

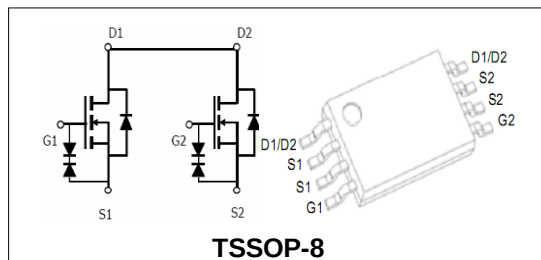
**20V/7A N-Channel Junction Power MOSFET****Features**

- Advanced Trench Technology
- Excellent RDS(ON) and Low Gate Charge

BVDSS	20	V
ID	7	A
RDSON@VGS=4.5V	22	mΩ
RDSON@VGS=2.5V	30	mΩ

Applications

- Load Switch
- PWM Application
- Power management

**Order Information**

Product	Package	Marking	Reel Size	Reel	Carton
PT8810	TSSOP-8	8810	13inch	5000PCS	50000PCS

Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{(BR)DSS}	Drain-Source Breakdown Voltage		20	V
V _{GS}	Gate-Source Voltage		±10	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	°C
I _S	Diode Continuous Forward Current	TA =25°C	7	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested (Silicon Limit)	(Note1) TA =25°C	25	A
I _D	Continuous Drain current	TA =25°C	7	A
P _D	Maximum Power Dissipation	TA =25°C	1	W
R _{θJa}	Thermal Resistance Junction-to-Ambient		(Note2) 125	°C/W



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Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
Static Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
V _{(BR)DSS}	Drain- Source Breakdown Voltage	VGS=0V ID=250μA	20	--	--	V
I _{DSS}	Zero Gate Voltage Drain current	VDS=16V,VGS=0V	--	--	1	μA
I _{GSS}	Gate-Body Leakage Current	VGS=±10V,VDS=0V	--	--	±10	μA
V _{GS(TH)}	Gate Threshold Voltage	VDS=VGS,ID=250μA	0.5	--	1.0	V
R _{DS(ON)}	Drain-Source On-State Resistance (Note3)	VGS=4.5V, ID=6A	--	15	22	mΩ
		VGS=2.5V, ID=5.5A	--	18	26	
Dynamic Electrical Characteristics @ T _J = 25°C (unless otherwise stated) (Note4)						
C _{iss}	Input Capacitance	VDS=10V, VGS=0V, F=1MHz	--	1150	--	pF
C _{oss}	Output Capacitance		--	185	--	pF
C _{rss}	Reverse Transfer Capacitance		--	145	--	pF
Q _g	Total Gate Charge	VDS=10V, ID=6A, VGS=4.5V	--	15	--	nC
Q _{gs}	Gate-Source Charge		--	0.8	--	nC
Q _{gd}	Gate-Drain Charge		--	3.2	--	nC
Switching Characteristics (Note4)						
t _{d(on)}	Turn-on Delay Time	VDD=10V, RL=1.5Ω, VGS=5V RG=3Ω	--	6	--	nS
t _r	Turn-on Rise Time		--	13	--	nS
t _{d(off)}	Turn-off Delay Time		--	52	--	nS
t _f	Turn-off Fall Time		--	16	--	nS
Source- Drain Diode Characteristics@ T _J = 25°C (unless otherwise stated)						
V _{SD}	Forward on voltage	IS=1.5A,VGS=0V	--	--	1.2	V

Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: pulse width ≤ 300 us, duty cycle ≤ 2%.
4. Guranteed by design, not subject to production testing.



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Typical Characteristics

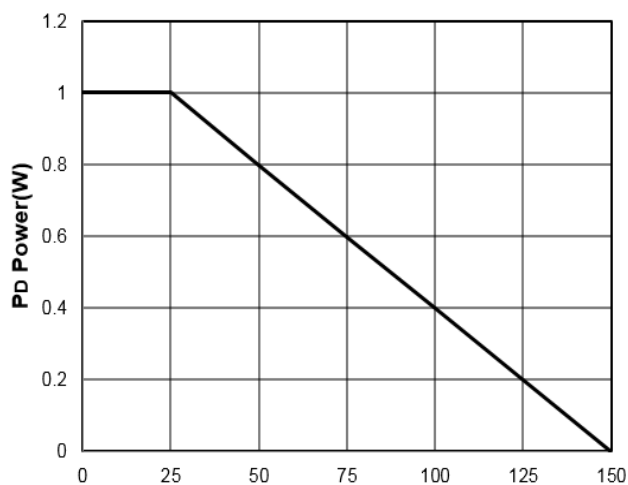
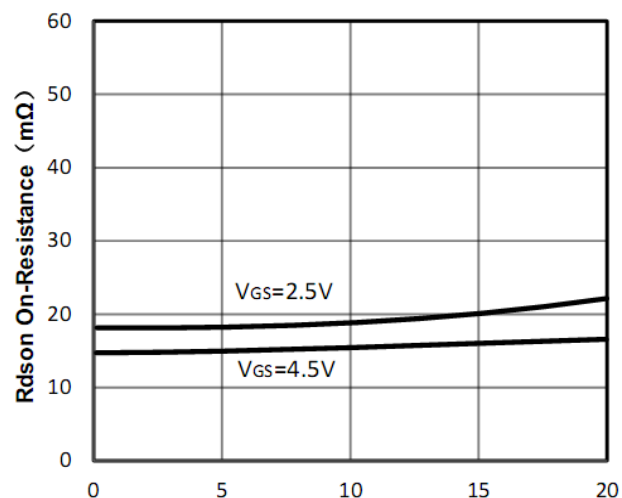
Figure1: T_j Junction Temperature (°C)

Figure2: Id Drain Current (A)

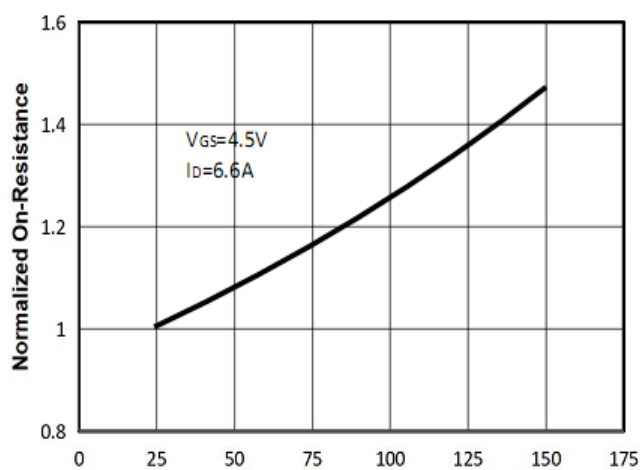
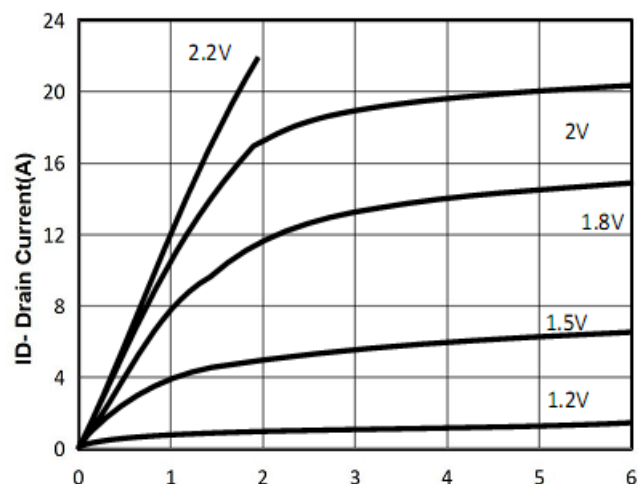
Figure3: T_j Junction Temperature (°C)

Figure4: Vds Drain-Source Voltage (V)

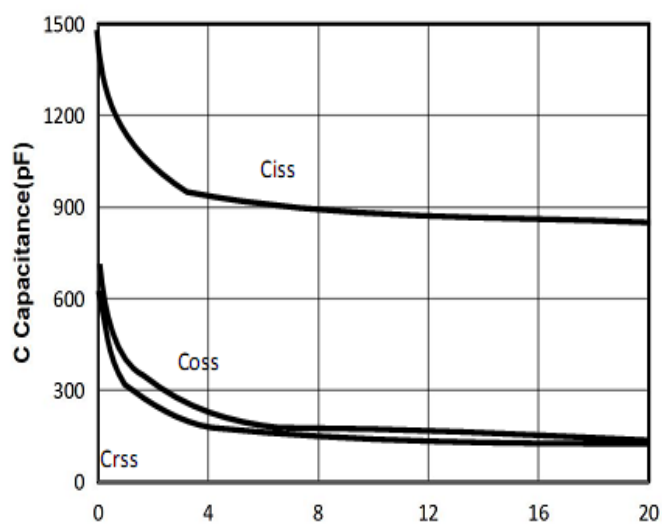


Figure5: Vds Drain-Source Voltage (V)

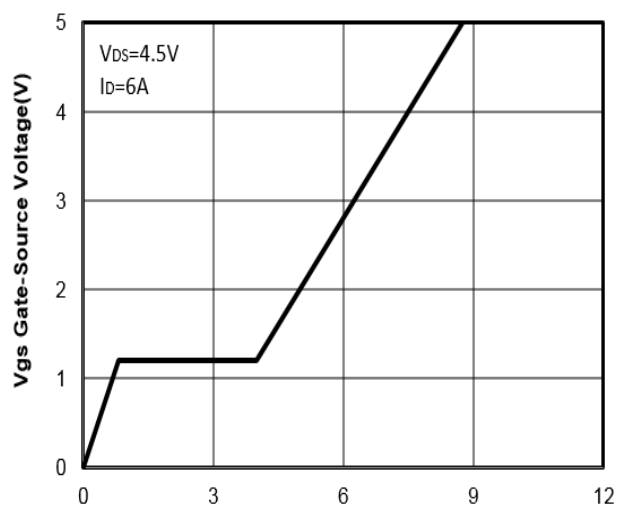


Figure6: Qg Gate Charge (nC)



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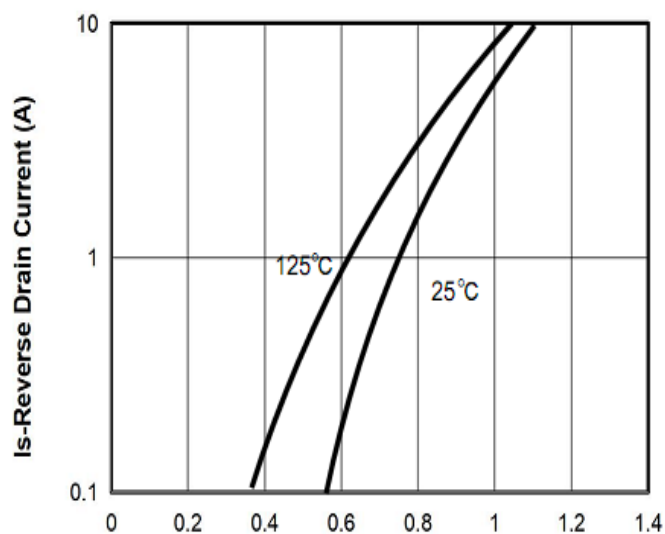


Figure7: Vsd Source-Drain Voltage (V)

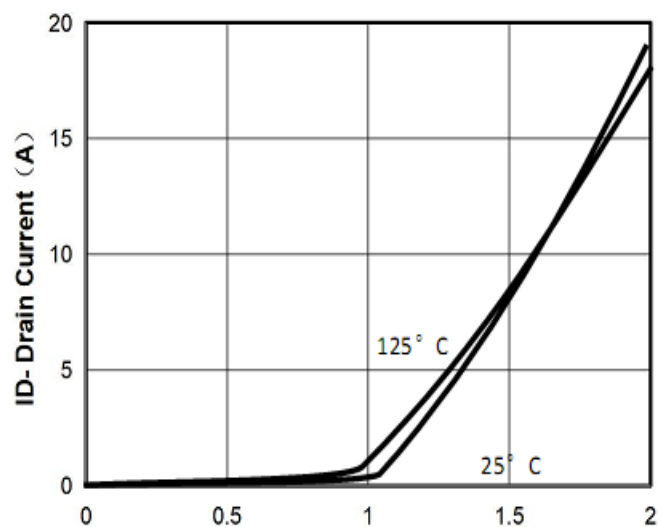


Figure8: Vgs Gate-Source Voltage (V)

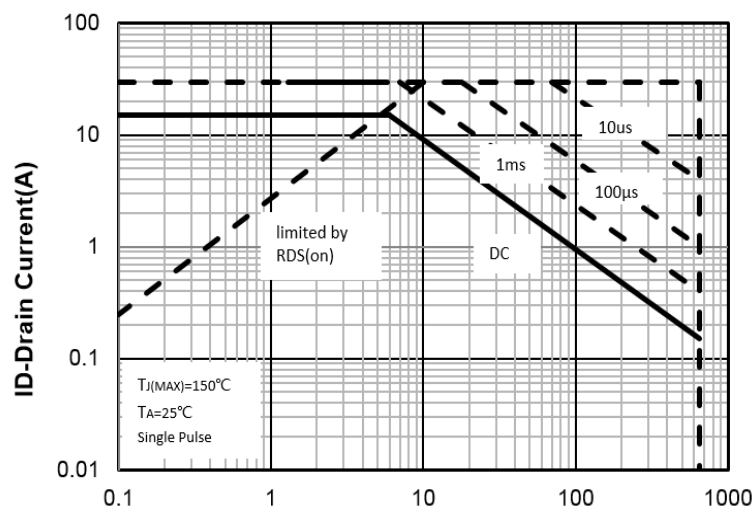


Figure9: VDS Drain-Source Voltage (V)

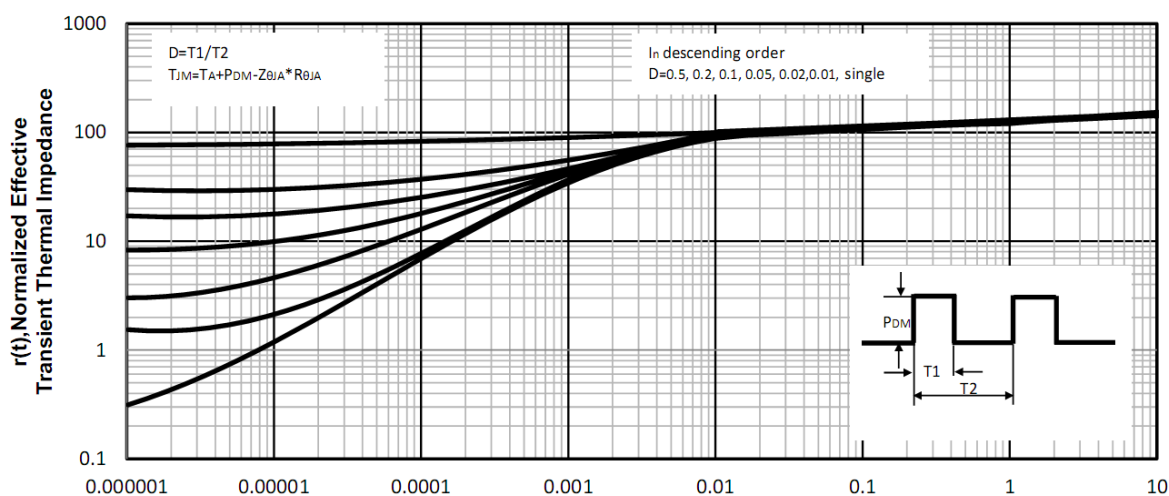
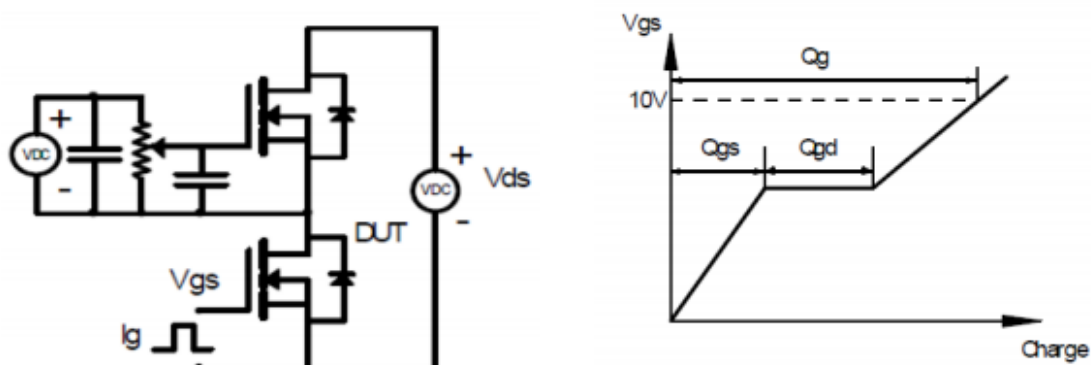
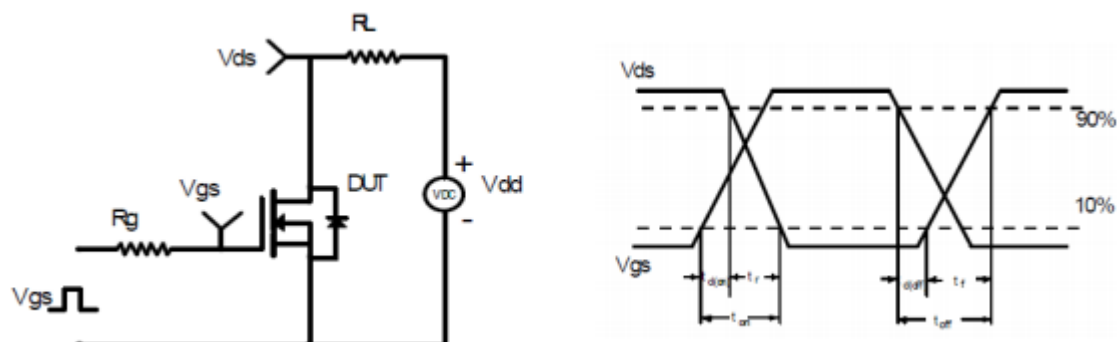
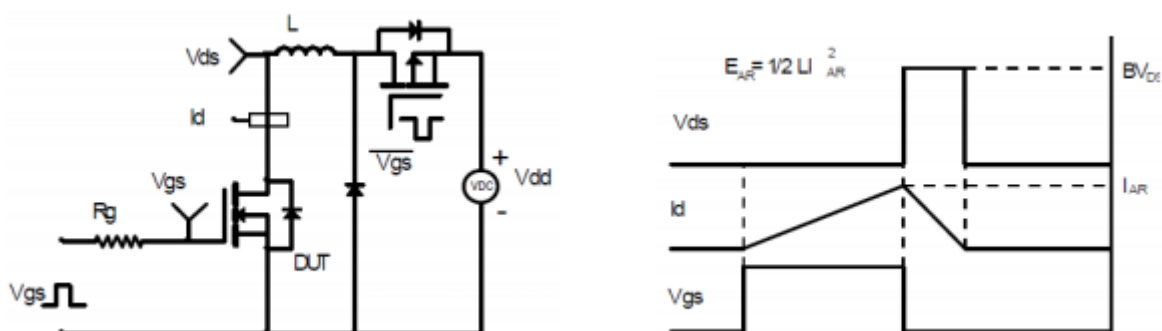
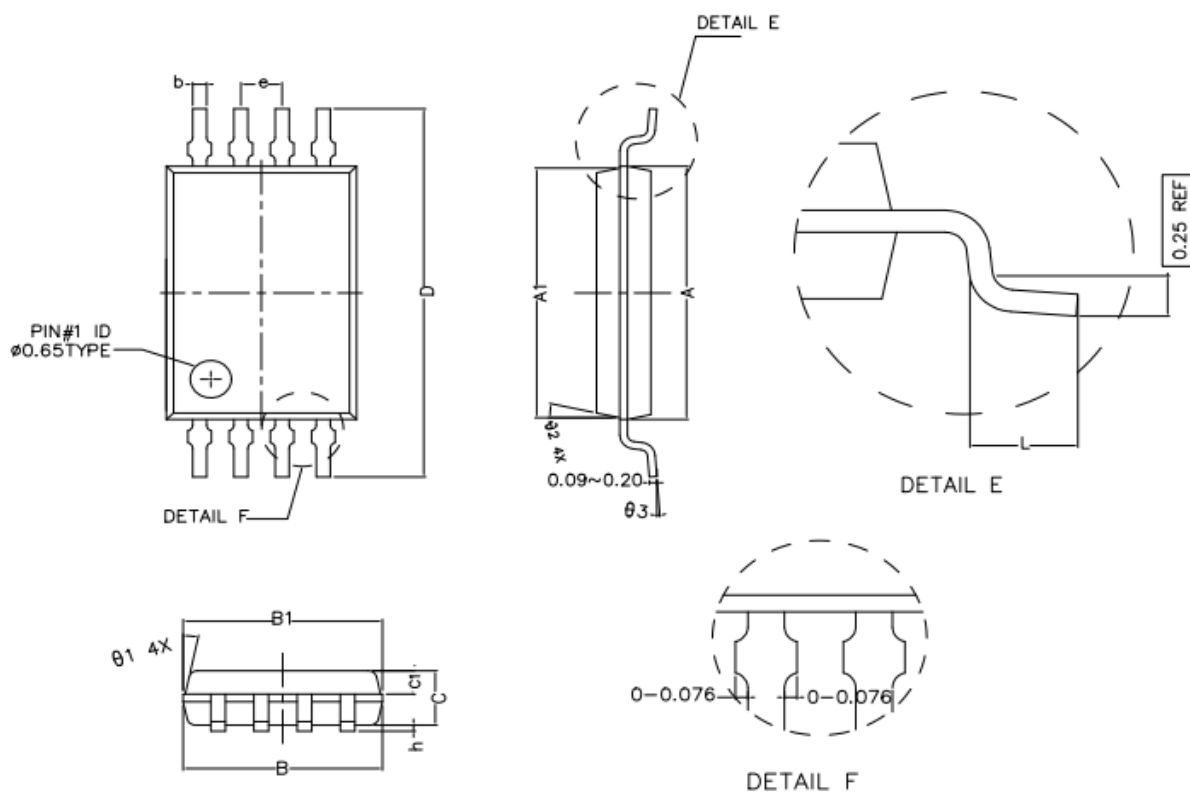


Figure10: Square Wave Pulse Duration (sec)

Test Circuit and Waveform:

Figure A Gate Charge Test Circuit & Waveforms

Figure B Switching Test Circuit & Waveforms

Figure C Unclamped Inductive Switching Circuit & Waveforms

**20V/7A N-Channel Junction Power MOSFET****TSSOP-8 Package Outline Dimensions (Units: mm)**

COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A	4.300	4.400	4.500
A1	4.240	4.340	4.440
B	2.900	3.000	3.100
B1	2.840	2.940	3.040
C	0.850	0.900	0.950
C1	0.337	0.387	0.437
D	6.250	6.400	6.550
L	0.450	0.600	0.750
b	0.170	0.220	0.300
h	0.050	0.100	0.150
e	0.650TYPE		
θ ₁	12° TYPE		
θ ₂	12° TYPE		
θ ₃	0° ~ 7°		