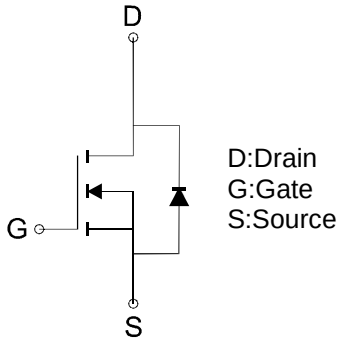
N-Channel 75V MOSFET

B_{VDSS}=75V ,
$R_{DS(ON)}$ ≦9mΩ@V_{GS}=10V
I_D=85A

Features

- 100% Avalanched Tested
- Low On-Resistance
- Trench Process Technology
- Fast Switching
- 175℃ Operation Temperature
- Marking: LTP85N07
- Qualified to AEC-Q101 Rev_C
- Weight: 1.877g
- RoHS Compliant

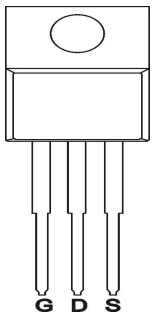


N-Channel MOSFET

Application

- E-bike Appliances
- Motor / Fan Driver
- SMPS Appliances
- High Power System

(TO-220AB)
Top View



Absolute Maximum Ratings (T_A=25℃ Unless Otherwise Noted)

PARAMETER		SYMBOL	VALUE	UNIT
Drain-Source Voltage		V_{DSS}	75	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_C=25℃	I_D	85	A
	T_C=100℃		77	
Pulsed Drain Current[2]		I_{DM}	340	A
Power Dissipation	T_C=25℃	P_D	150	W
Single Pulsed Avalanche Energy[3]		E_{AS}	287	mJ
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to175	℃

Thermal Characteristics

PARAMETER	SYMBOL	TYP	UNIT
Thermal Resistance Junction-to-Case	R_{thJ_c}	1.0	℃ /W
Thermal Resistance Junction-to-Ambient	R_{thJ_A}	62.5	

N-Channel 75V MOSFET

Electrical Characteristics (T_A =25℃ Unless Otherwise Specified)

PARAMETER	TEST CONDITION	SYMBOL	MIN	TYP	MAX	UNIT
STATIC						
Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=250uA	BV_{DSS}	75	--	--	V
Gate Threshold Voltage	V_{DS}=V_{GS},I_D=250uA	$V_{GS(th)}$	2	--	4	V
Gate-Source Leakage	V_{DS}=0V, V_{GS}=±20V	I_{GSS}	--	--	±100	nA
Zero Gate Voltage Drain Current	V_{DS}=60V,V_{GS}=0V	I_{DSS}	--	--	1	uA
Drain-Source On-Resistance[4]	V_{GS}=10V,I_D=40A	$R_{DS(ON)}$	--	7.2	9	mΩ
DYNAMIC						
Total Gate Charge	V_{GS}=10V,V_{DS}=37.5V,I_D=80A	Q_g	--	100	--	nC
Gate-Source Charge		Q_{gs}	--	20.5	--	
Gate-Drain Charge		Q_{gd}	--	40.5	--	
Input Capacitance	V_{GS}=0V,V_{DS}=25V, F=1MHz	C_{iss}	--	4600	--	pF
Output Capacitance		C_{oss}	--	380	--	
Reverse Transfer Capacitance		C_{rss}	--	200	--	
Turn-On Delay Time	V_{GS} = 10V, V_{DS} = 37.5V, R_G = 4.7Ω, I_D=40A	$t_{d(on)}$	--	22.5	--	nS
Turn-On Rise Time		t_r	--	47	--	
Turn-Off Delay Time		$t_{d(off)}$	--	74	--	
Turn-Off Fall Time		t_f	--	26	--	
Source-Drain Diode						
Continuous Source Current	Integral reverse PN diode in the MOSFET	I_S	--	--	85	A
Pulsed Source Current		I_{SM}	--	--	340	
Diode Forward voltage	I_{SD}=85A,V_{GS}=0V	V_{SD}	--	--	1.3	V
Reverse Recovery Time	I_F=85A,V_{DD}=54.4V, dI/dt=100A/uS	T_{rr}	--	30	--	nS
Reverse Recovery Charge		Q_{rr}	--	20	--	nC

Notes:

(1). Limited by bonding wire

(2). Pulse width≦300uS, duty cycle≦2%

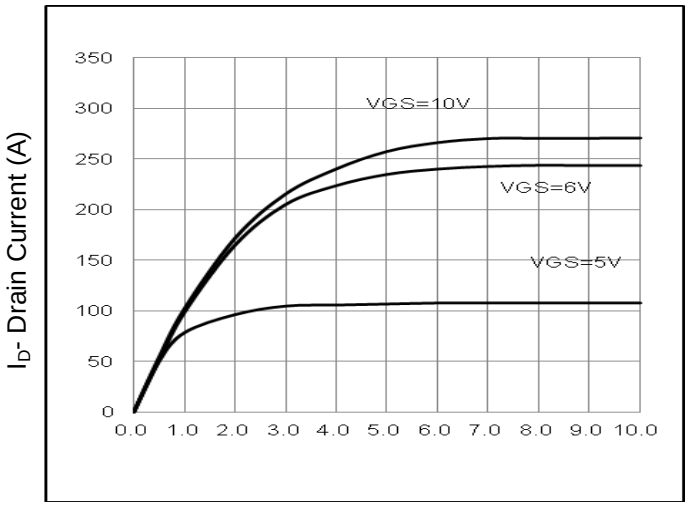
(3). Starting T_j ≧ 25℃ , I_D=47A, V_{DD}=40V

(4). Pulse Test: Pulse width < 400us,duty cycle ≦2%

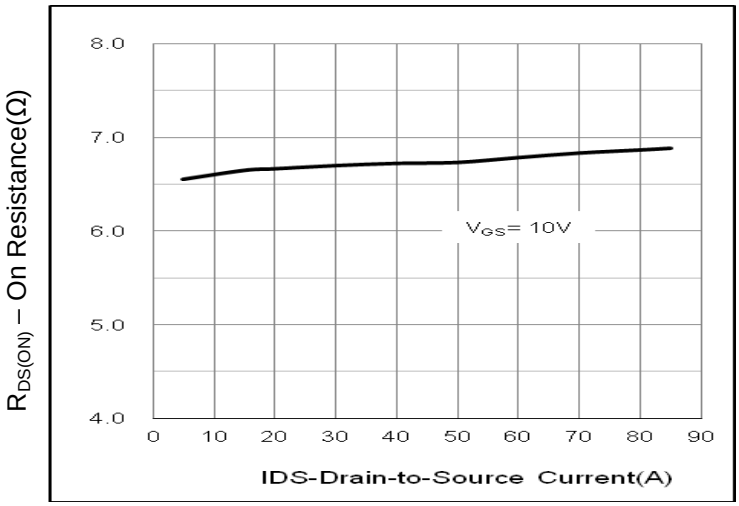
(5). LiteON Semiconductor reserves the right to improve product design, functions and reliability without notice

N-Channel 75V MOSFET

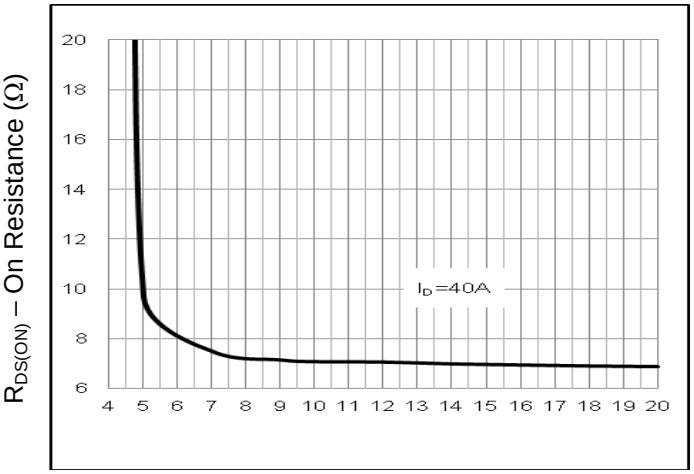
Output Characteristics



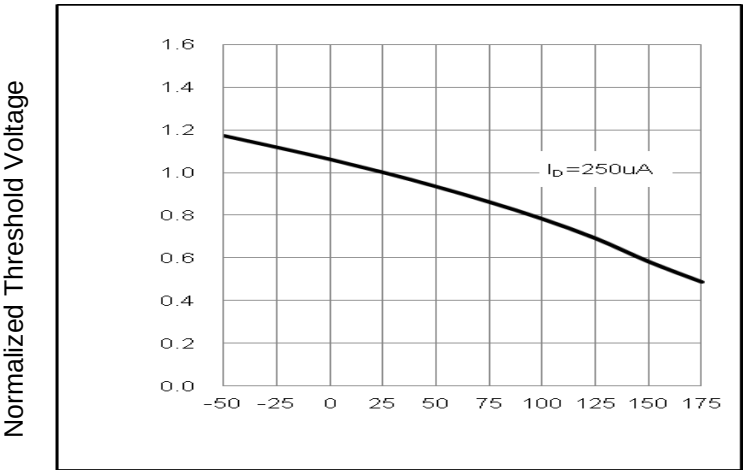
Drain – Source On Resistance



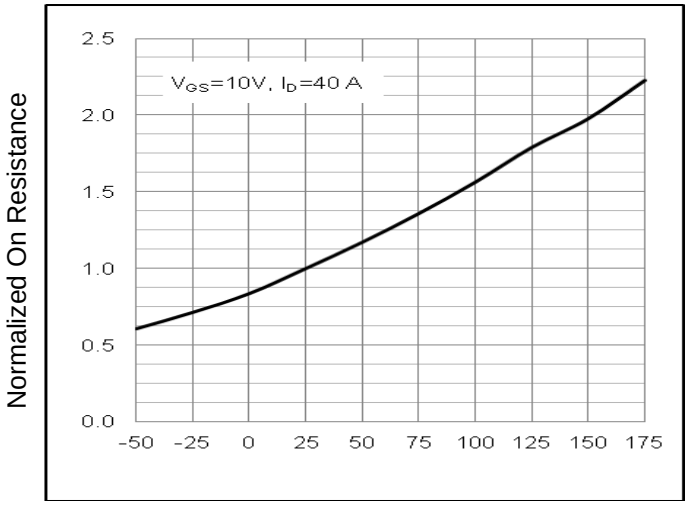
Transfer Characteristics



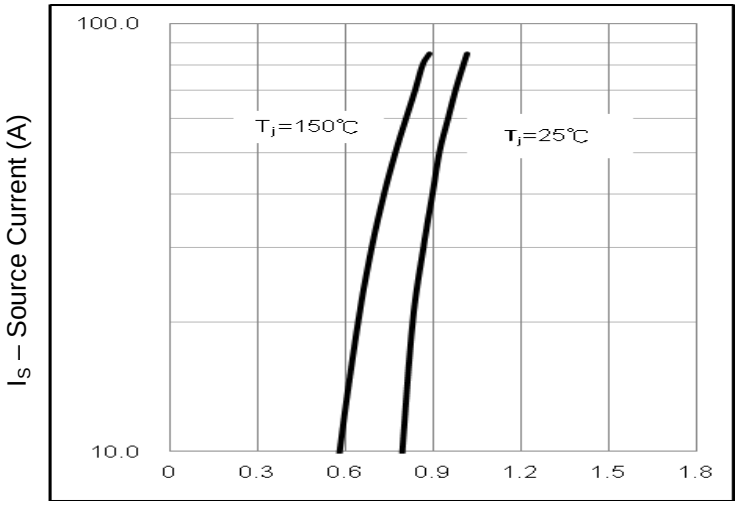
Gate Threshold Voltage



Drain – Source On Resistance

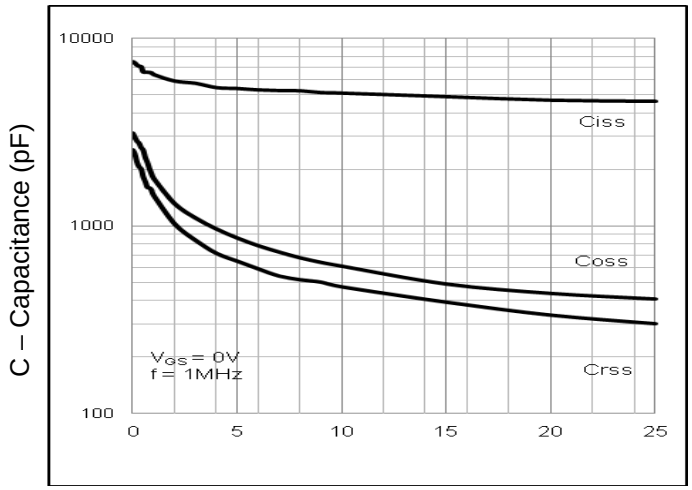


Source – Drain Diode Forward



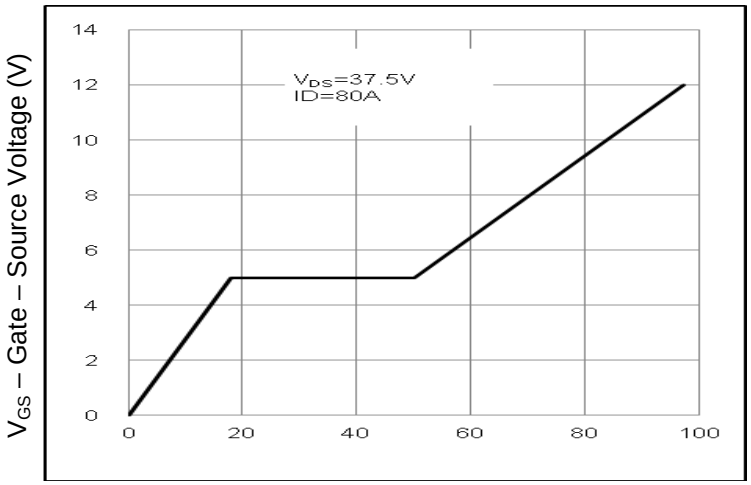
N-Channel 75V MOSFET

Capacitance



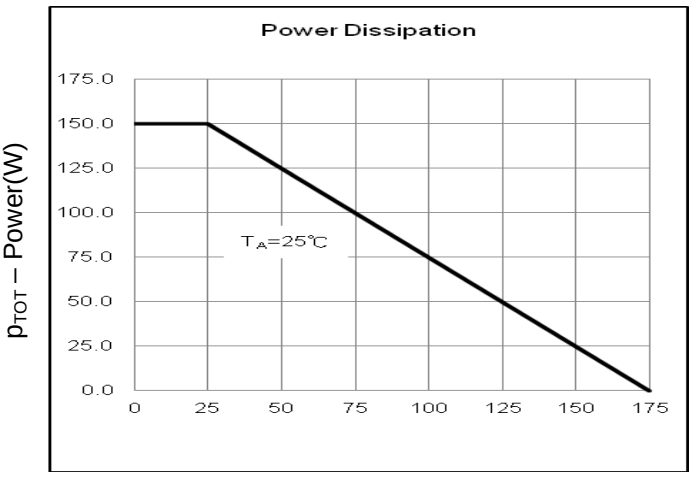
V_{DS} – Drain -Source Voltage (V)

Gate Charge



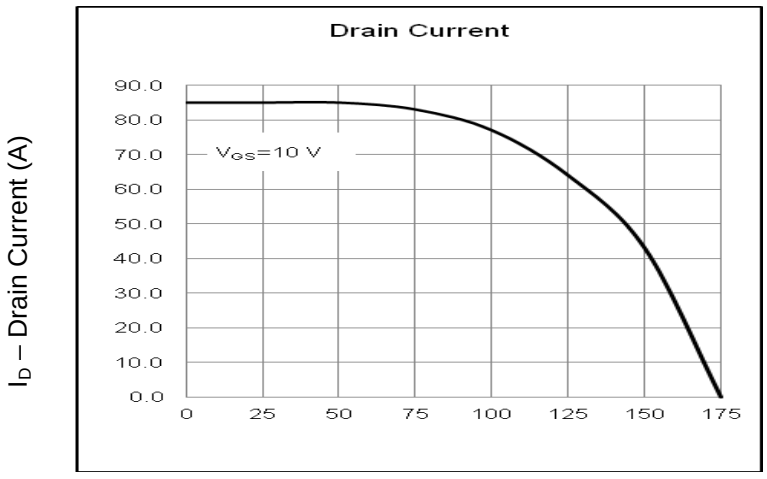
Q_g– Gate Charge (nC)

Power Dissipation



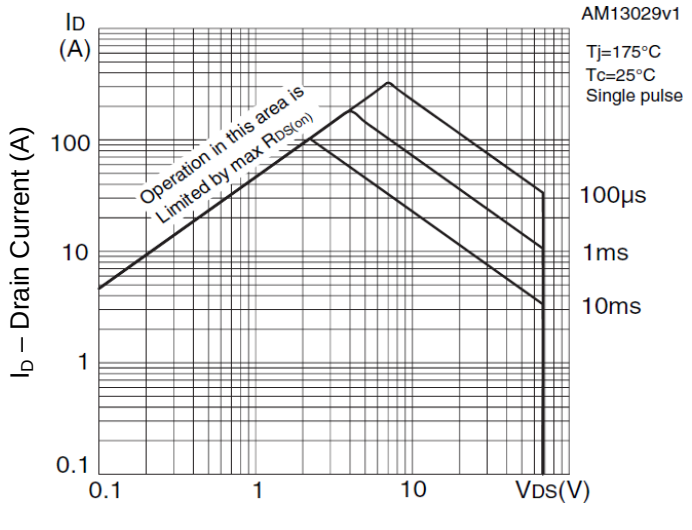
V_{GS} – Gate – Source Voltage (V)

Drain Current



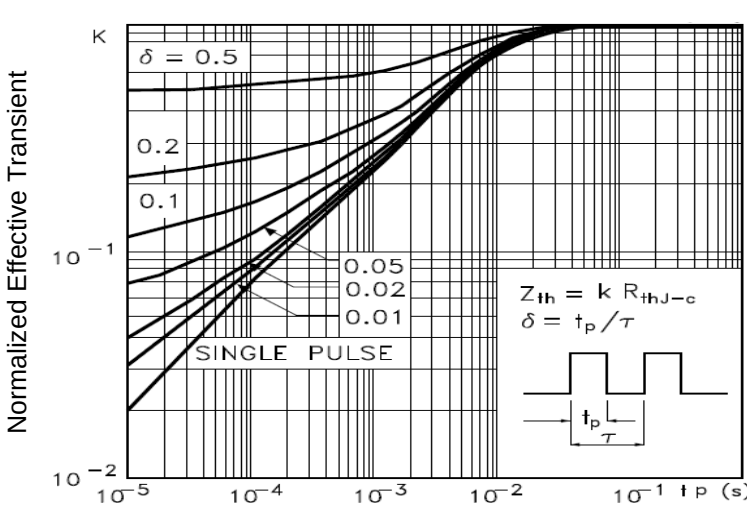
T_J – Junction Temperature (℃)

Safe Operation Area



V_{DS} – Drain – Source Voltage (V)

Thermal Transient Impedance

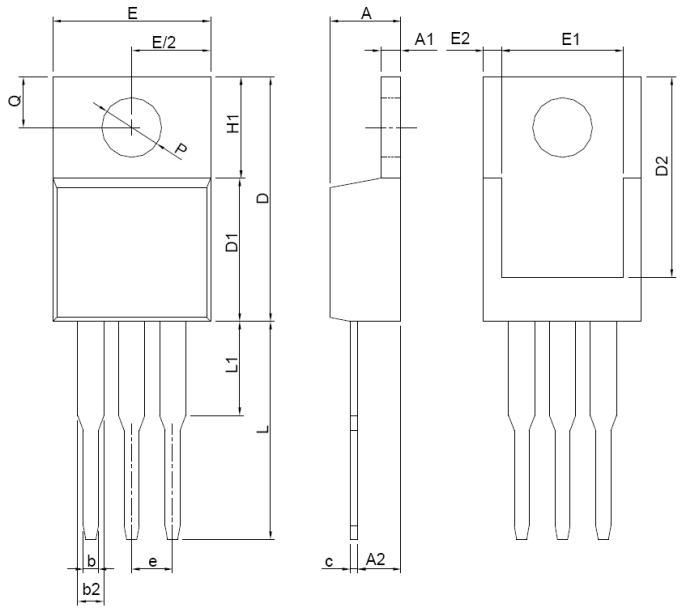


Square Wave Pulse Duration (sec)

N-Channel 75V MOSFET

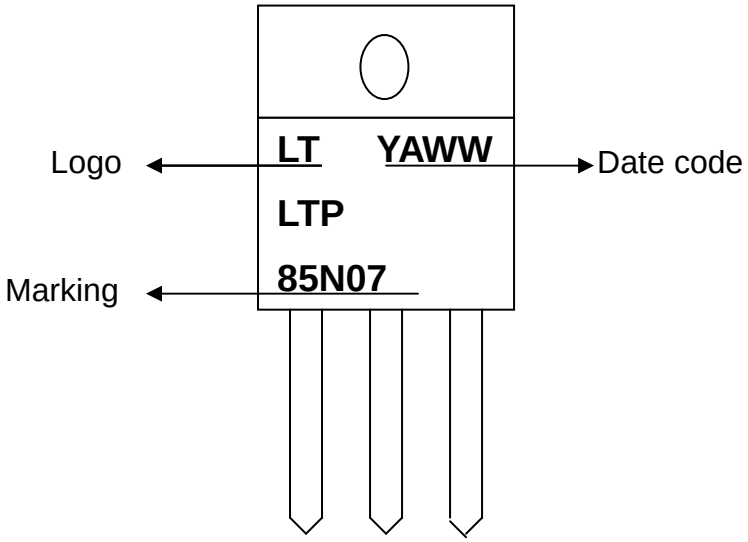
Package Outline Dimension

TO-220AB



TO-220AB		
DIM	MIN	MAX
A	3.56	4.83
A1	0.51	1.40
A2	2.03	2.92
b	0.38	1.02
b2	1.14	1.78
c	0.36	0.61
D	14.22	16.51
D1	8.38	9.02
D2	12.19	12.88
E	9.65	10.67
E1	6.86	8.89
E2	0.76 BSC	
e	2.54 BSC	
H1	5.84	6.86
L	12.70	14.73
L1	6.35 BSC	
P	3.53	4.09
Q	2.54	3.43
All Dimensions in millimeter		

Marking information



Important Notice and Disclaimer

LSC reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.

LSC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does LSC assume any liability for application assistance or customer product design. LSC does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of LSC.

LSC products are not authorized for use as critical components in life support devices or systems without express written approval of LSC