

LMN22N10XF 100V N-Channel MOSFET

Features

- 100V,45A, $R_{DS(ON)} < 22m\Omega @ V_{GS} = 10V$
- Improved dv/dt capability
- Fast switching
- 100% EAS guaranteed
- Green Device Available
- DFN5X6-8L package design

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

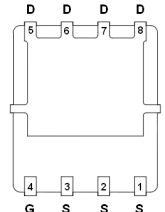
Product Description

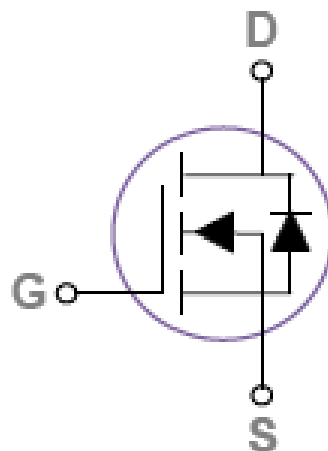
These N-Channel enhancement mode power field effect transistors are using trench DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode.

Applications

- Networking
- Load Switch
- LED applications

Pin Configuration

LMN22N10XF (DFN5X6-8L)	
 Bottom View	
Pin	Description
1	Source
2	Source
3	Source
4	Gate
5	Drain
6	Drain
7	Drain
8	Drain



Ordering Information

Part Number	P/N	PKG Code	Pb Free Code	Package	Quantity Reel
LMN22N10XF	LMN22N10	X	F	DFN5X6-8L	3000 pcs

Marking Information

Part Marking	Part Number	LFC code
22N10XF XWMMMM	22N10XF	XWMMMM

Absolute Maximum Ratings

(T_A=25°C Unless otherwise noted)

Symbol	Parameter		Typical	Unit
V _{DS}	Drain-Source Voltage		100	V
V _{GS}	Gate-Source Voltage		±20	V
I _D	Continuous Drain Current ¹	T _C =25°C	45	A
		T _C =100°C	28	
I _{DM}	Pulsed Drain Current		150	A
EAS	Single Pulse Avalanche Energy		45	mJ
IAS	Single Pulse Avalanche Current		30	A
P _D	Power Dissipation T _C =25°C		96	W
T _J	Operating Junction Temperature Range		-50 to +150	°C
T _{STG}	Storage Temperature Range		-50 to +150	°C
R _{θJC}	Thermal Resistance-Junction to Case		1.2	°C/W

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	100			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1	2	3	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±20V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =100V, V _{GS} =0V			1	uA
I _S	Continuous Source Current	V _G =V _D =0, Force Current			45	A
I _{SM}	Pulsed Source Current				90	
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =10V, I _D =16A		19	22	mΩ
		V _{GS} =6V, I _D =8A		20	24	
		V _{GS} =4.5V, I _D =5A		21	38	
g _{FS}	Forward Transconductance	V _{DS} =10V, I _D =3A		13		S
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =1A			1	V
Dynamic						
C _{iSS}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz		4708		pF
C _{oSS}	Output Capacitance			326		
C _{rSS}	Reverse Transfer Capacitance			247		
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz		1.6		Ω
Q _g	Total Gate Charge	V _{DS} =80V, V _{GS} =10V, I _D =20A		36		nC
Q _{gs}	Gate-Source Charge			5		
Q _{gd}	Gate-Drain Charge			10		
t _{d(on)}	Turn-On Time	V _{DD} =40V, I _D =20A, V _{GS} =10V, R _G =3.3Ω		11.5		ns
T _r				29		
t _{d(off)}	Turn-Off Time			42		
T _f				18		

Typical Performance Characteristics

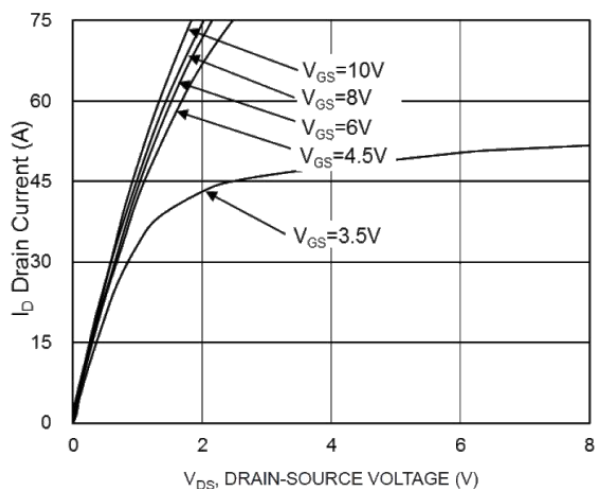


Fig.1 Typical Output Characteristics

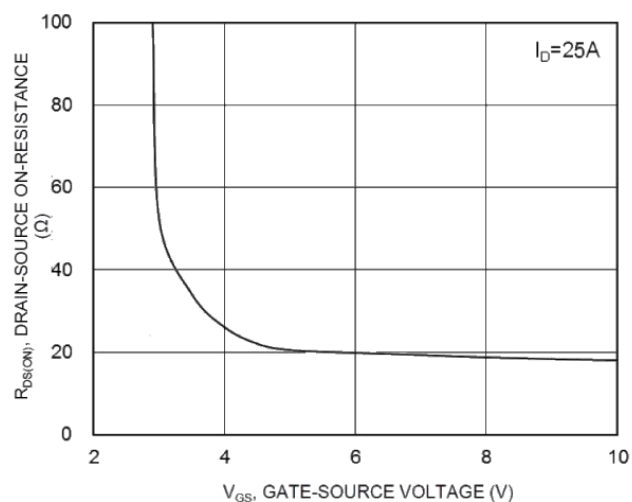


Fig.2 Typical Transfer Characteristics

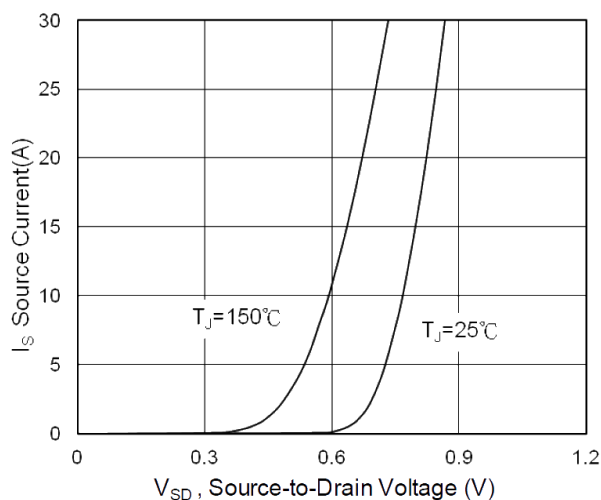


Fig.3 Diode Forward Voltage vs. Current

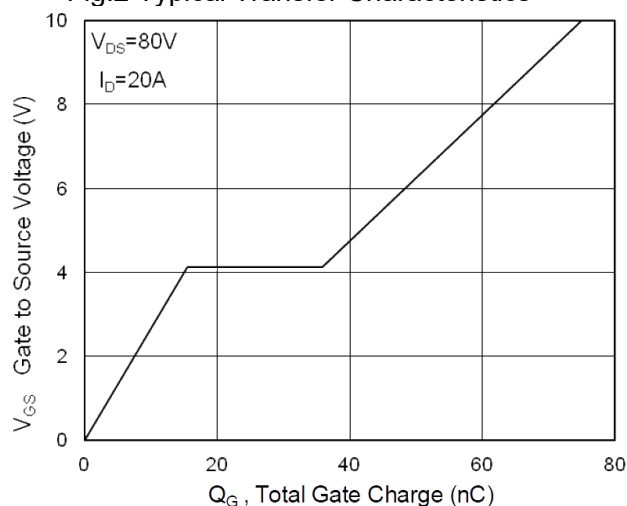


Fig.4 Gate Charge

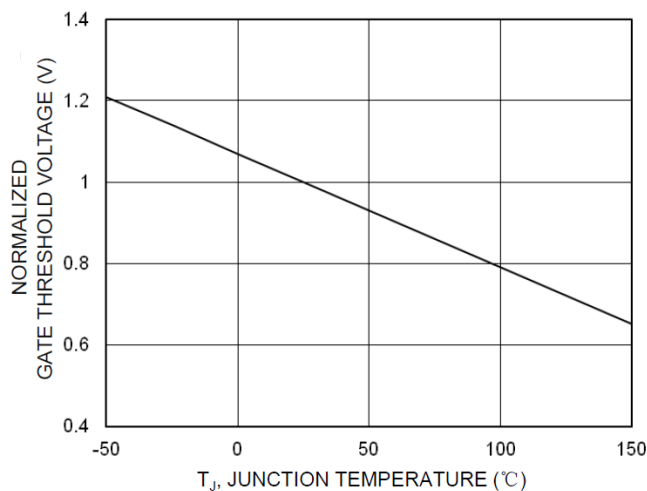


Fig.5 Gate Threshold Variation vs. T_J

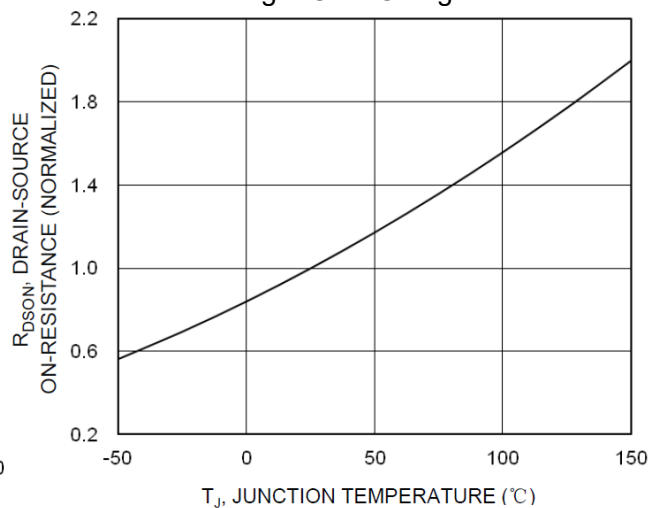
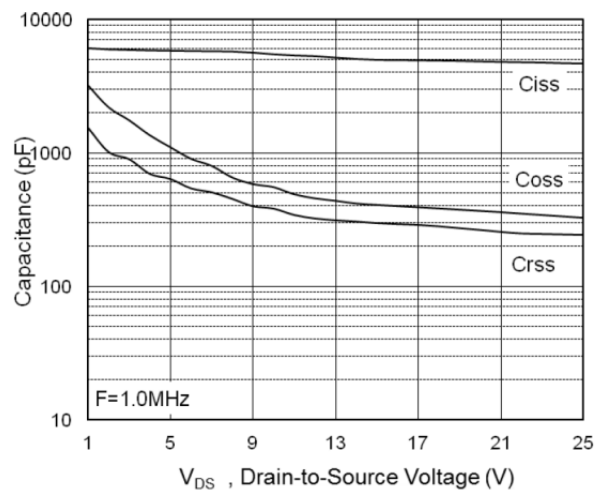
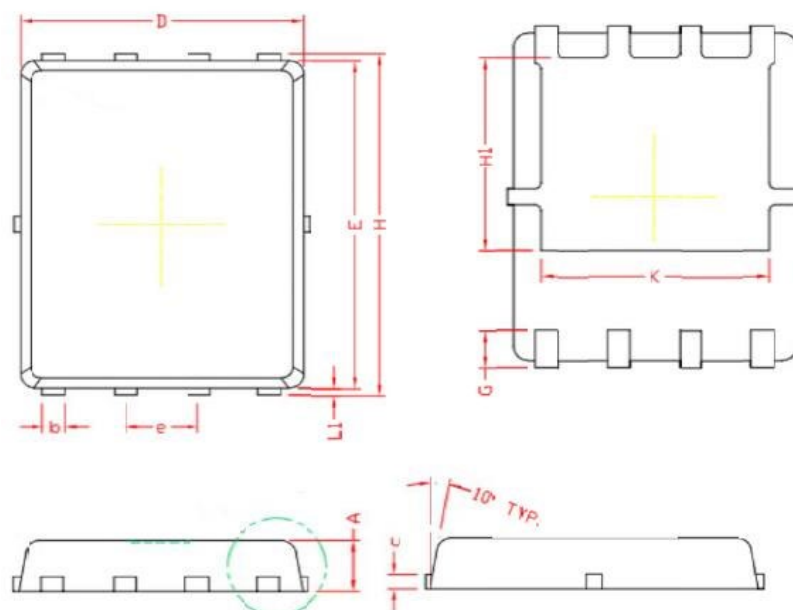


Fig.6 On-Resistance Variation with T_J

Typical Performance Characteristics (continue.)

Fig.7 Typical Capacitance

Package Dimension
DFN5x6-8L


Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.800	1.000	0.031	0.039
A1	0.000	0.050	0.000	0.002
b	0.250	0.490	0.014	0.019
c	0.254 REF		0.010 REF	
D	4.900	5.400	0.193	0.201
E	5.400	5.900	0.224	0.232
F	1.400 REF		0.055 REF	
e	1.270 BSC		0.050 BSC	
H	5.900	6.200	0.234	0.244
H1	3.435 REF		0.135 REF	
L1	0.100	0.250	0.012	0.009
G	0.590 REF		0.024 REF	
K	4.000 REF		0.157 REF	