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 $R_{DS(ON)}$, 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

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Ordering Information

LMN3760E	X6	F
LFC P/N	PKG code	Pb Free code

Marking Information

0	WM
Part Number	LFC code

Part Number	Package	Part Marking	Quantity
LMN3760EX6F	SOT-363	0WM	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]	0.59	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	℃
T_{STG}	Storage Temperature Range	-55 to +150	℃
$R_{\theta JA}$	Thermal Resistance Junction to ambient[1]	400	℃/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

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(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		325	600	mΩ
		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		

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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

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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-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	0º	8º	0º	8º

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