

LMN3112XF 30V N-Channel MOSFET

Features

- 30V, 11.7A, $R_{DS(ON)}=12m\Omega@V_{GS}=10V$
- Improved dv/dt capability
- Fast switching
- 100% EAS guaranteed
- Green Device Available

been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode.

These devices are well suited for high efficiency fast switching applications.

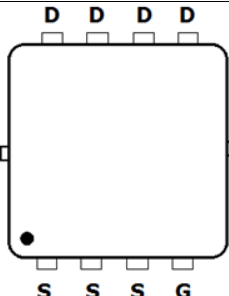
Product Description

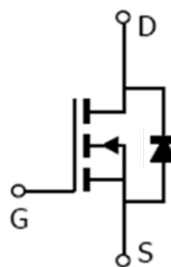
These N-Channel enhancement mode power field effect transistors are using trench DMOS technology. This advanced technology has

Applications

- MB / VGA / Vcore
- DC-DC Converters
- Power Management Functions

Pin Configuration

LMN3112XF (DFN5X6-8L)	
	
Pin	Description
1,2,3	Source
4	Gate
5,6,7,8	Drain



Ordering Information

Ordering Information					
Part Number	P/N	PKG code	Pb Free code	Package	Quantity
LMN3112XF	LMN3112	X	F	DFN5x6-8L	3000 PCS

Marking Information

Marking Information		
Part Marking	Part Number	LFC code
3112XF XWMMMM	3112XF	XWMMMM

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	±20	V
I _D	Continuous Drain Current	T _A =25°C	A
		T _A =75°C	
		T _C =25°C	
I _{DM}	Pulsed Drain Current ¹	50	A
E _{AS}	Single Pulse Avalanche Energy ²	21	
P _D	Power Dissipation	T _A =25°C	W
		T _A =75°C	
		T _C =25°C	
T _J	Operating Junction Temperature	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	50	°C/W
R _{θJC}	Thermal Resistance-Junction to Case	4.6	°C/W

Electrical Characteristics

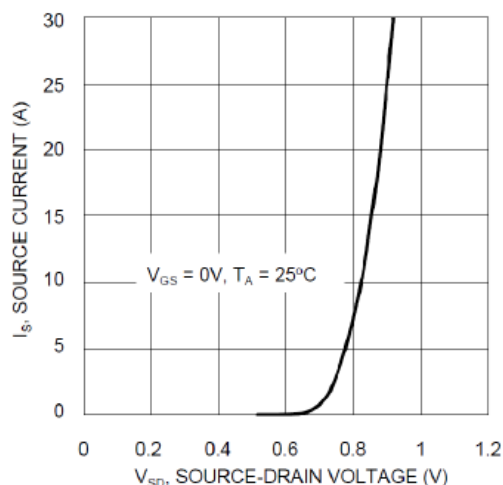
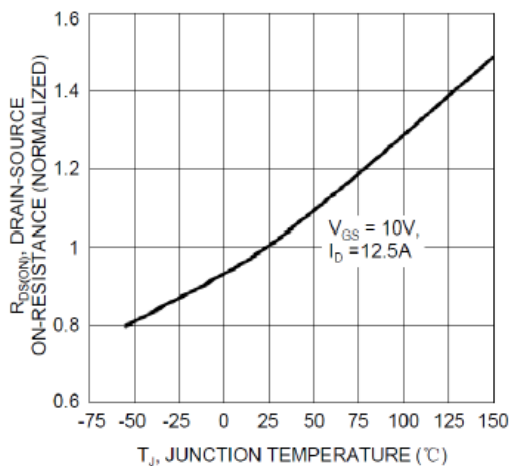
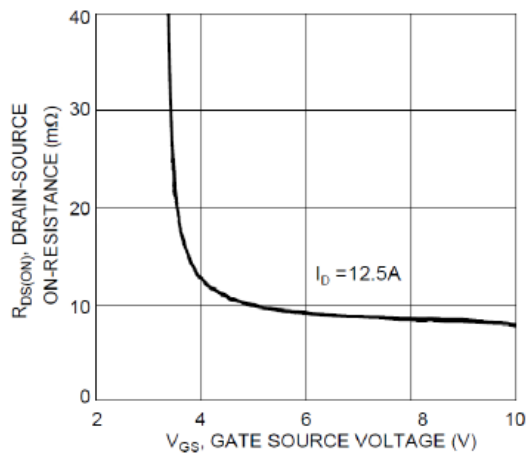
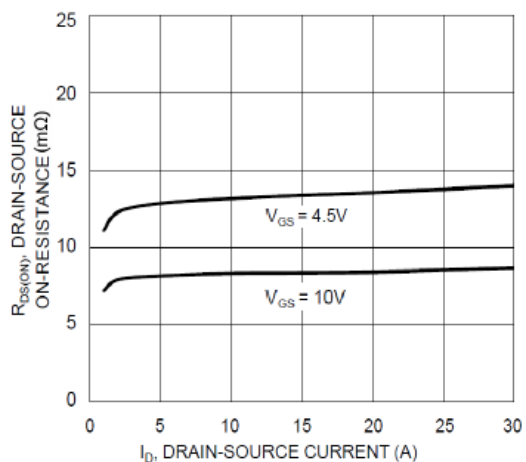
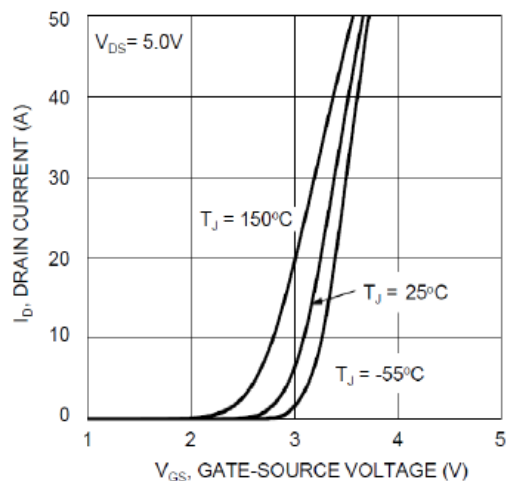
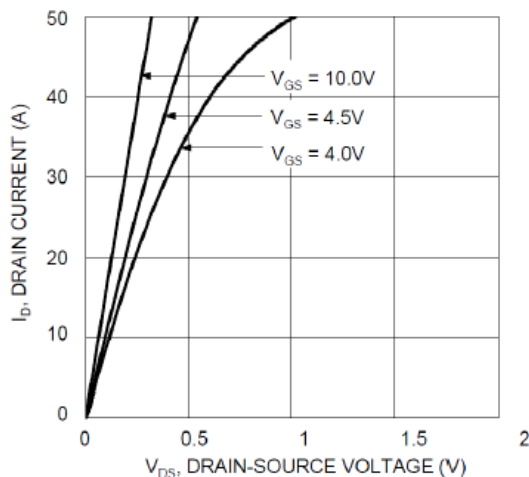
(T_C=25°C Unless otherwise noted)

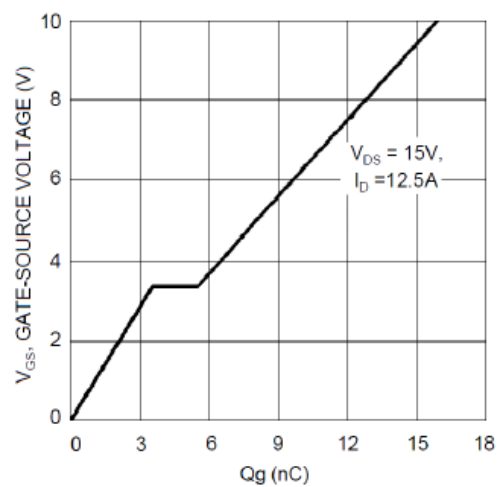
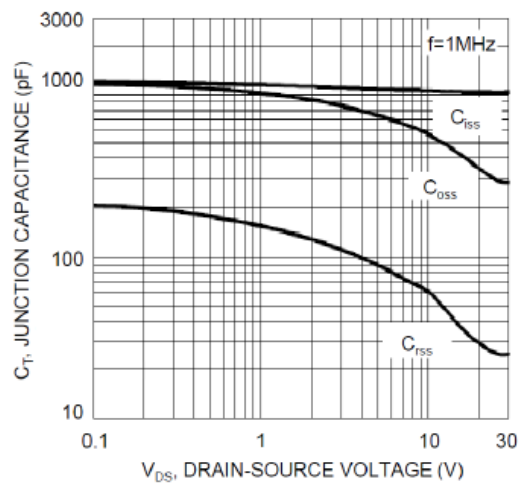
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1.2		2.5	
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±20V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V			1	uA
R _{DS(on)}	Drain-Source On-Resistance ³	V _{GS} =10V, I _D =10A		8.1	12	mΩ
		V _{GS} =4.5V, I _D =5A		13.7	16	
g _{FS}	Forward Transconductance	V _{DS} =10V, I _D =3A			10	S
V _{SD}	Diode Forward Voltage ³	I _S =1A, V _{GS} =0V		0.7	1	V
Dynamic						
Q _g	Total Gate Charge ^{3,4}	V _{DS} =15V, V _{GS} =4.5V, I _D =12.5A		8		nC
Q _{gs}	Gate-Source Charge ^{3,4}			4		
Q _{gd}	Gate-Drain Charge ^{3,4}			2		
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz		1040		pF
C _{oss}	Output Capacitance			445		
C _{rss}	Reverse Transfer Capacitance			40		
t _{d(on)}	Turn-On Time ^{3,4}	V _{DD} =15V, I _D =12.5A, V _{GS} =10V, R _G =6Ω		10		ns
t _r	Rise Time ^{3,4}			9		
t _{d(off)}	Turn-Off Time ^{3,4}			24		
t _f	Fall Time ^{3,4}			8		
R _g	Gate Resistance	V _{GS} =0V, V _{DS} =0V, f=1MHz		1.1		Ω

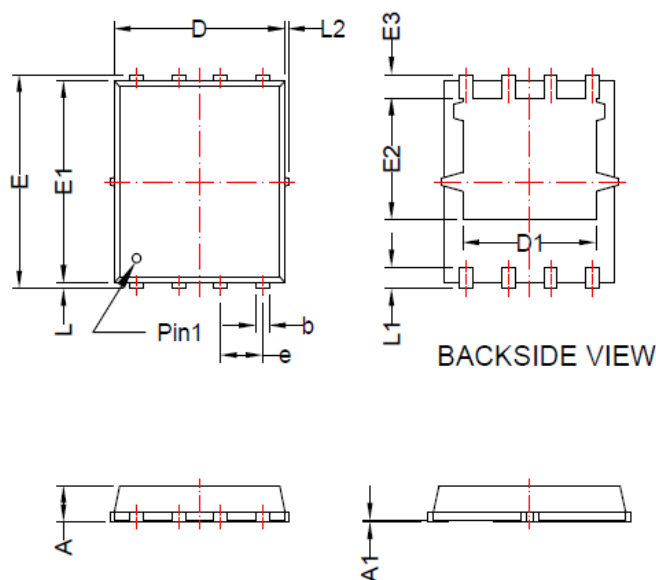
Note :

1. Repetitive Rating: Pulsed width limited by maximum junction temperature.
2. V_{DD}=15V, V_{GS}=10V, L=0.1mH, I_{AS}=13A, Starting T_J=25°C.
3. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.
4. Essentially independent of operating temperature.

Typical Performance Characteristics



Typical Performance Characteristics(continue)


Package Dimension:
DFN5X6-8L


DIMENSION D AND E1 DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH, PROTRUSIONS OR GATE BURRS SHALL NOT EXCEED 0.5mm PER INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.5mm PER SIDE.

Symbol	Dimensions			
	Millimeters		Inches	
	Min	Max	Min	Max
A	0.80	1.20	0.031	0.047
A1	0.00	0.05	0.000	0.002
b	0.25	0.51	0.010	0.020
c	0.20	0.35	0.008	0.014
D	4.90	5.40	0.193	0.213
D1	3.40	4.60	0.134	0.181
E	5.90	6.20	0.232	0.244
E1	5.40	5.90	0.213	0.232
E2	3.20	3.80	0.126	0.150
E3	0.40	0.80	0.016	0.031
e	1.27 BSC		0.050 BSC	
L	0.10	0.25	0.004	0.010
L1	0.45	0.75	0.018	0.030
L2	-	0.15	-	0.006

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