



鑫沃科技
XIN WO TECHNOLOGY



AO8810EA

Dual N-Channel Fast Switching MOSFET

TSSOP8/20V/7A

深圳东为电子科技有限公司
DONGWEI ELECTRONIC TECHNOLOGY CO., LTD

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

Product Summary

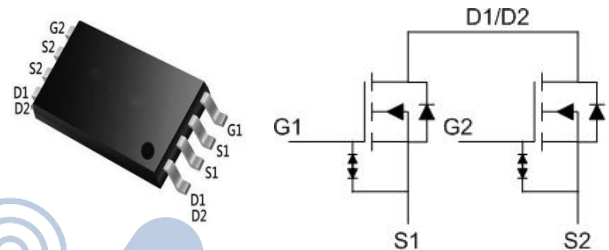
BVDSS	RDSON	ID
20V	11mΩ	7A

Description

The AO8810EA is the low $R_{DS(ON)}$ trenched N-CH MOSFETs with robust ESD protection. This product is suitable for Lithium-ion battery pack applications.

The AO8810EA meet the RoHS and Green Product requirement with full function reliability approved.

TSSOP8 Pin Configuration



Product	Package	Marking	Packing	Min Unit Quantity
AO8810EA	TSSOP8	8810	3000PCS/Reel	3000PCS

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

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°C	7	A
		T _A = 100°C	4.5	A
I _{DM}	Pulsed Drain Current ^{note1}	24	A	
P _D	Power Dissipation	1.23	W	
R _{θJA}	Thermal Resistance, Junction to Ambient	111	°C/W	
T _J , T _{STG}	Operating and Storage Temperature Range	-55 to +150	°C	

Electrical Characteristics ($T_J=25\text{ }^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	20	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance ²	$V_{GS}=4.5V, I_D=3.5A$		11	15	m Ω
		$V_{GS}=2.5V, I_D=3.5A$		15	18	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	0.5	---	1.2	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=16V, V_{GS}=0V, T_J=25^\circ\text{C}$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 8V, V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V, I_D=3.5A$	---	20	---	S
Q_g	Total Gate Charge (4.5V)	$V_{DS}=15V, V_{GS}=4.5V, I_D=7A$	---	11.3	---	nC
Q_{gs}	Gate-Source Charge		---	1.89	---	
Q_{gd}	Gate-Drain Charge		---	3.56	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=10V, V_{GS}=4.5V, R_G=3.3\Omega$ $I_D=3.5A$	---	8	---	ns
T_r	Rise Time		---	17	---	
$T_{d(off)}$	Turn-Off Delay Time		---	27	---	
T_f	Fall Time		---	8.8	---	
C_{iss}	Input Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1\text{MHz}$	---	955	---	pF
C_{oss}	Output Capacitance		---	200	---	
C_{riss}	Reverse Transfer Capacitance		---	150	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current ^{1,4}	$V_G=V_D=0V$, Force Current	---	---	7	A
V_{SD}	Diode Forward Voltage ²	$V_{GS}=0V, I_S=1A, T_J=25^\circ\text{C}$	---	---	1.2	V

Note :

1. The data tested by surface mounted on a 1 inch² FR-4 board with 20Z copper.
2. The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
3. The power dissipation is limited by 150 $^\circ\text{C}$ 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 Performance Characteristics

Figure 1: Output Characteristics

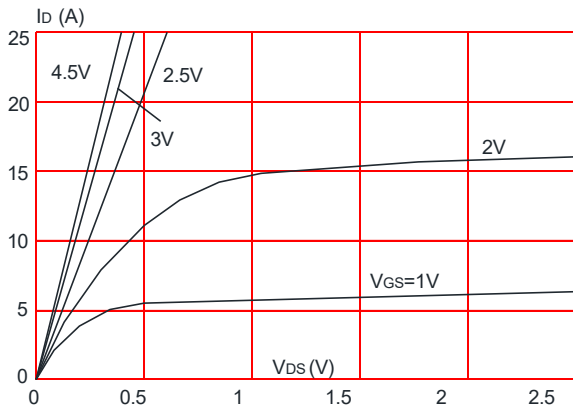


Figure 2: Typical Transfer Characteristics

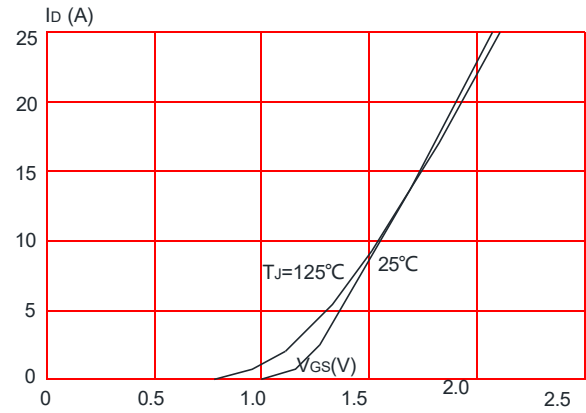


Figure 3: On-resistance vs. Drain Current

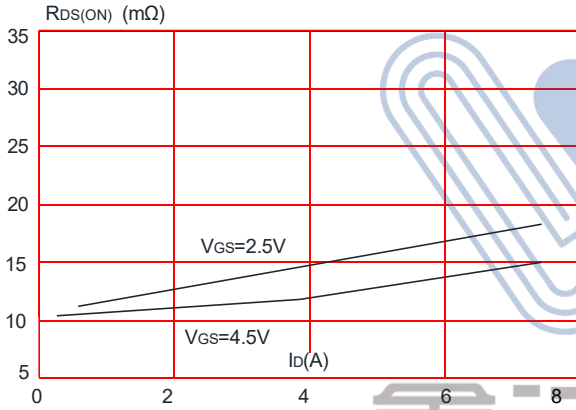


Figure 4: Body Diode Characteristics

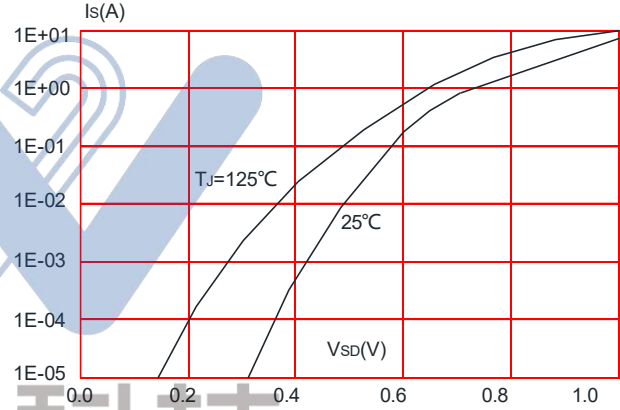


Figure 5: Gate Charge Characteristics

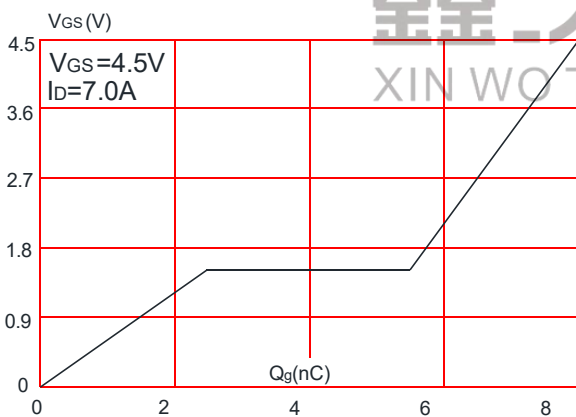


Figure 6: Capacitance Characteristics

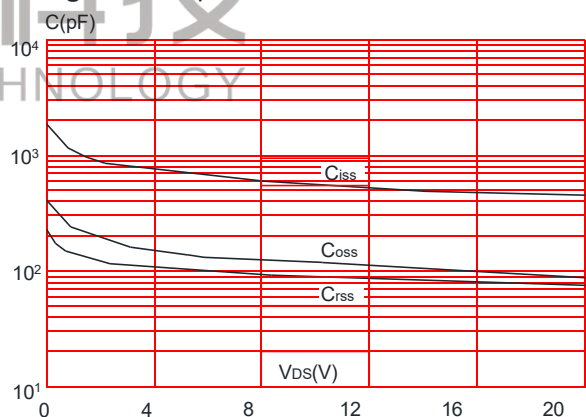


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

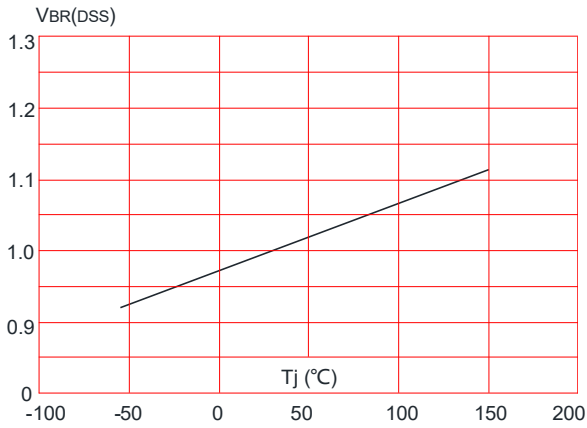


Figure 8: Normalized on Resistance vs. Junction Temperature

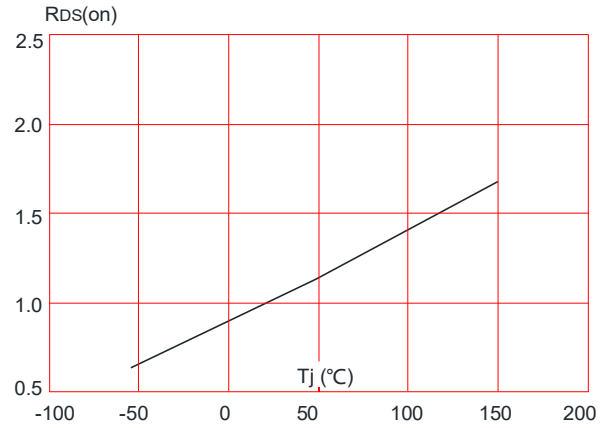


Figure 9: Maximum Safe Operating Area

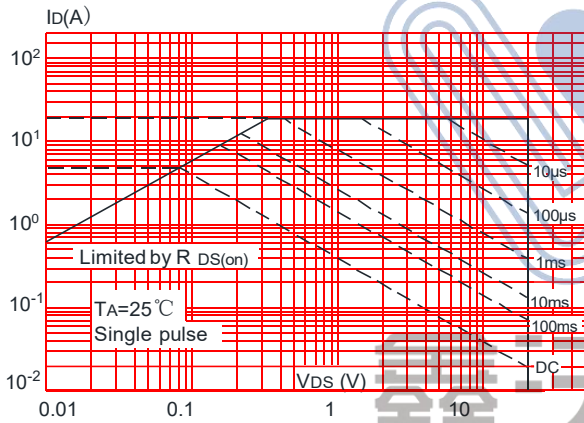


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

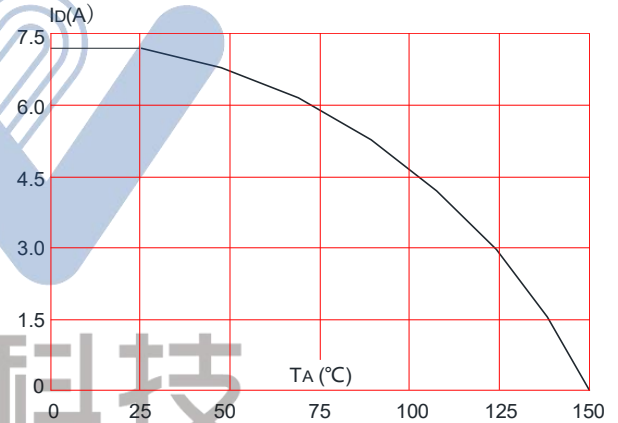
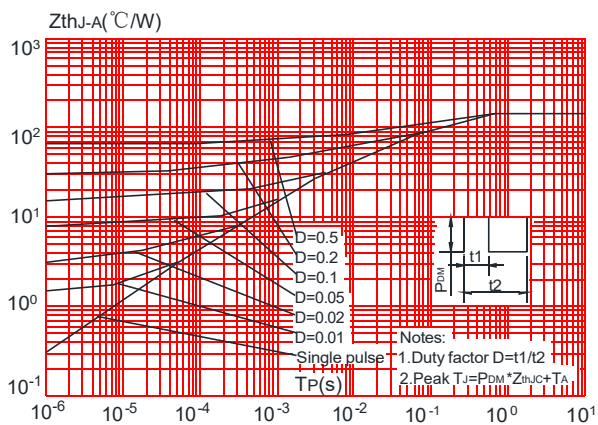
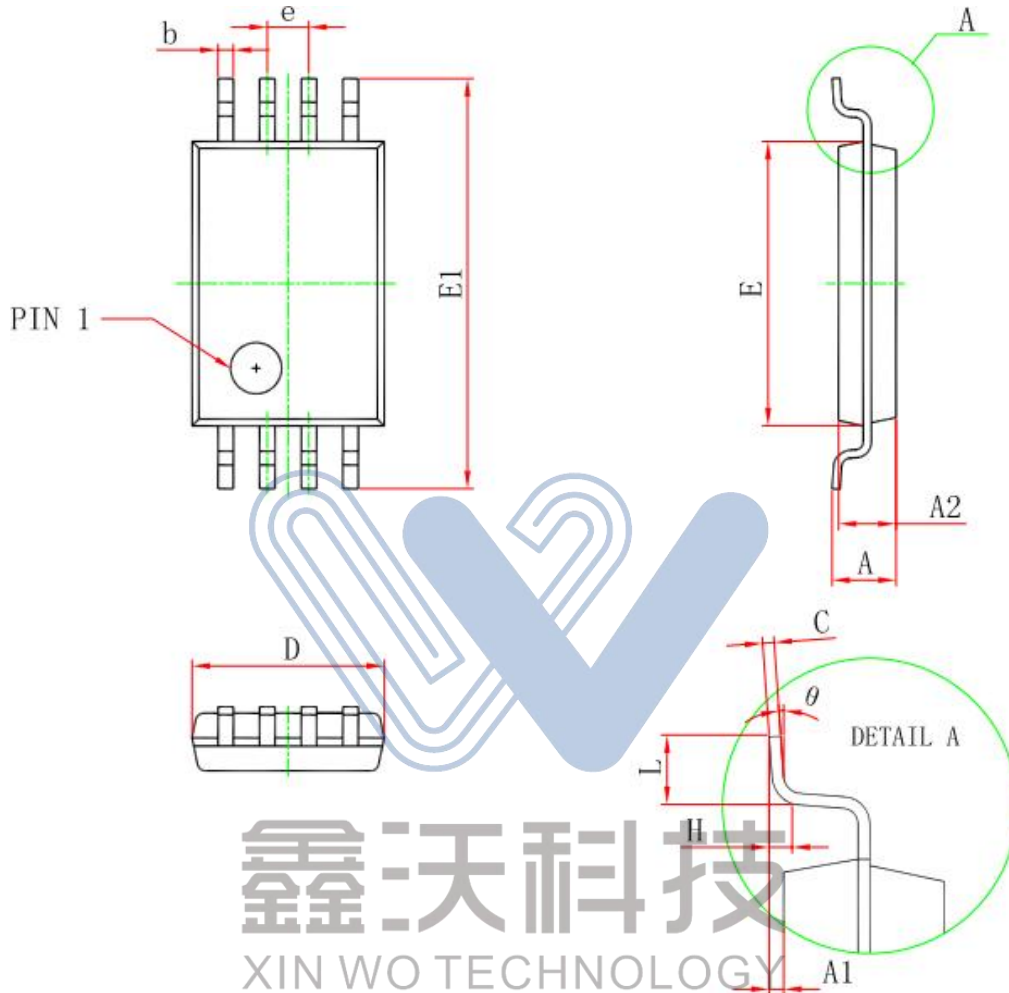


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



TSSOP8 Package Outline Dimensions



鑫沃科技
XIN WO TECHNOLOGY

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°