

General Description

The MY8810 is the low RDSON trench N-CH MOSFETS with robust ESD protection. This product is suitable for Lithium-ion battery pack applications.

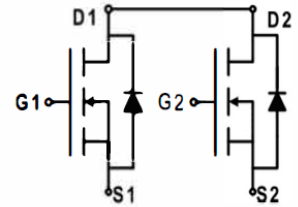
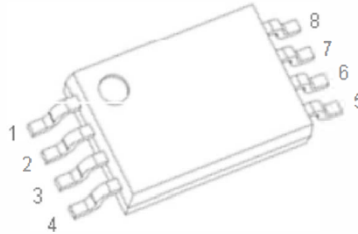


Features

V_{DSS}	20	V
I_D	10	A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	11	m Ω
$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	15	m Ω

Application

- Green Device Available
- Super Low Gate Charge
- Excellent Cdv/dt effect decline
- Advanced high cell density Trench technology



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY8810	TSSOP-8	MY8810	3000

Absolute Maximum Ratings ($T_c=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter		Max.	Units
V_{DSS}	Drain-Source Voltage		20	V
V_{GSS}	Gate-Source Voltage		± 10	V
I_D	Continuous Drain Current	$T_A=25^\circ\text{C}$	10	A
		$T_A=100^\circ\text{C}$	7.5	A
I_{DM}	Pulsed Drain Current ^{note1}		24	A
P_D	Power Dissipation	$T_A=25^\circ\text{C}$	1.23	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		111	$^\circ\text{C/W}$
T_J T_{STG}	Operating and Storage Temperature Range		-55 to +150	$^\circ\text{C}$

Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	20			V
R _{DS(on)}	Static Drain-Source On-Resistance ²	V _{GS} =4.5V, I _D =3.5A V _{GS} =2.5V, I _D =3.5A		11 15	15 18	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250μA	0.5		1.2	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =16V, V _{GS} =0V, T _J =25°C			1	μA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±8V, V _{DS} =0V			±100	nA
g _{fs}	Forward Transconductance	V _{DS} =5V, I _D =3.5A		20		S
Q _g	Total Gate Charge (4.5V)			11.3		
Q _{gs}	Gate-Source Charge	V _{DS} =15V, V _{GS} =4.5V, I _D =7A		1.89		nC
Q _{gd}	Gate-Drain Charge			3.56		
T _{d(on)}	Turn-On Delay Time			8		
T _r	Rise Time	V _{DD} =10V, V _{GS} =4.5V, R _G =3.3Ω		17		ns
T _{d(off)}	Turn-Off Delay Time	I _D =3.5A		27		
T _f	Fall Time			8.8		
C _{iss}	Input Capacitance			955		
C _{oss}	Output Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz		200		pF
C _{rss}	Reverse Transfer Capacitance			150		

Note :

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper
- 2.The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
- 3.The power dissipation is limited by 150°C junction temperature
- 4.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Characteristics

Figure 1: Output Characteristics

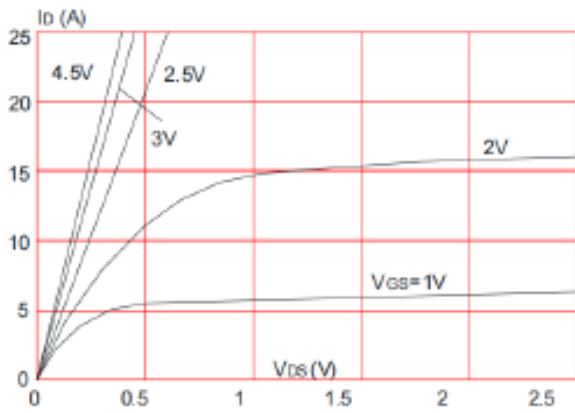


Figure 2: Typical Transfer Characteristics

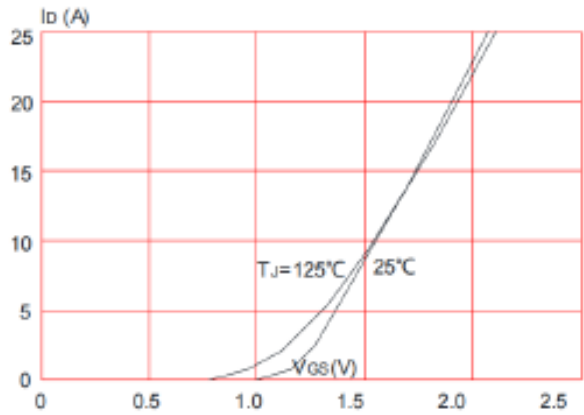


Figure 3: On-resistance vs. Drain Current

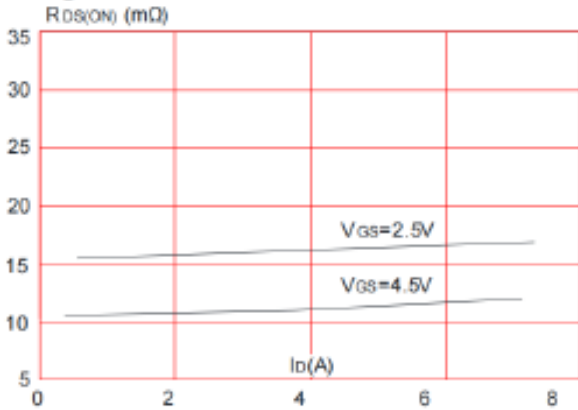


Figure 4: Body Diode Characteristics

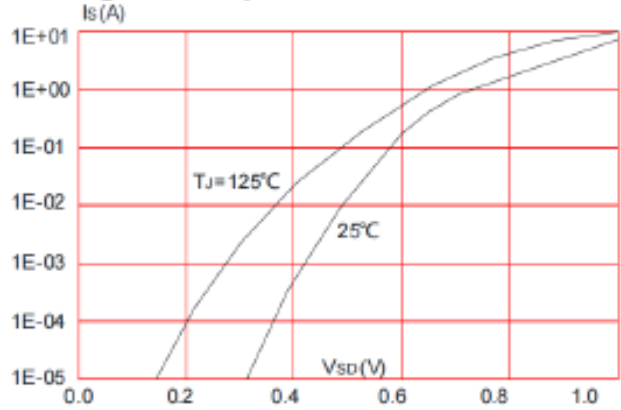


Figure 5: Gate Charge Characteristics

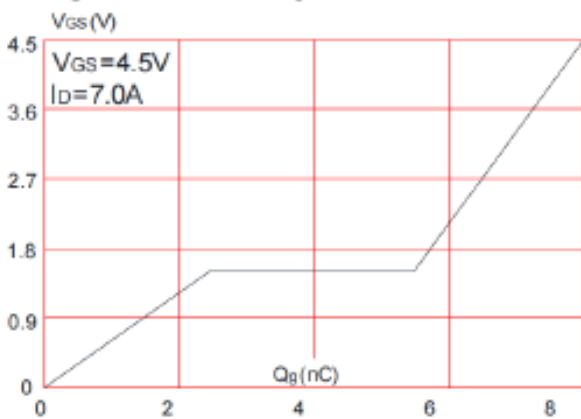


Figure 6: Capacitance Characteristics

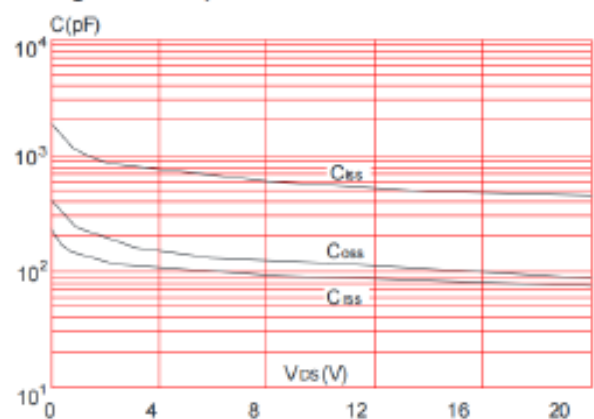


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

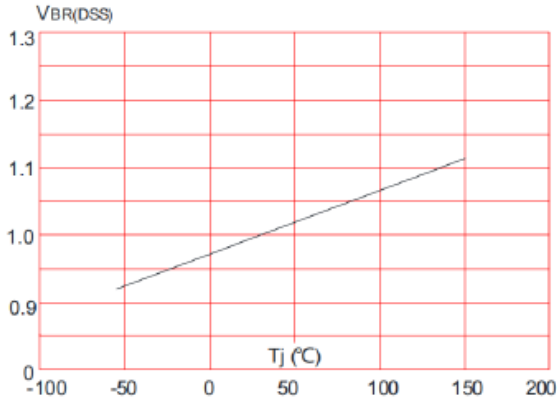


Figure 8: Normalized on Resistance vs. Junction Temperature

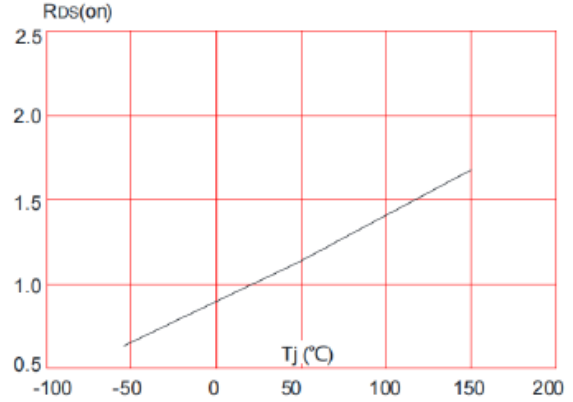


Figure 9: Maximum Safe Operating Area

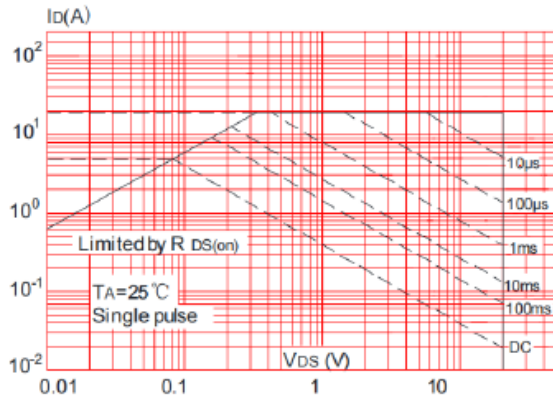


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

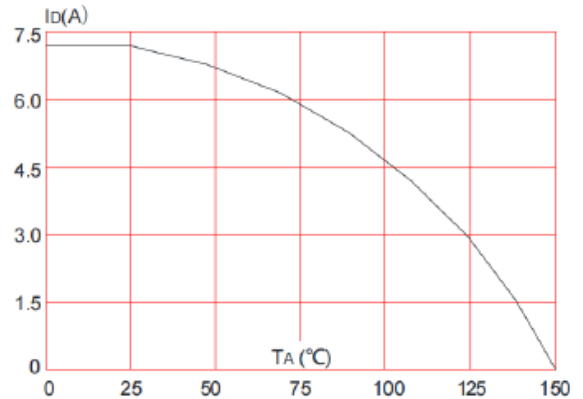
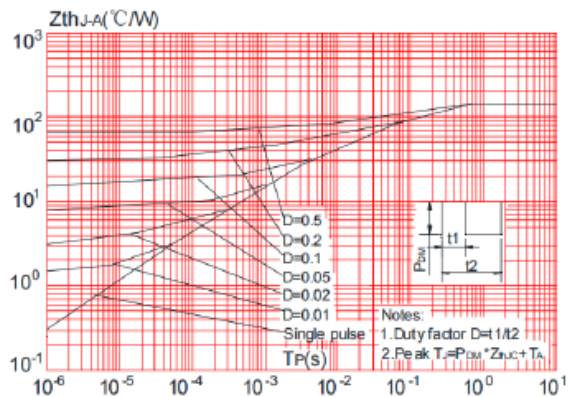
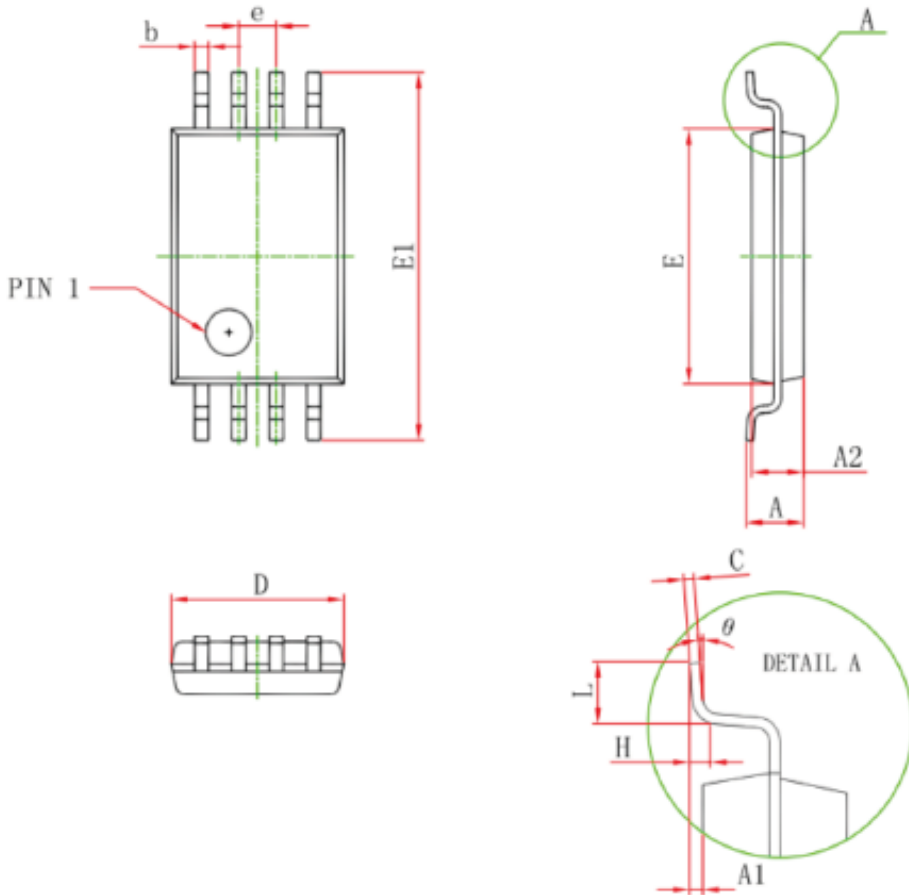


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



Package Mechanical Data-TSSOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
D	2.900	3.100	0.114	0.122
E	4.300	4.500	0.169	0.177
b	0.190	0.300	0.007	0.012
c	0.090	0.200	0.004	0.008
E1	6.250	6.550	0.246	0.258
A		1.200		0.047
A2	0.800	1.000	0.031	0.039
A1	0.050	0.150	0.002	0.006
e	0.65 (BSC)		0.026 (BSC)	
L	0.500	0.700	0.020	0.028
H	0.25(TYP)		0.01(TYP)	
θ	1°	7°	1°	7°