LMN3760EX7F 30V Dual N-Channel MOSFETs

Features

- Low Gate Charge
- ESD Protected
- SOT-563 package design

These devices are particularly suited for low voltage power management, such as smart phone and notebook computer, and low in-line power loss are needed in commercial industrial surface mount applications.

Product Description

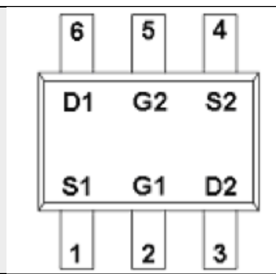
LMN3760E, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

Applications

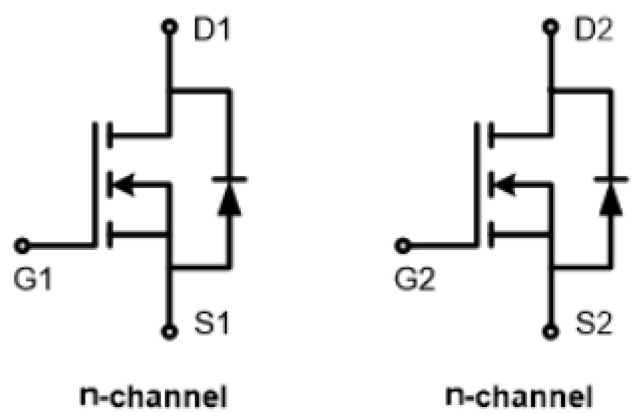
- Power Management in Note book
- Load Switch
- Portable Equipment

Pin Configuration

LMN3760EX7F (SOT-563)



PIN	Description
1	Source1
2	Gate1
3	Drain2
4	Source2
5	Gate2
6	Drain1



Notice: The information in this document is subject to change without notice.

Ordering Information

LMN3760E	X7	F
LFC P/N	PKG code	Pb Free code

Marking Information

0	XW
Part Number	LFC code

Part Number	Package	Part Marking	Quantity
LMN3760EX7F	SOT-563	0XW	3000pcs

Absolute Maximum Ratings

(T_C=25ºC Unless otherwise noted)

Symbol	Parameter	Typical	Unit
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±12	V
I_D	Continuous Drain Current (T_A=25℃)[1]	0.5	A
I_{DM}	Pulsed Drain Current	2	A
P_D	Power Dissipation	0.28	W
T_J	Operating Junction Temperature Range	-55 to +150	℃
T_{STG}	Storage Temperature Range	-55 to +150	℃
$R_{\theta JA}$	Thermal Resistance Junction to ambient[1]	450	℃/W

Notes:
1. Surface mounted on a 1 inch2 FR-4 board with 2oz copper.

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Electrical Characteristics

(T_A=25ºC Unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	30			V
$V_{GS\ (th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	0.5		1.5	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±12V			10	uA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=24V, V_{GS}=0V			100	nA
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=10V, I_D=0.5A		365	600	mΩ
		V_{GS}=4.5V, I_D=0.4A		440	650	
		V_{GS}=2.5V, I_D=0.3A		670	1200	
g_{FS}	Forward Transconductance	V_{DS}=10V, I_D=0.5A		1.25		S
V_{SD}	Diode Forward Voltage	I_S=0.25A, V_{GS}=0V			1.1	V
Dynamic						
Q_g	Total Gate Charge	V_{DS}=15V, V_{GS}=10V, I_D=0.5A		1.5		nC
Q_{gs}	Gate-Source Charge			6		
Q_{gd}	Gate-Drain Charge			5.3		
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V, f=1MHz		1.5		pF
C_{oss}	Output Capacitance			6		
C_{rss}	Reverse Transfer Capacitance			5.3		
$t_{d(on)}$	Turn-On Time	V_{DD}=15V, I_D=0.5A, V_{GS}=10V, R_G=12.5Ω		1.5		ns
t_r				6		
$t_{d(off)}$	Turn-Off Time			5.3		
t_f				1.5		

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Typical Performance Characteristics

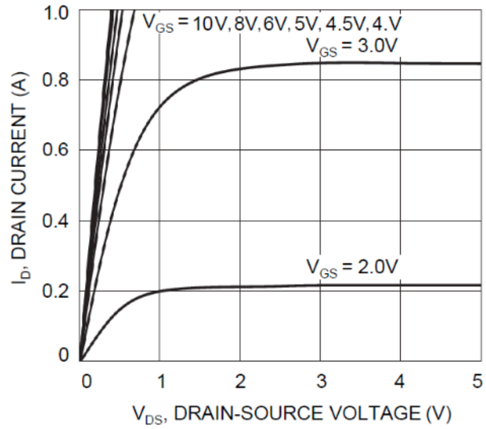

Fig. 1 Typical Output Characteristics

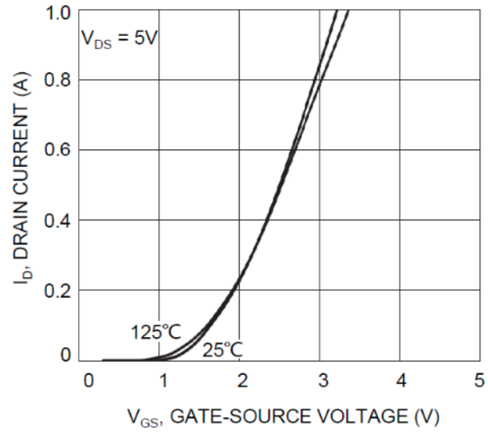

Fig. 2 Typical Transfer Characteristics

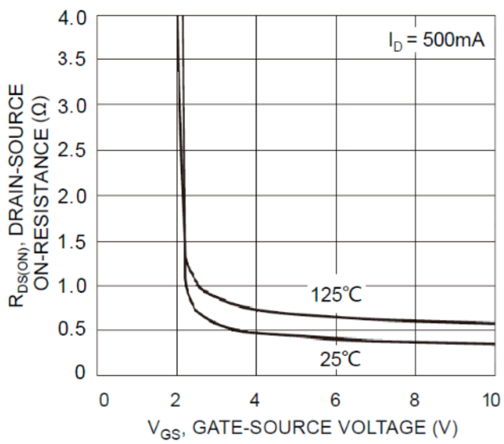

Fig. 3 Typical On-Resistance vs. V_{GS}

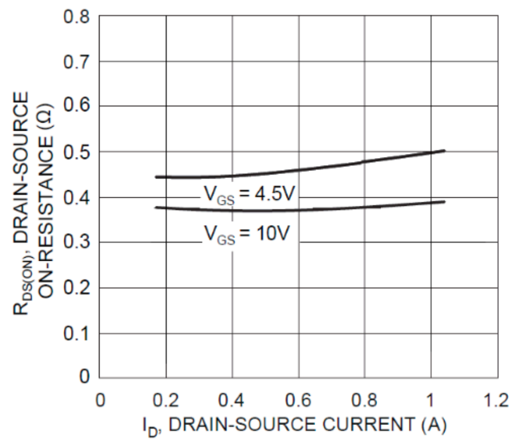

Fig. 4 Typical On-Resistance vs. I_D

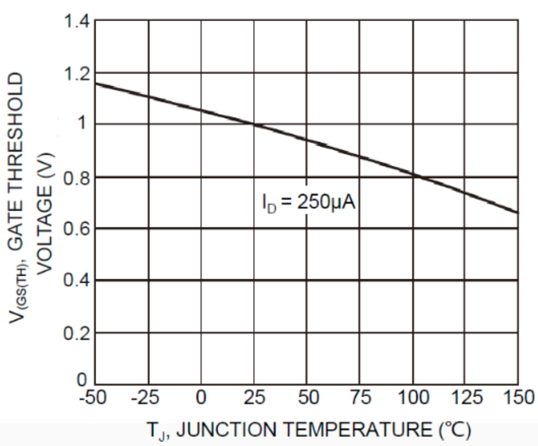

Fig. 5 Normalized Threshold Voltage

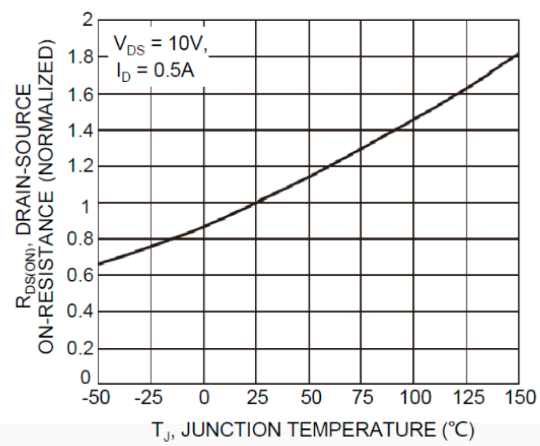

Fig 6. On-Resistance Variation with T_J

Typical Performance Characteristics (Cont.)

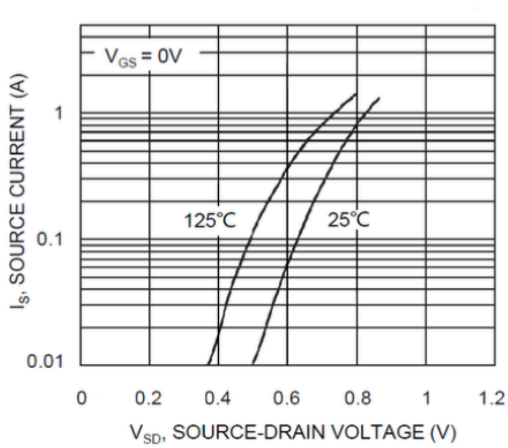

Fig. 7 Diode Forward Voltage vs. Current

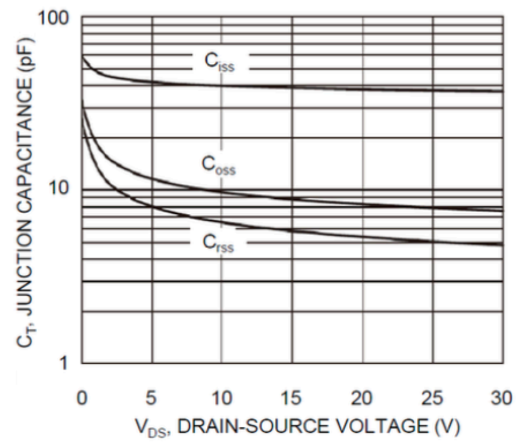

Fig. 8 Typical Capacitance

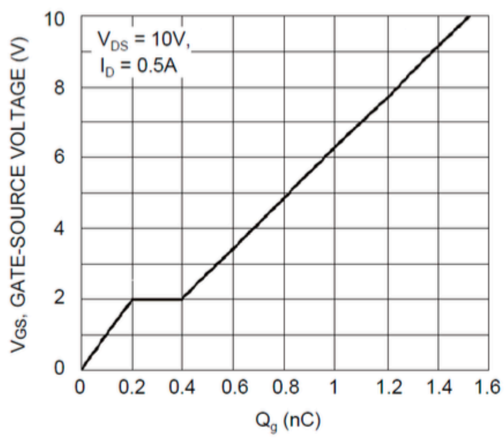

Fig. 9 Gate Charge

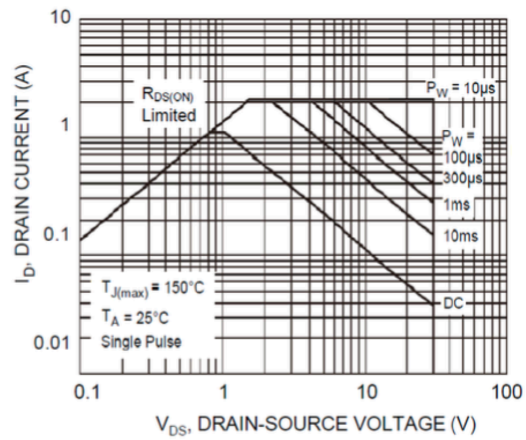

Fig. 10 Safe Operation Area

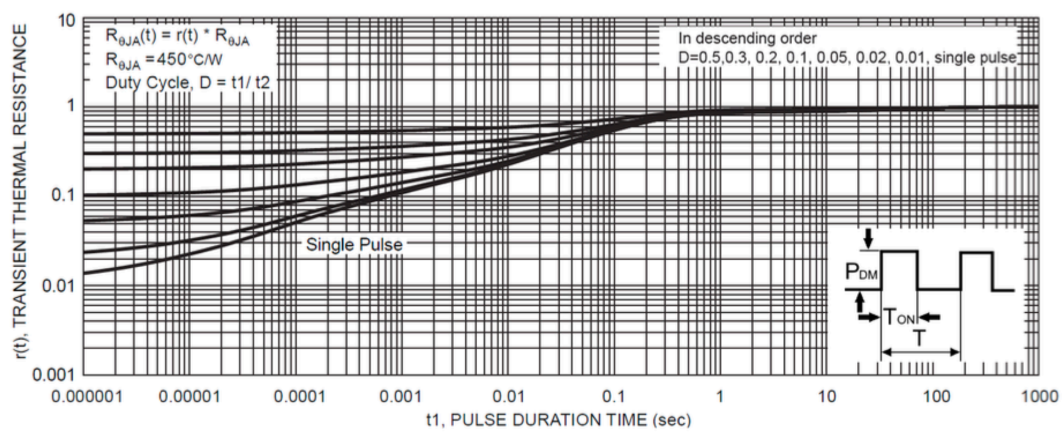

Fig. 11 Transient Thermal Response

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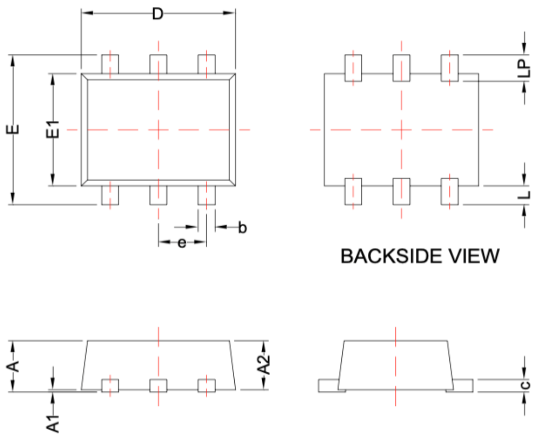
Package Dimension

SOT-563



DIMENSION D AND E1 DO NOT INCLUDE MOLD FLASH,TIE BAR BURRS，GATE BURRS，AND INTERLEAD FLASH,NOT INCLUDING ANY MISMATCH BETWEEN THE TOP AND BOTTOM OF THE PLASTIC BODY

Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.45	0.65	0.018	0.026
A1	0.00	0.10	0.000	0.004
A2	0.45	0.60	0.018	0.024
b	0.15	0.30	0.006	0.012
c	0.07	0.20	0.003	0.008
D	1.50	1.70	0.059	0.067
E	1.50	1.70	0.059	0.067
E1	1.10	1.30	0.043	0.051
e	0.50 BSC		0.020 BSC	
L	0.10	0.30	0.004	0.012
LP	0.16	0.40	0.006	0.016

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