

LMN3760EX6F 30V Dual N-Channel MOSFETs

Features

- Low Gate Charge
- ESD Protected
- SOT-363 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.

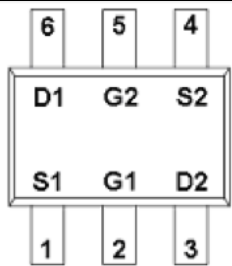
Product Description

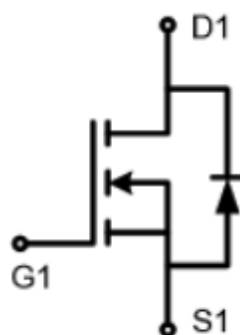
LMN3760E, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent RDS(ON), low gate charge.

Applications

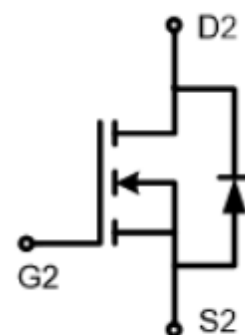
- Power Management in Note book
- Load Switch
- Portable Equipment

Pin Configuration

LMN3760EX6F (SOT-363)	
	
PIN	Description
1	Source1
2	Gate1
3	Drain2
4	Source2
5	Gate2
6	Drain1



n-channel



n-channel

Ordering Information

<u>LMN3760E</u>	<u>X6</u>	<u>E</u>
LFC P/N	PKG code	Pb Free code

Marking Information

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

Part Number	Package	Part Marking	Quantity
LMN3760EX6F	SOT-363	<u>0</u> WM	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	0.59	A
I _{DM}	Pulsed Drain Current ²	2.2	A
P _D	Power Dissipation	0.31	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	400	°C/W

Notes:

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

2. Pulse width limited by maximum junction temperature, Pulse Width≤300μs, Duty Cycle≤1%.

Electrical Characteristics

LMN3760EX6F

(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		325	600	m Ω
		V _{GS} =4.5V, I _D =0.4A		400	650	
		V _{GS} =2.5V, I _D =0.3A		610	1200	
g _{FS}	Forward Transconductance	V _{DS} =10V, I _D =0.5A		1.1		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

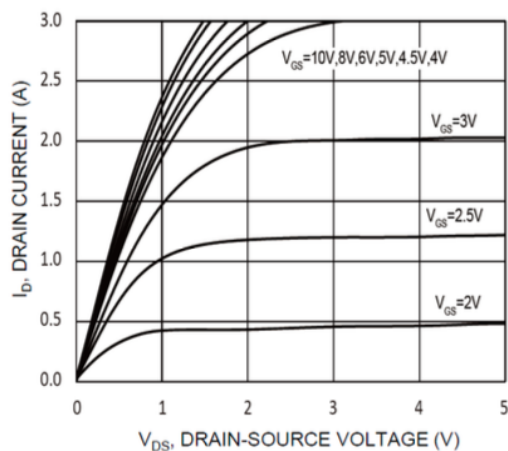


Fig. 1 Typical Output Characteristics

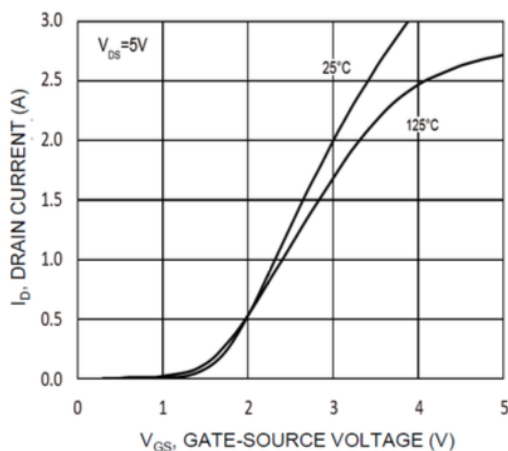


Fig. 2 Typical Transfer Characteristics

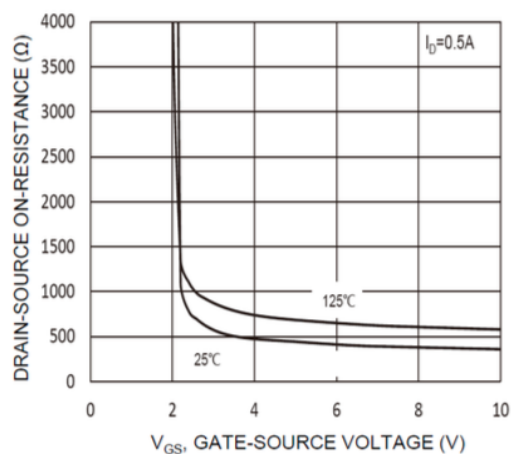


Fig. 3 Typical On-Resistance vs. V_{GS}

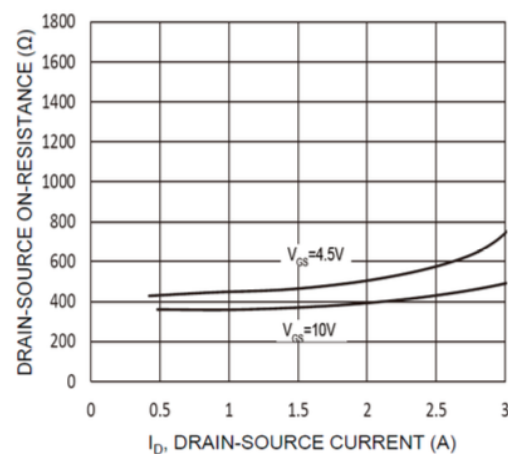


Fig. 4 Typical On-Resistance vs. I_D

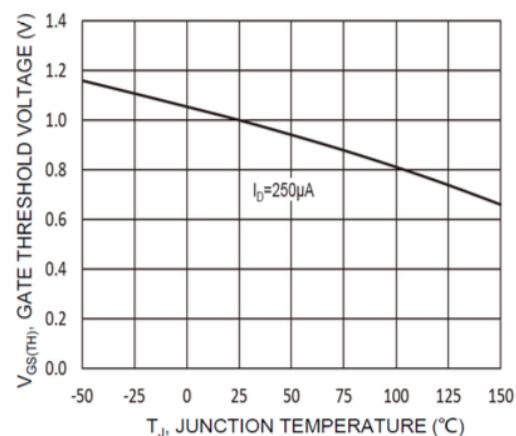


Fig. 5 Normalized Threshold Voltage

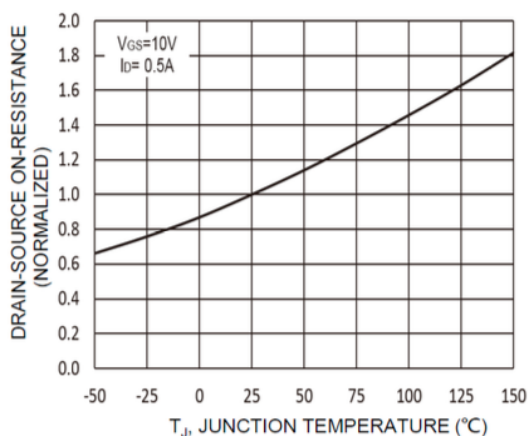


Fig. 6. On-Resistance Variation with T_J

Typical Performance Characteristics (Cont.)

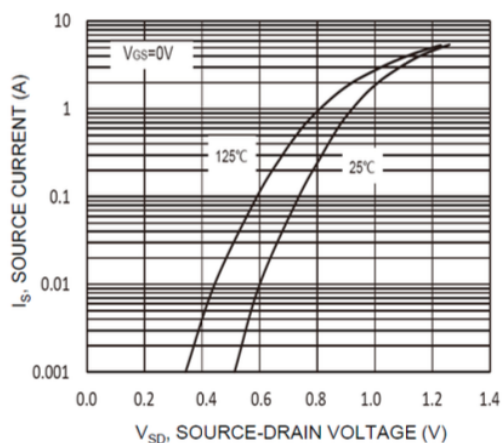


Fig. 7 Diode Forward Voltage vs. Current

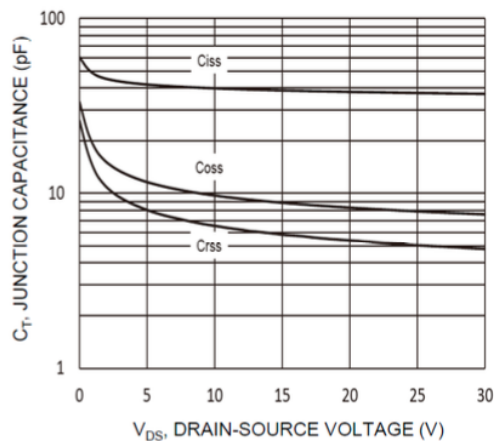


Fig. 8 Typical Capacitance

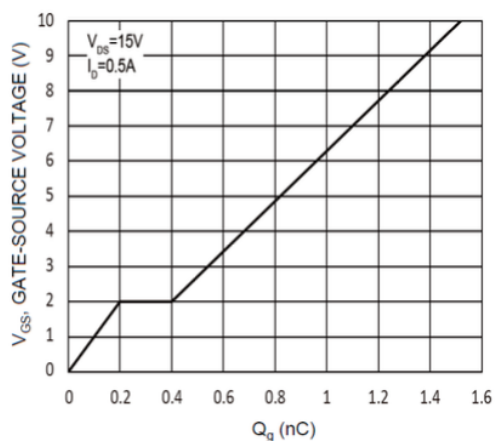


Fig. 9 Gate Charge

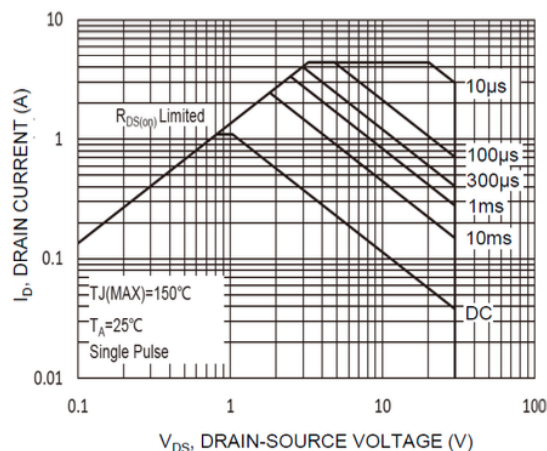


Fig. 10 Safe Operation Area

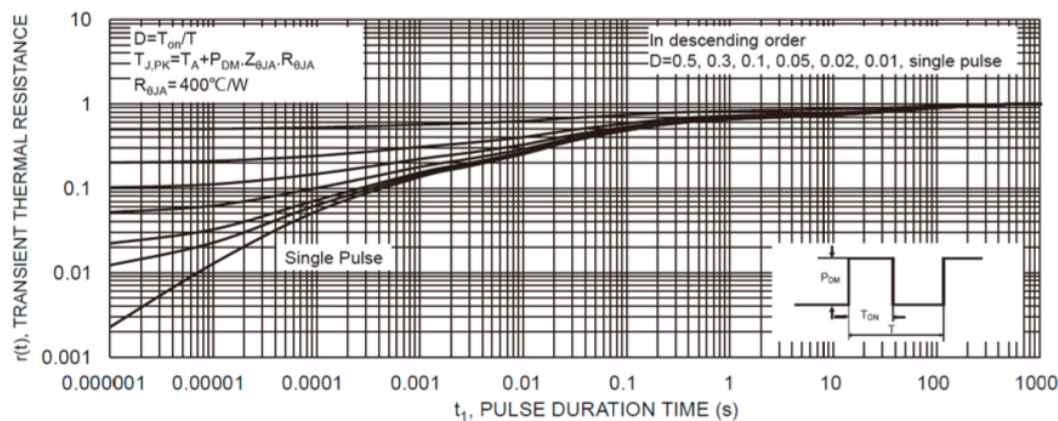
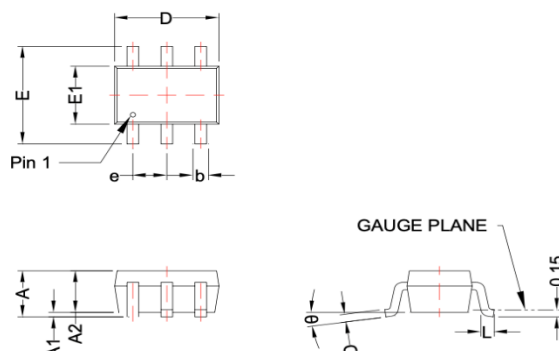


Fig. 11 Transient Thermal Response

Package Dimension
SOT-363


THE D DIMENSION DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS, MOLD FLASH, PROTRUSIONS OR GATE BURRS SHALL NOT EXCEED 0.2mm END. THE E1 DIMENSION DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION, INTERLEAD FLASH OR PROTRUSION SHALL NOT 0.20mm PER SIDE.

Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.80	1.10	0.031	0.043
A1	0.00	0.10	0.000	0.004
A2	0.70	1.00	0.028	0.039
b	0.15	0.30	0.006	0.012
c	0.08	0.25	0.003	0.010
D	1.80	2.20	0.071	0.087
E	1.80	2.40	0.071	0.094
E1	1.15	1.45	0.0845	0.053
e	0.650 BSC		0.026 BSC	
L1	0.26	0.45	0.010	0.018
θ	0°	8°	0°	8°