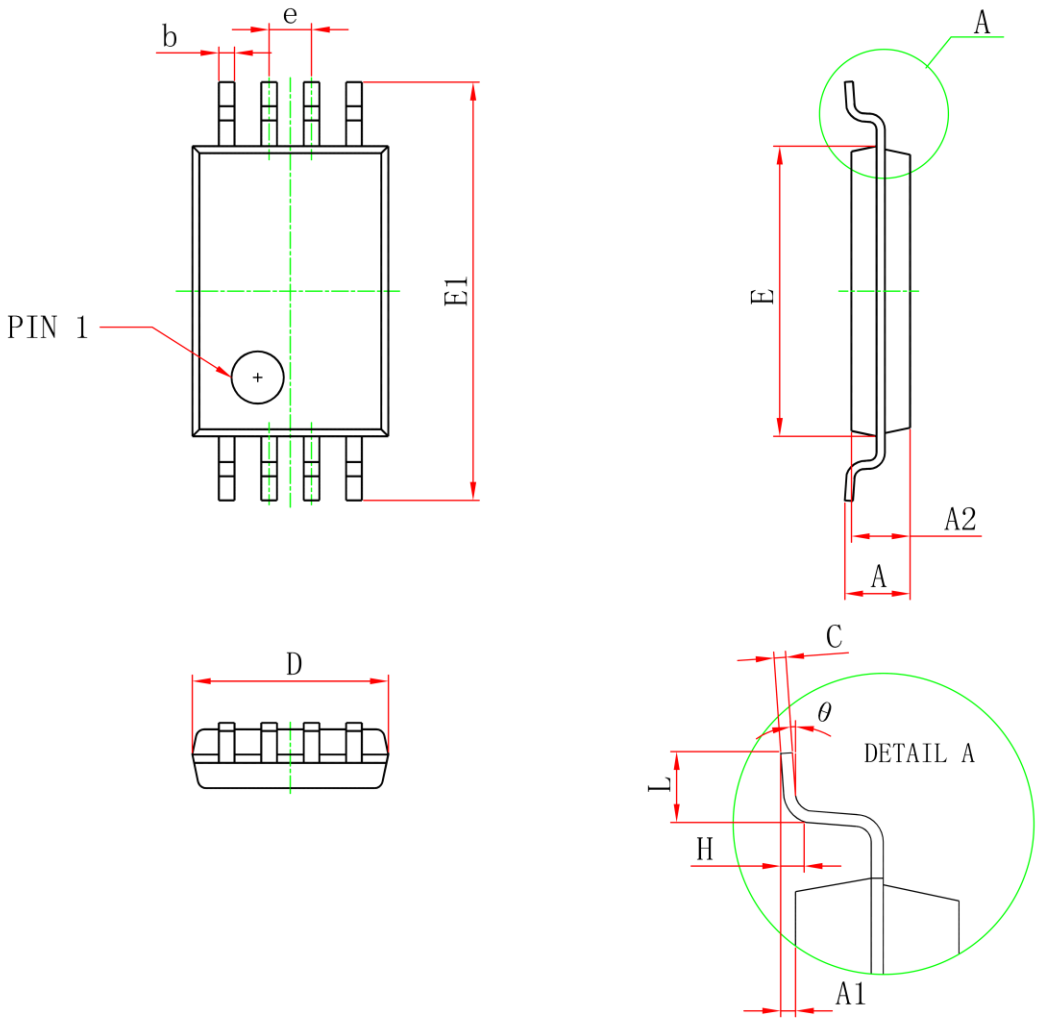








TSSOP8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
D	2.800	3.100	0.110	0.122
E	4.300	4.500	0.169	0.177
b	0.200	0.300	0.008	0.012
c	0.090	0.200	0.004	0.008
E1	6.200	6.600	0.244	0.260
A	1.200MAX		0.047MAX	
A2	0.800	1.050	0.031	0.041
A1	0.050	0.150	0.002	0.006
e	0.650BSC		0.026TYP	
L	0.450	0.750	0.018	0.030
H	0.250TYP		0.010TYP	
θ	1°	7°	1°	7°

Attention：

- GreenPower Electronics reserves the right to improve product design function and reliability without notice.
- Any and all semiconductor products have certain probability to fail or malfunction, which may result in personal injury, death or property damage. Customer are solely responsible for providing adequate safe measures when design their systems.
- GreenPower Electronics products belong to consumer electronics or other civilian electronic products.