Description

The TX8810ES uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V.

TSSOP-8

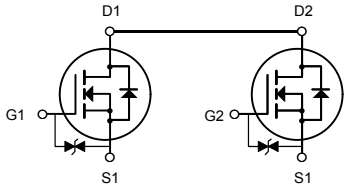
General Features

V_{DS} = 20V,I_D = 7A

$R_{DS(ON)}$ < 20mΩ @ V_{GS}=4.5V

$R_{DS(ON)}$ < 28mΩ @ V_{GS}=2.5V

ESD Rating：2000V HBM



Dual N-Channel MOSFET

Application

Battery protection

Load switch Power management

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

Symbol	Parameter	Limit	Unit
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	±12	V
I_D	Drain Current-Continuous@ Current-Pulsed (Note 1)	7	A
I_{DM}		25	A
P_D	Maximum Power Dissipation	1.5	W
T_J,T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	℃
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient (Note 2)	83	℃/W

ELECTRICAL CHARACTERISTICS (TA=25℃unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V			1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±4.5V,V_{DS}=0V			±200	nA
		V_{GS}=±10V,V_{DS}=0V			±10	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	0.6	0.75	1.2	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=6.5A		14	20	mΩ
		V_{GS}=4V, I_D=6A		16	22	mΩ
		V_{GS}=3.1V, I_D=5.5A		19	26	mΩ
		V_{GS}=2.5V, I_D=5.5A		24	28	mΩ
Forward Transconductance	g_{FS}	V_{DS}=10V,I_D=6.5A		6.6		S
Input Capacitance	C_{lss}	V_{DS}=8V,V_{GS}=0V, F=1.0MHz		650		PF
Output Capacitance	C_{oss}			360		PF
Reverse Transfer Capacitance	C_{rss}			154		PF
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=10V,I_D=1A V_{GS}=4.5V,R_{GEN}=6Ω		11	22	nS
Turn-on Rise Time	t_r			12	28	nS
Turn-Off Delay Time	$t_{d(off)}$			35	73	nS
Turn-Off Fall Time	t_f			33	65	nS
Total Gate Charge	Q_g	V_{DS}=10V,I_D=7A, V_{GS}=4.5V		11	16	nC
Gate-Source Charge	Q_{gs}			2.5		nC
Gate-Drain Charge	Q_{gd}			3.2		nC
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S=1.5A		0.84	1.2	V

NOTES:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

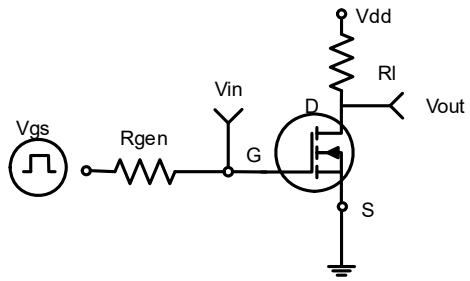


Figure 1:Switching Test Circuit

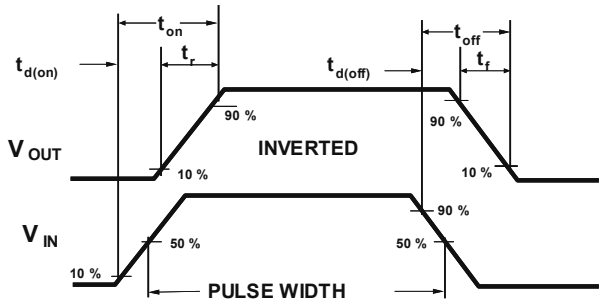


Figure 2:Switching Waveforms

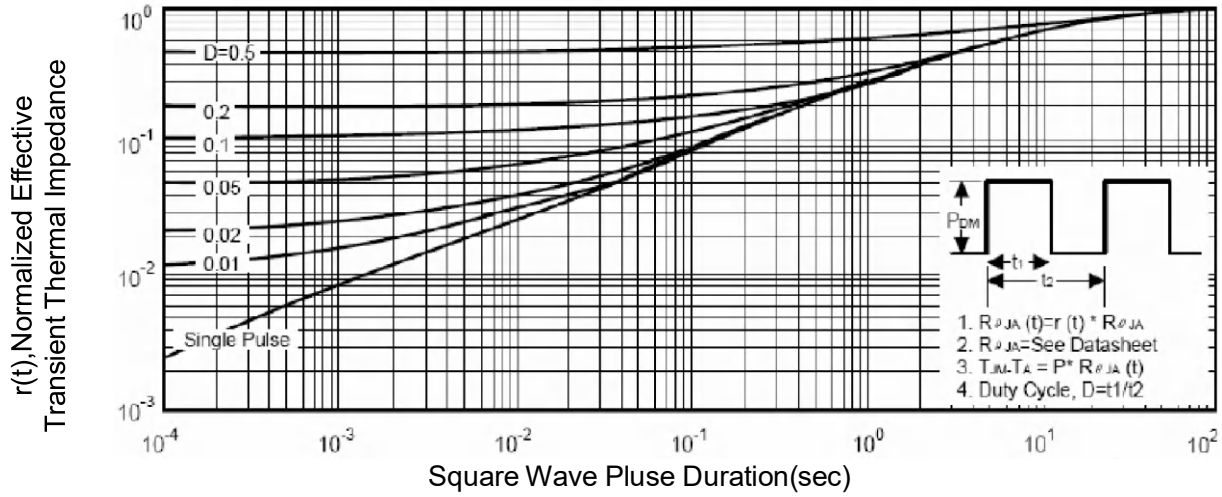
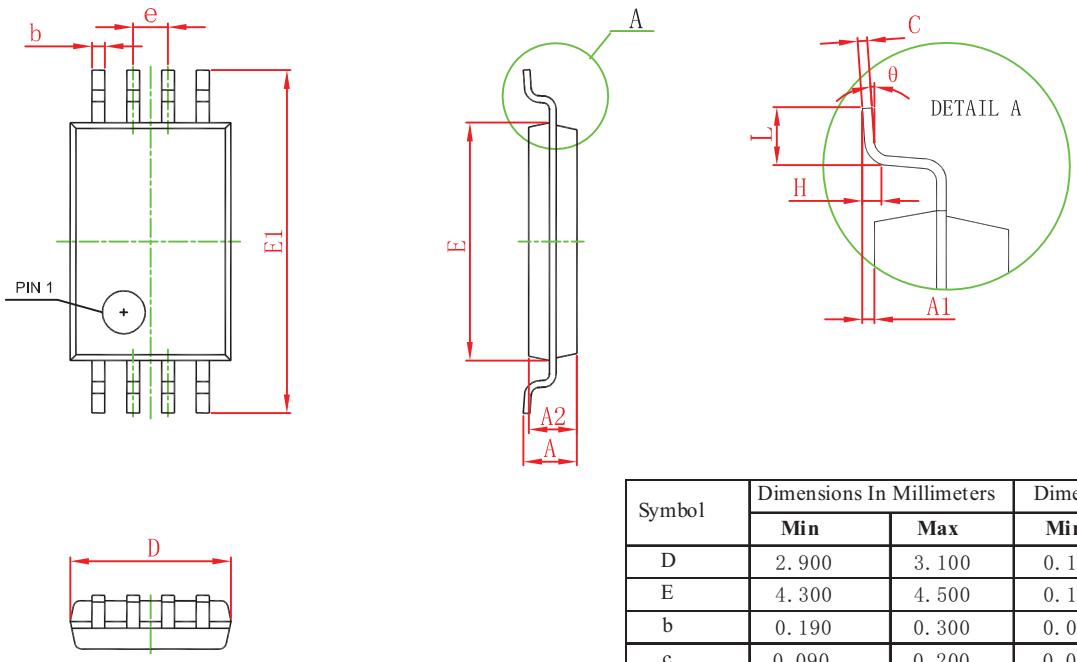


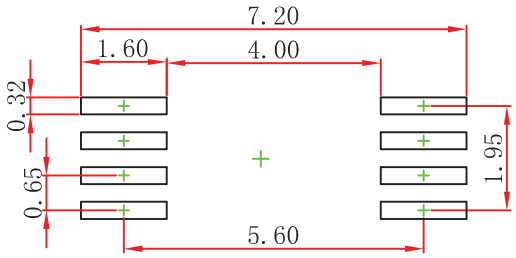
Figure 3 Normalized Maximum Transient Thermal Impedance

TSSOP-8 Package Outline Dimensions



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°

TSSOP-8 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

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