



Power MOSFETS

DATASHEET

LM60750TAQ8A

Dual P-Channel
Enhancement Mode MOSFET

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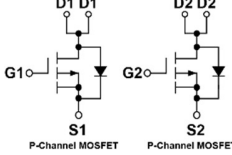
Quality Management Systems

ISO 9001:2015 Certificate

LM60750TAQ8A

Dual P-Channel Enhancement Mode MOSFET

Pin Description

SOP-8L(Dual) (TOP view)	Symbol	Symbol	Dual P-Channel	Unit
		V_{DSS}	-60	V
		$R_{DS(ON)-Max}$	75	mΩ
		ID	-4.7	A

Feature

- Reliable and Rugged
- ROHS Compliant & Halogen-Free
- 100% UIS Tested

Applications

- Portable Equipment
- Battery Powered System
- Load Switches.
- Motor Control.

Ordering Information

Orderable Part Number	Package Type	Form	Shipping	Marking
LM60750TAQ8A	SOP-8L(Dual)	Tape & Reel	3000 / Tape & Reel	60750 □□□□□□

Note : □□□□□□ = Lot Code

Absolute Maximum Ratings (T_J=25°C Unless Otherwise Noted)

Symbol	Parameter	Dual P-Channel	Unit
V_{DSS}	Drain-Source Voltage	-60	V
V_{GSS}	Gate-Source Voltage	±20	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
I_S	Diode Continuous Forward Current	$T_A=25^\circ\text{C}$	-1.5
$I_{DM}^{(1)}$	Pulse Drain Current Tested	$T_A=25^\circ\text{C}$	-12
I_D	Continuous Drain Current	$T_A=25^\circ\text{C}$	-4.7
		$T_A=70^\circ\text{C}$	-3
P_D	Maximum Power Dissipation	$T_A=25^\circ\text{C}$	1.7
		$T_A=70^\circ\text{C}$	0.7
$I_{AS}^{(2)}$	Avalanche Current, Single pulse	L=0.1mH	-18
		L=0.5mH	-8.5
$E_{AS}^{(2)}$	Avalanche Energy, Single pulse	L=0.1mH	16
		L=0.5mH	18

Thermal Characteristics

Symbol	Parameter	Rating	Unit
$R_{\theta JA}^{(3)}$	Thermal Resistance-Junction to Ambient	$t \leq 10s$	48
		Steady State	74

Note ① : Max. current is limited by junction temperature.

Note ② : UIS tested and pulse width are limited by maximum junction temperature 150°C

Note ③ : Surface Mounted on 1in² FR-4 board with 1oz.

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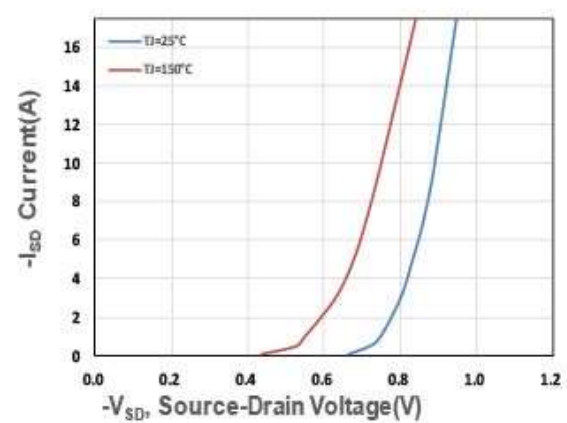
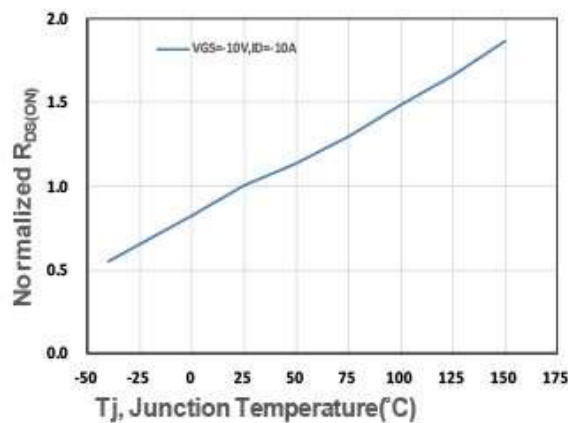
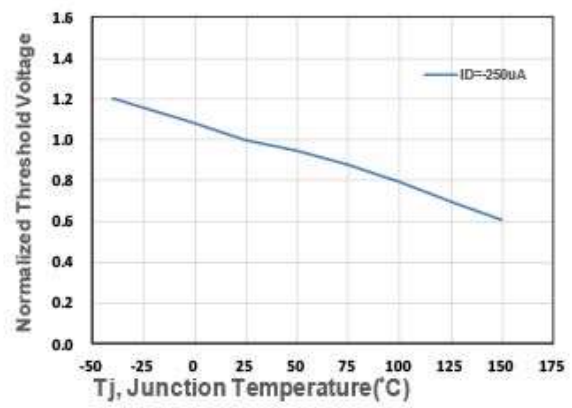
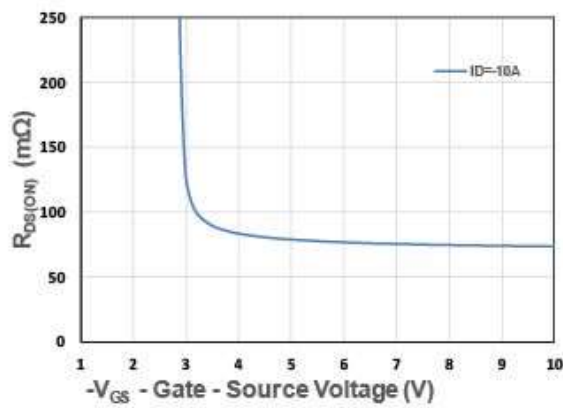
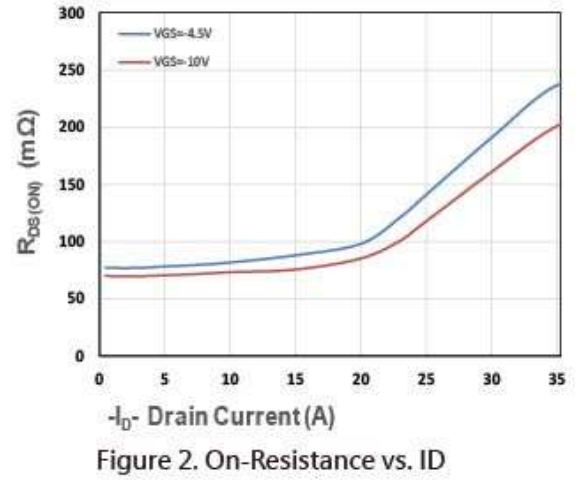
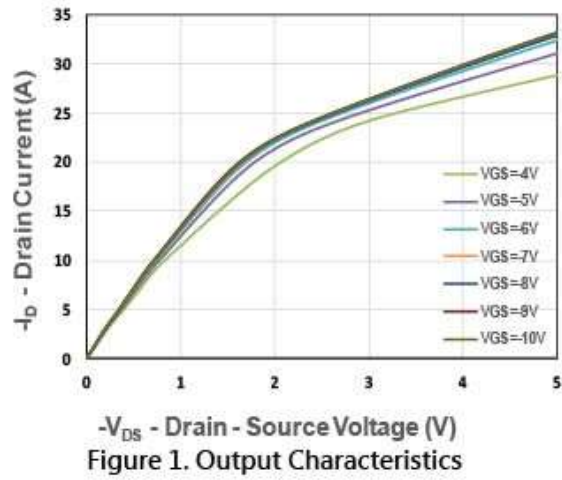
Dual P-Channel Electrical Characteristics (T_J=25°C Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Electrical Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250uA	-60	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-48V, V _{GS} =0V	-	-	-1	uA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =-250uA	-1.1	-1.8	-2.5	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^④	Drain-Source On-state Resistance	V _{GS} =-10V, I _{DS} =-10A	-	65	75	mΩ
		V _{GS} =-4.5V, I _{DS} =-5A	-	70	90	
gfs	Forward Transconductance	V _{DS} =-5V, I _{DS} =-10A	-	15	-	S
Dynamic Characteristics ^⑤						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, Freq.=1MHz	-	10	-	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-30V, Freq.=1MHz	-	1300	-	pF
C _{oss}	Output Capacitance		-	54	-	
C _{rss}	Reverse Transfer Capacitance		-	40	-	
td(ON)	Turn-on Delay Time	V _{GS} =-10V, V _{DS} =-30V, I _D =-1A, R _{GEN} =3Ω	-	6.9	-	nS
t _r	Turn-on Rise Time		-	3.7	-	
t _{d(OFF)}	Turn-off Delay Time		-	70.6	-	
t _f	Turn-off Fall Time		-	31	-	
Q _g	Total Gate Charge	V _{GS} =-4.5V, V _{DS} =-30V I _D =-10A	-	12.5	-	nC
Q _g	Total Gate Charge	V _{GS} =-10V, V _{DS} =-30V, I _D =-10A	-	27	-	
Q _{gs}	Gate-Source Charge		-	6.5	-	
Q _{gd}	Gate-Drain Charge		-	3.3	-	
Source-Drain Characteristics						
V _{SD} ^④	Diode Forward Voltage	I _{SD} =-1A, V _{GS} =0V	-	-0.75	-1.1	V
t _{rr}	Reverse Recovery Time	I _F =-1A, V _R =0V	-	12	-	nS
Q _{rr}	Reverse Recovery Charge	dI _F /dt=100A/μs	-	7	-	nC

Note ④ : Pulse test (pulse width≤300us, duty cycle≤2%).

Note ⑤ : Guaranteed by design, not subject to production testing.

Dual P-Channel Typical Characteristics



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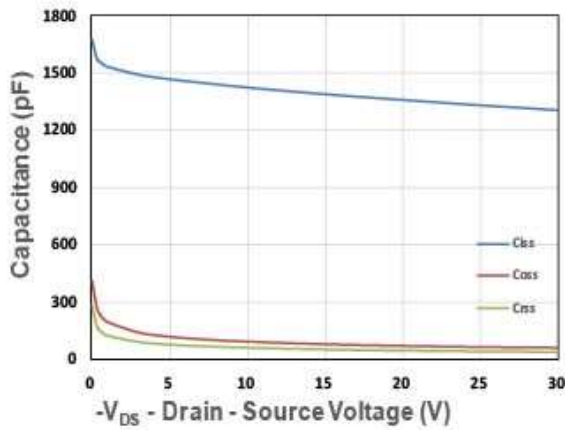


Figure 7. Capacitance

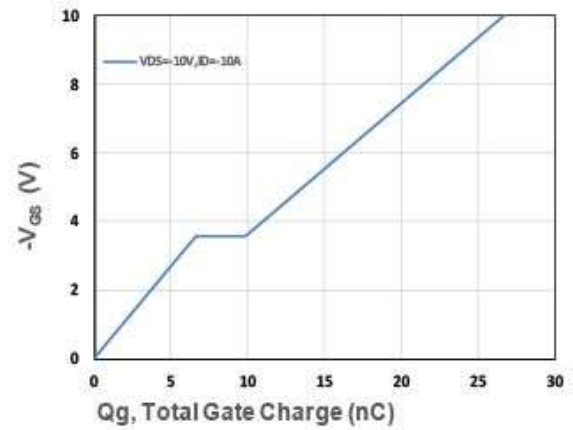


Figure 8. Gate Charge Characteristics

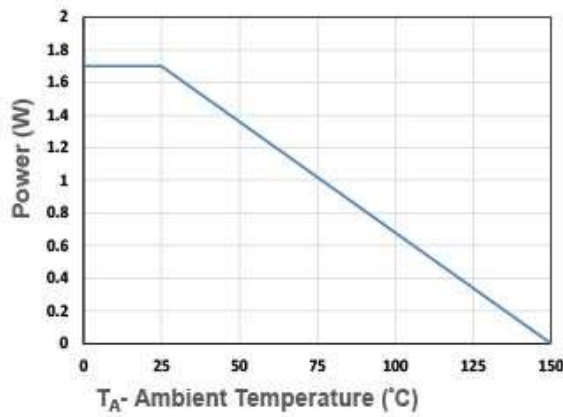


Figure 9. Power Dissipation

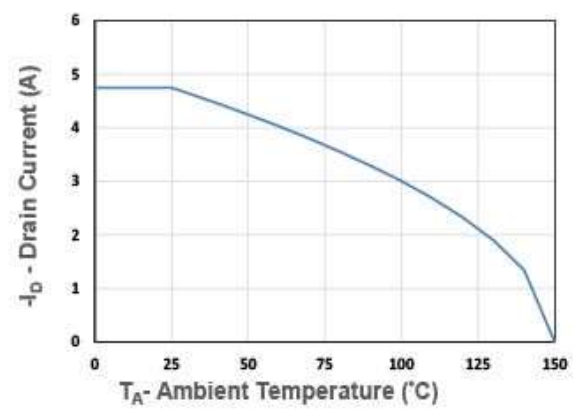


Figure 10. Drain Current

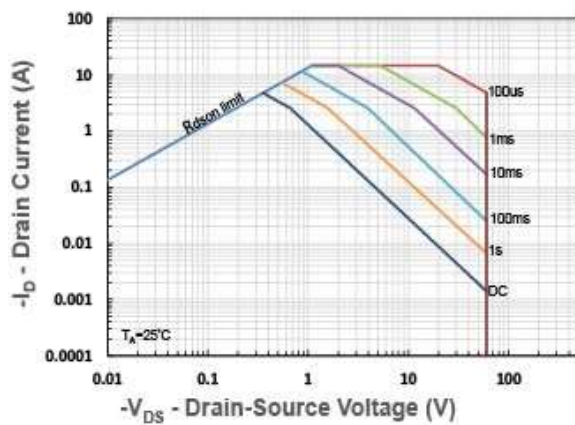


Figure 11. Safe Operating Area

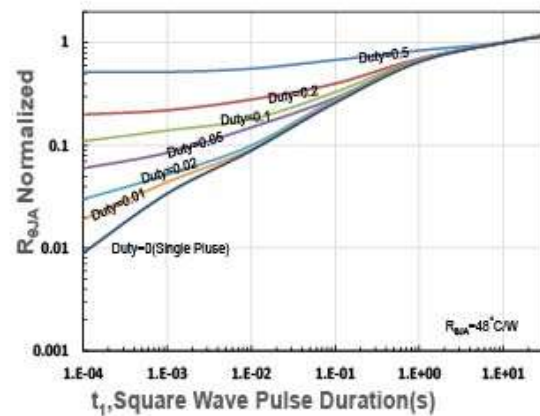


Figure 12. $R_{\theta JA}$ Transient Thermal Impedance