

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.

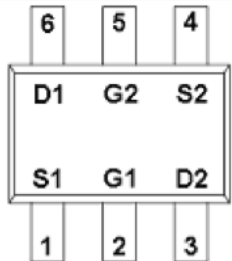
Product Description

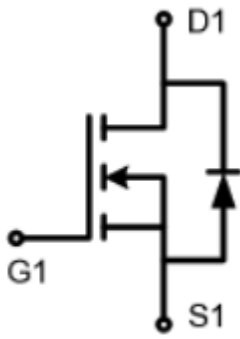
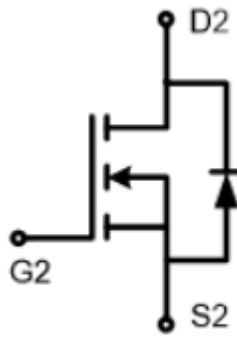
LMN3760E, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

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

Ordering Information

<u>LMN3760E</u>	<u>X7</u>	<u>E</u>
LFC P/N	PKG code	Pb Free code

Marking Information

<u>0</u>	XW
Part Number	LFC code

Part Number	Package	Part Marking	Quantity
LMN3760EX7F	SOT-563	<u>0</u> XW	3000pcs

Absolute Maximum Ratings

(T_C=25°C 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°C) 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	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
R _{θJA}	Thermal Resistance Junction to ambient ¹	450	°C/W

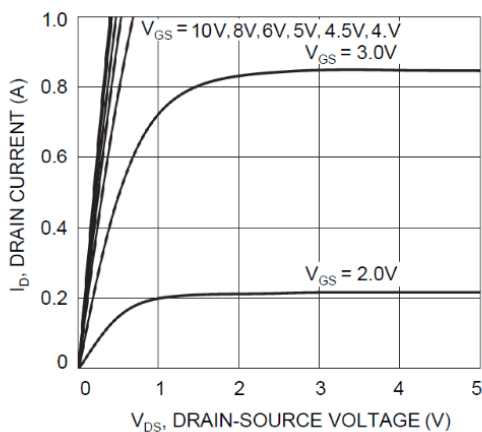
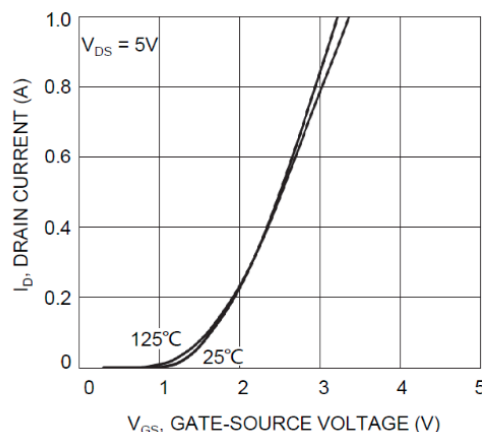
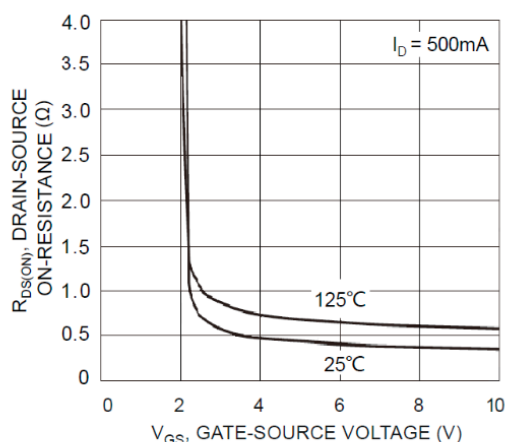
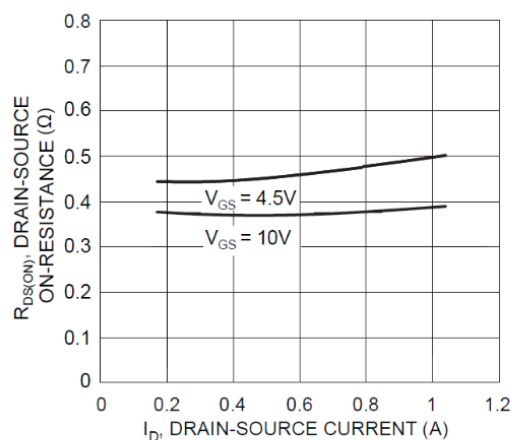
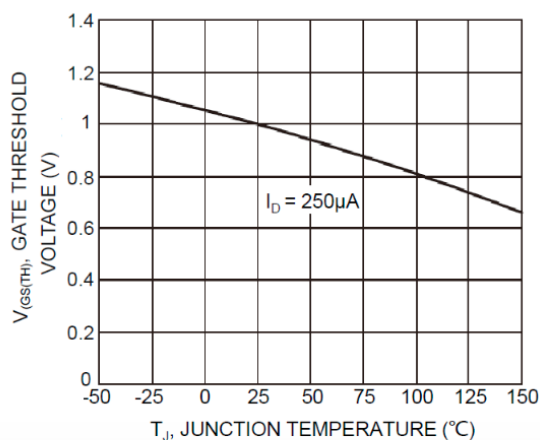
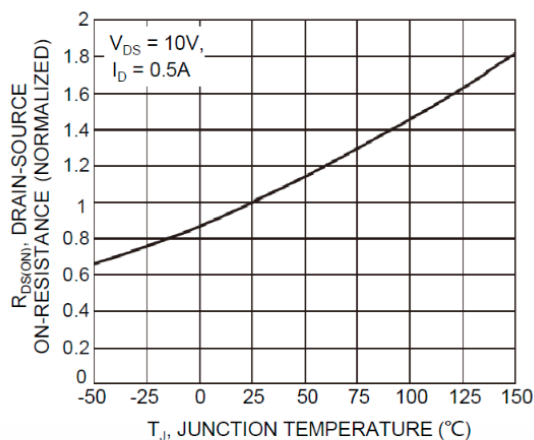
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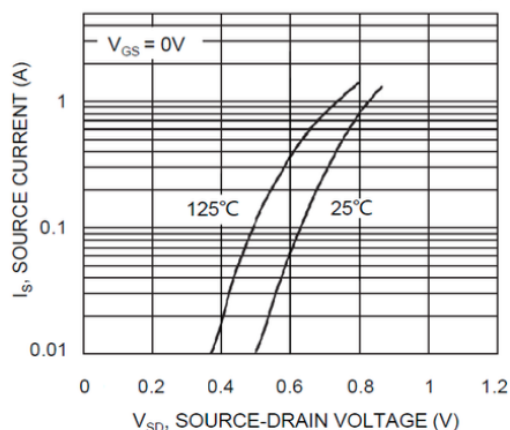
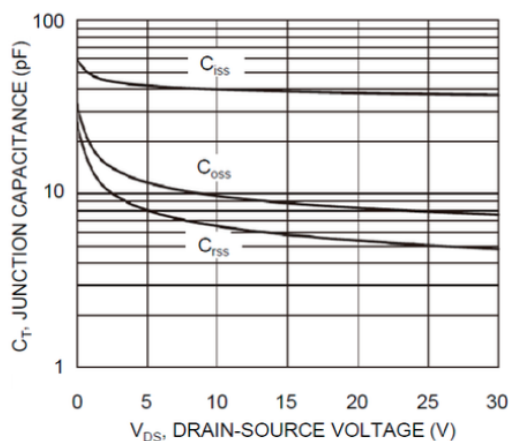
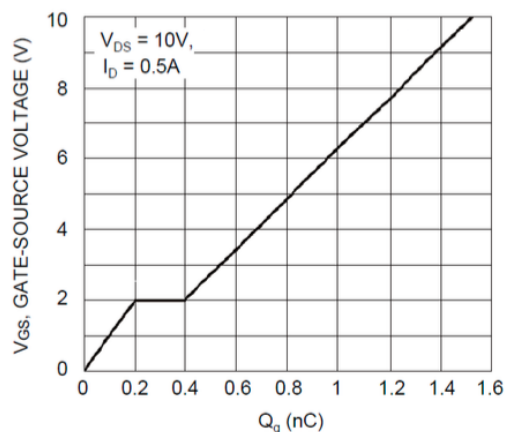
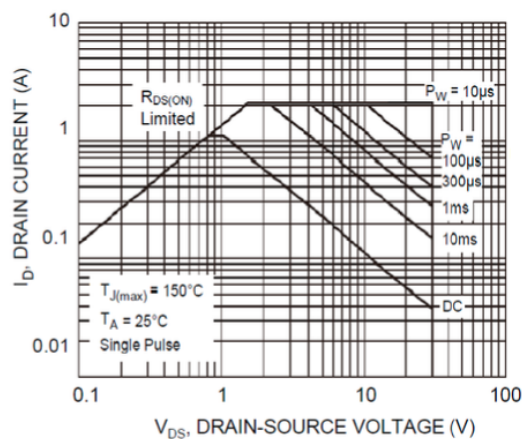
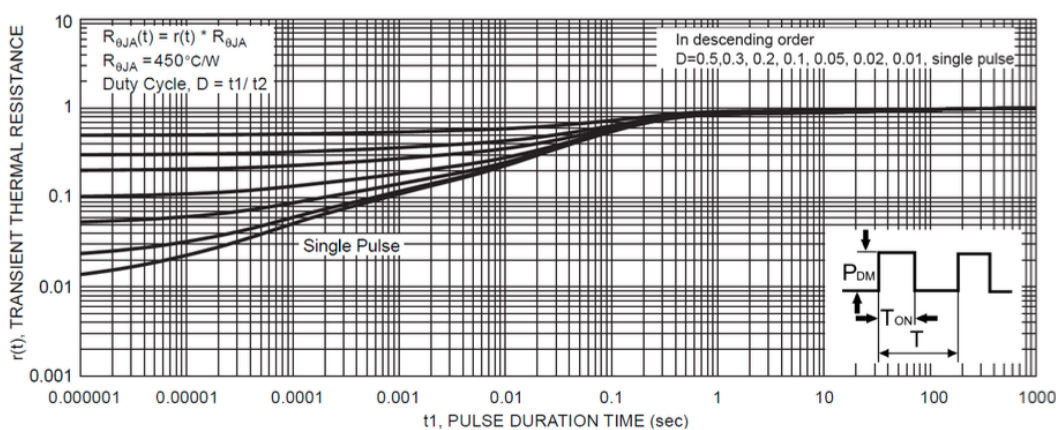
1. Surface mounted on a 1 inch² FR-4 board with 2oz copper.

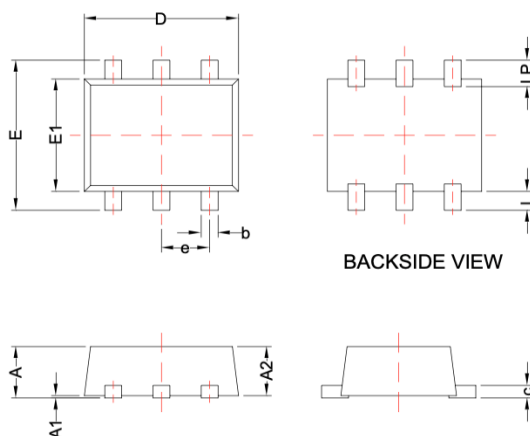
Electrical Characteristics
(T_A=25°C Unless otherwise noted)

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	m Ω
		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		

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

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