LMN3660EAF 30V N-Channel Enhancement Mode MOSFET

Features

- Low Gate Charge
- ESD Protected
- SOT-723 package design

Product Description

LMN3660E, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent RDS(ON), low gate charge.

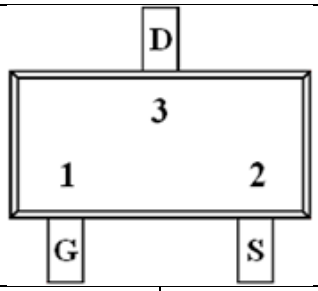
These devices are particularly suited for low voltage power management, such as smart phone and notebook computer, and low in-line power loss are needed in commercial industrial surface mount applications.

Applications

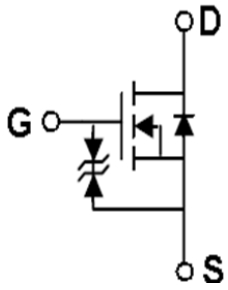
- Power Management in Note book
- Portable Equipment
- Load Switch

Pin Configuration

LMN3660EAF (SOT-723)



Pin	Description
1	Gate
2	Source
3	Drain



Ordering Information

Ordering Information					
Part Number	P/N	PKG code	Pb Free code	Package	Quantity
LMN3660EAF	LMN3660E	A	F	SOT-723	8000 PCS

Marking Information

Marking Information		
Part Marking	Part Number	LFC code
0XW	0	XW

Absolute Maximum Ratings

(T_C=25ºC Unless otherwise noted)

Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		30	V
V_{GSS}	Gate-Source Voltage		±12	V
I_D	Continuous Drain Current	T_A=25℃	0.37	A
I_{DM}	Pulsed Drain Current[1]		1.0	A
P_D	Power Dissipation		0.15	W
T_J	Operating Junction Temperature		-55 to +150	℃
T_{STG}	Storage Temperature Range		-55 to +150	℃
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient[1]		833	℃/W

Electrical Characteristics

(T_C=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	
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
		V_{DS}=24V, V_{GS}=0V T_J=85ºC			30	uA
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=10V, I_D=0.5A		350	600	mΩ
		V_{GS}=4.5V, I_D=0.4A		400	650	
		V_{GS}=2.5V, I_D=0.3A		650	1200	
g_{FS}	Forward Transconductance	V_{DS}=10V, I_D=0.5A		1.2		S
V_{SD}	Diode Forward Voltage	I_S=0.5A, V_{GS}=0V			1.35	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			0.2		
Q_{gd}	Gate-Drain Charge			0.2		
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V, f=1MHz		39		pF
C_{oss}	Output Capacitance			9		
C_{rss}	Reverse Transfer Capacitance			6		
$t_{d(on)}$	Turn-On Time	V_{DD}=15V, I_D=0.5A, V_{GS}=10V, R_G=2.5Ω		5.3		ns
t_r				16		
$t_{d(off)}$	Turn-Off Time			20		
t_f				18		

Typical Performance Characteristics

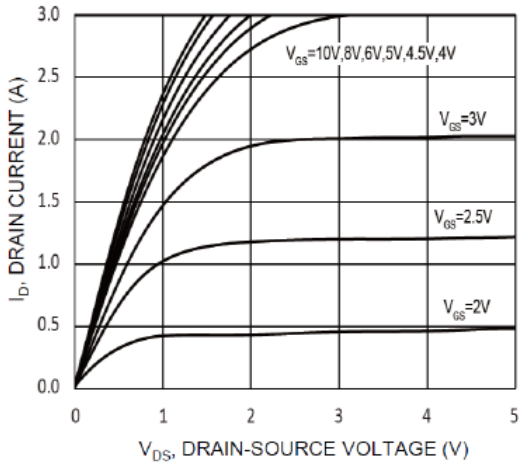


Fig. 1 Typical Output Characteristics

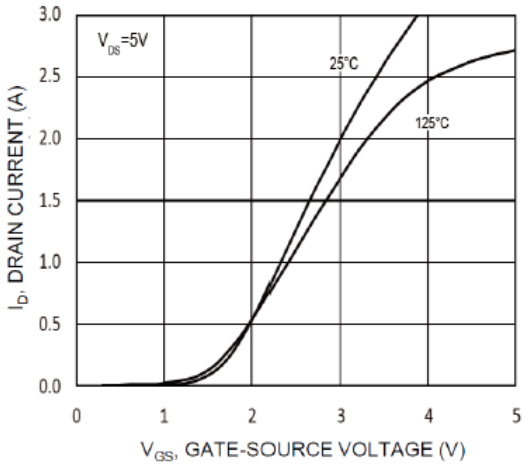


Fig. 2 Typical Transfer Characteristics

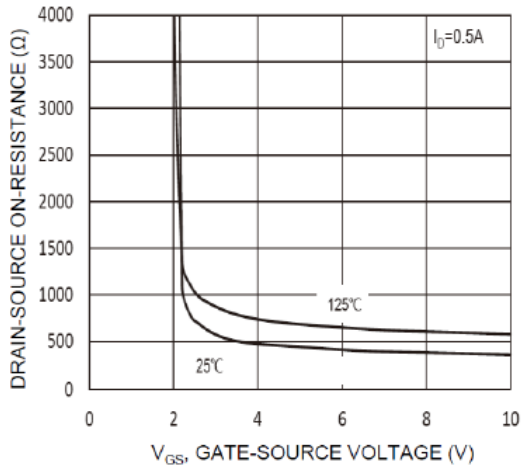


Fig. 3 Typical On-Resistance vs. V_{GS}

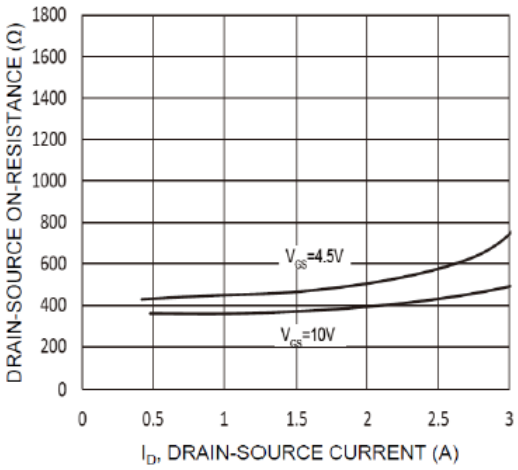


Fig. 4 Typical On-Resistance vs. I_D

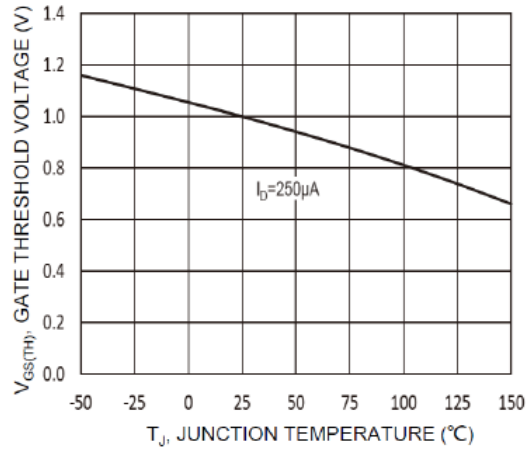


Fig. 5 Normalized Threshold Voltage

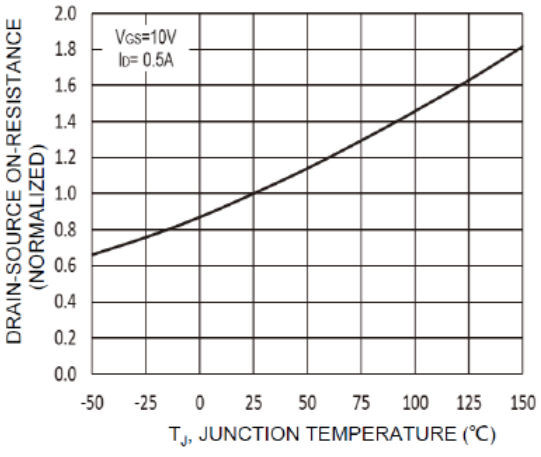


Fig 6. On-Resistance Variation with T_J

Typical Performance Characteristics(continue)

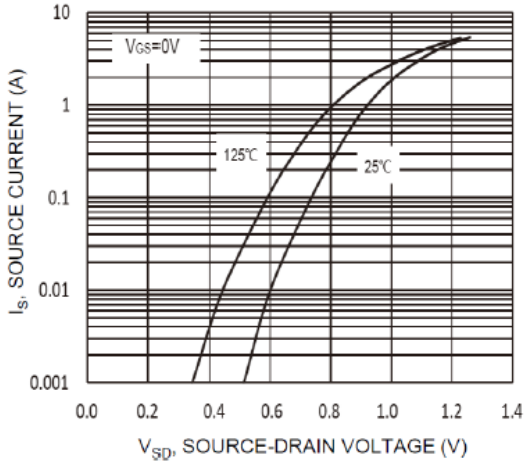


Fig. 7 Diode Forward Voltage vs. Current

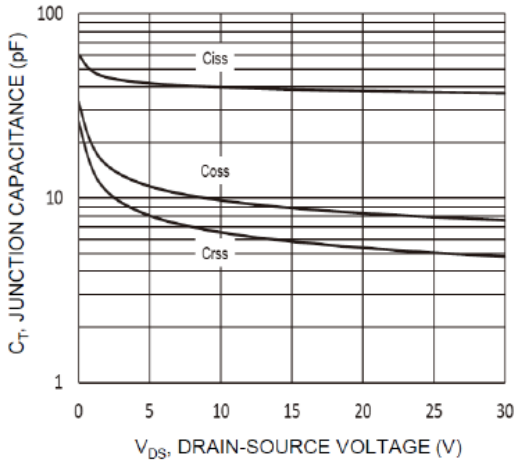


Fig. 8 Typical Capacitance

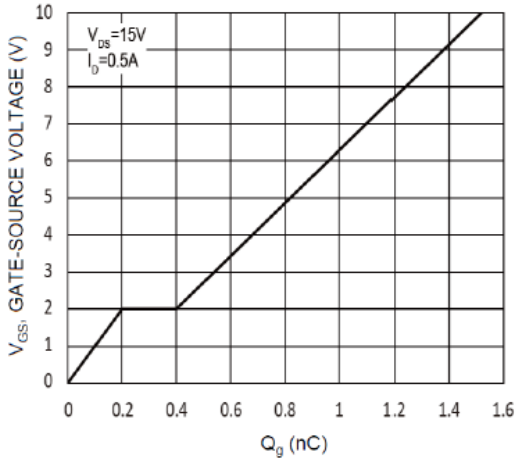


Fig. 9 Gate Charge

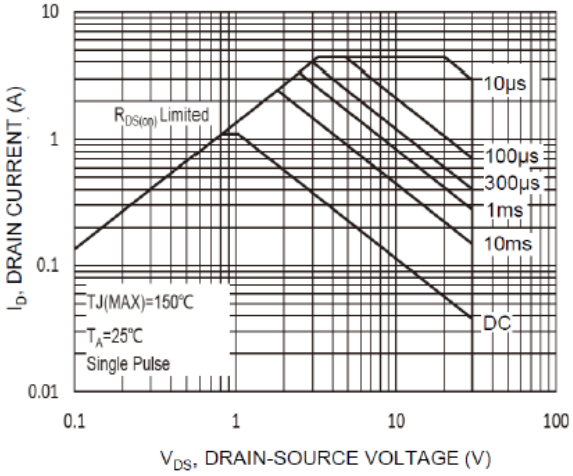


Fig. 10 Safe Operation Area

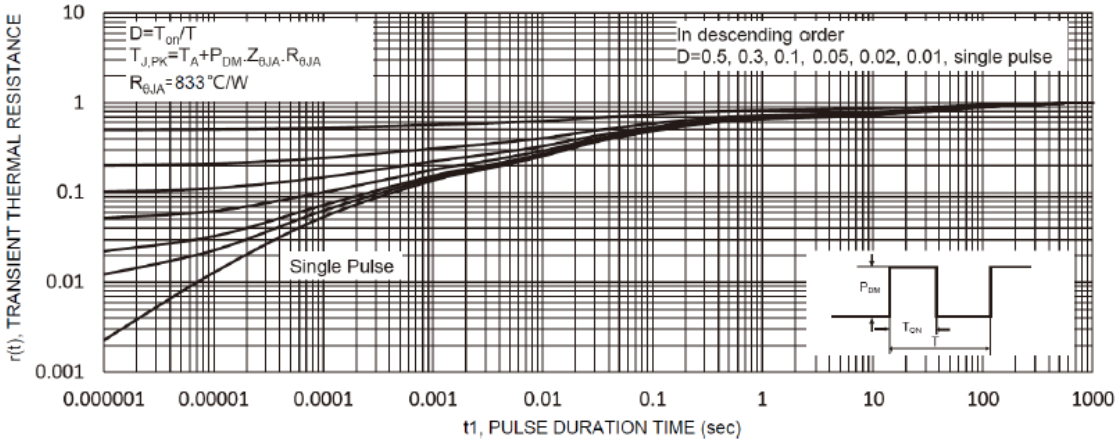
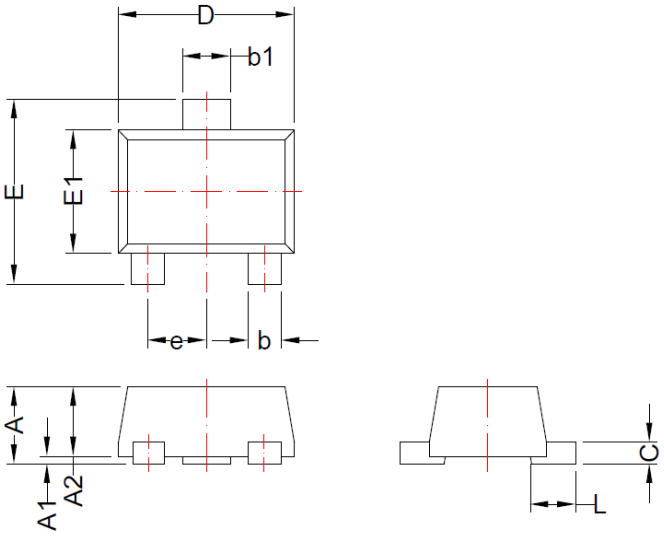


Fig. 11 Transient Thermal Response

Package Dimension:

SOT-723



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.45	0.55	0.018	0.022
A1	0.00	0.10	0.000	0.004
A2	0.45	0.55	0.018	0.022
b	0.15	0.30	0.006	0.012
b1	0.25	0.40	0.010	0.016
c	0.08	0.20	0.003	0.008
D	1.10	1.30	0.043	0.051
E	1.10	1.30	0.043	0.051
E1	0.70	0.90	0.028	0.035
e	0.4 BSC		0.016 BSC	
L	0.2	0.42	0.008	0.017

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