



FXN0607CN Series

Rev.A

General Description

The FXN0607CN uses advanced Silicon's MOSFET Technology, which provides high performance in on-state resistance, fast switching performance, and excellent quality.

These devices can also be utilized in industrial applications such as Low Power Drives SMPS, DC/DC converter, and general purpose applications.

Features

VDS =70V

ID = 100A @VGS = 10V

Very low on-resistance

RDS(ON) < 6mΩ @VGS = 10V

100% UIL Tested

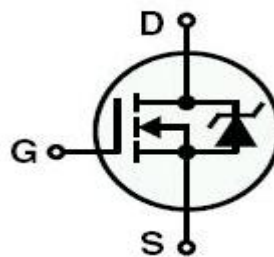
100% Rg Tested

150 °C operating temperature



TO-220A TOP View

N-channel



Schematic Diagram

Absolute Maximum Ratings (T_J =25 °C)

Characteristics		Symbol	Rating	Unit
Drain-Source Voltage		VDSS	70	V
Gate-Source Voltage		VGSS	±30	V
Continuous Drain Current (1)	Tc=25°C(silicon limited)	ID	100	A
	Tc=25°C(package limited)		63.5	
	Tc=100°C(silicon limited)		48	
Pulsed Drain Current (2)		IDM	400	
Power Dissipation	Tc=25°C	PD	90	W
	Tc=100°C		66	
Single Pulse Avalanche Energy (3)		EAS	458	mJ
Junction and Storage Temperature Range		TJ, Tstg	-55~175	°C

Thermal Characteristics

Characteristics	Symbol	Rating	Unit
Thermal Resistance, Junction-to-Ambient (1)	RθJA	62.5	°C/W
Thermal Resistance, Junction-to-Case	RθJC	1.7	



Electrical Characteristics (T_J = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D = 250μA, V _{GS} = 0V	70		-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2		4	
Drain Cut-Off Current	I _{DSS}	V _{DS} = 70V, V _{GS} = 0V	-	-	1	μA
Gate Leakage Current	I _{GSS}	V _{GS} = ±30V, V _{DS} = 0V	-	-	±0.1	
Drain-Source ON Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D = 40A	-	5.2	6	mΩ
Forward Transconductance	g _{fs}	V _{DS} = 30V, I _D = 40A	-	-	-	S
Dynamic Characteristics						
Total Gate Charge	Q _g	V _{DS} = 55V, I _D = 40A, V _{GS} = 10V	-	108		nC
Gate-Source Charge	Q _{gs}		-	18.6	-	
Gate-Drain Charge	Q _{gd}		-	34.2	-	
Input Capacitance	C _{iss}	V _{DS} = 25V, V _{GS} = 0V, f = 1.0MHz	-	2950	-	pF
Reverse Transfer Capacitance	C _{rss}		-	260	-	
Output Capacitance	C _{oss}		-	272	-	
Turn-On Delay Time	t _{d(on)}	V _{GS} = 10V, V _{DS} = 30V, I _D = 2A, R _G = 2.5Ω	-	18	-	ns
Rise Time	t _r		-	26	-	
Turn-Off Delay Time	t _{d(off)}		-	56	-	
Fall Time	t _f		-	24	-	
Gate Resistance	R _g	f = 1 MHz	-		-	Ω
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V _{SD}	I _S = 40A, V _{GS} = 0V	-	0.9	1.2	V
Body Diode Reverse Recovery Time	t _{rr}	I _F = 40A, dI/dt = 100A/μs	-	28		ns
Body Diode Reverse Recovery Charge	Q _{rr}		-	32		nC

Note

1. Surface mounted FR-4 board by JEDEC (jesd51-7)
2. Pulse width limited by T_{Jmax}
3. E_{AS} is tested at starting T_J = 25°C, L = 50mH, I_{AS} = 45A, V_{GS} = 10V VDD=50V



Typical Characteristics (T_J=25°C Noted)

Figure1. Output Characteristics

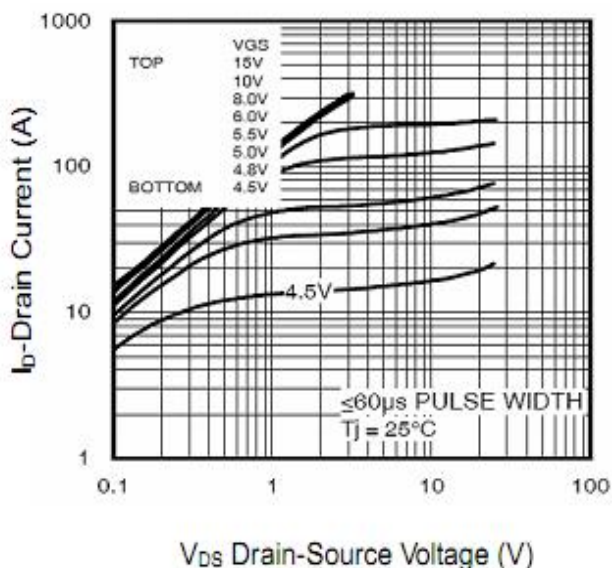


Figure2. Transfer Characteristics

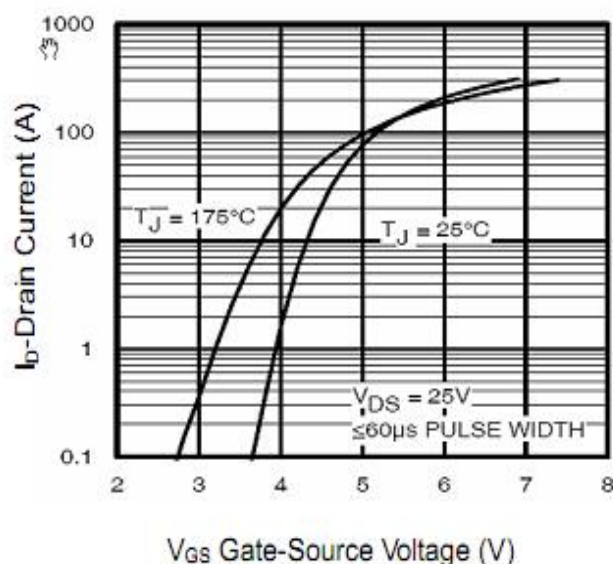


Figure3. BV_{DSS} vs Junction Temperature

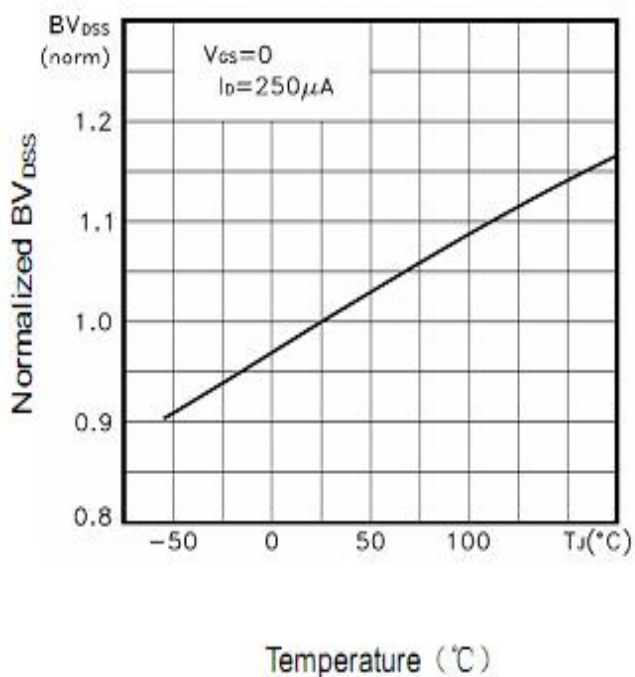


Figure4. I_D vs Junction Temperature

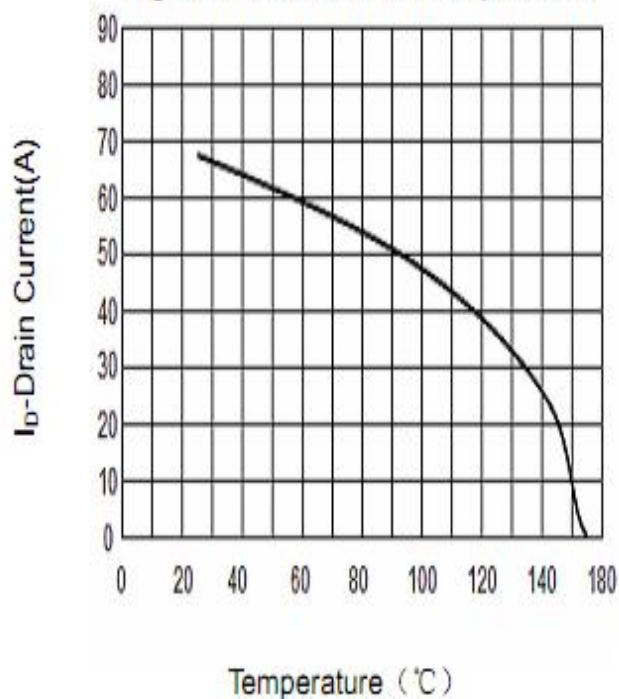




Figure5. VGS(th) vs Junction Temperature

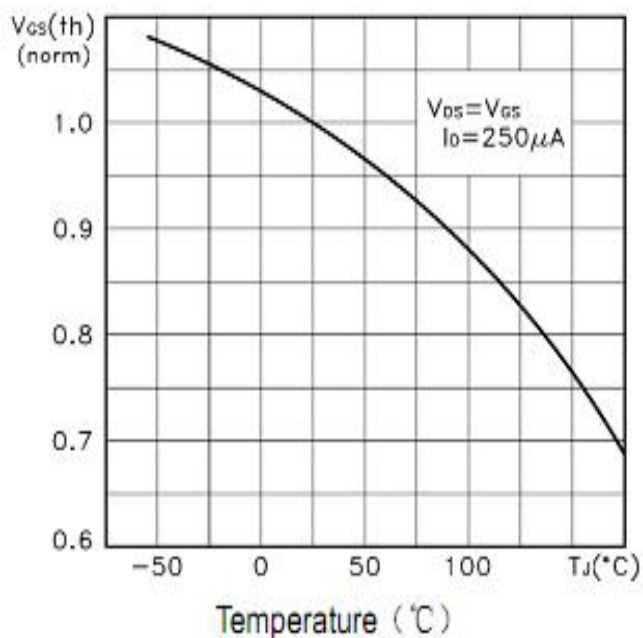


Figure6. Rdson Vs Junction Temperature

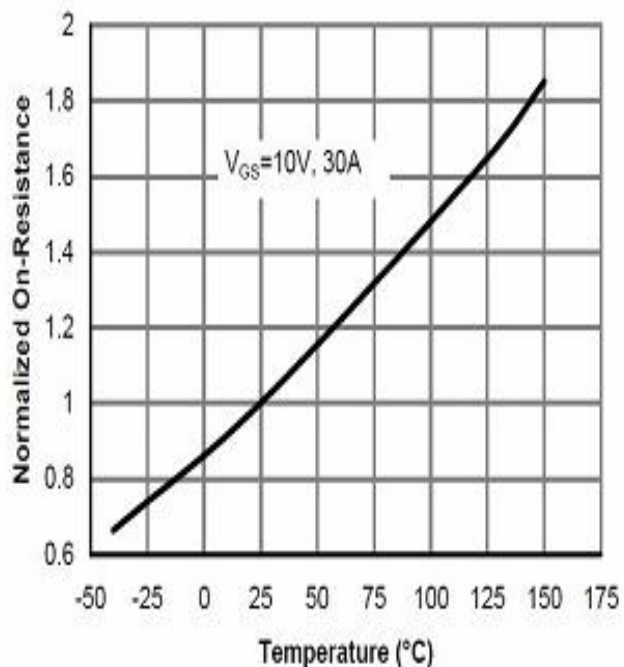


Figure7. Gate Charge

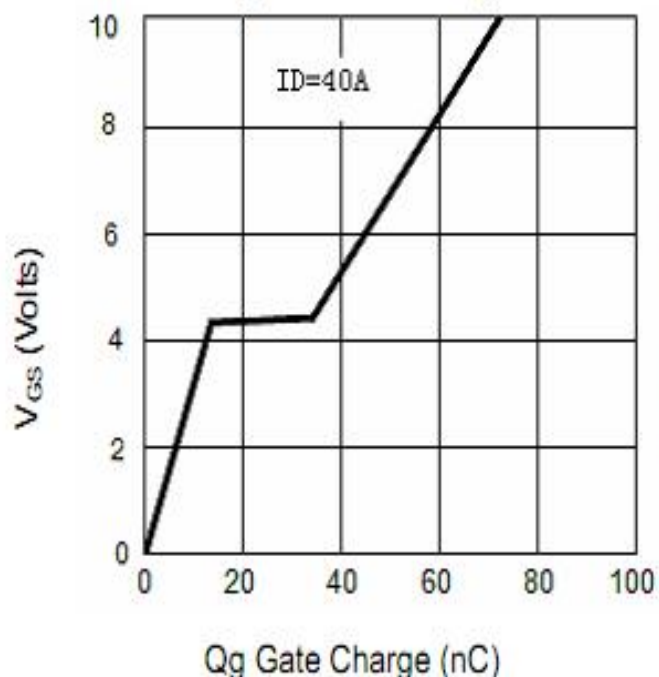


Figure8. Capacitance vs Vds

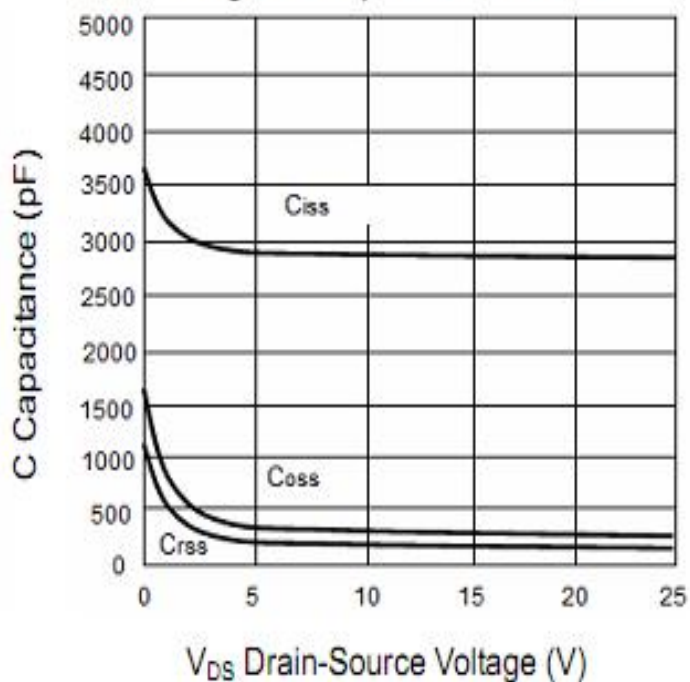




Figure9. Source- Drain Diode Forward

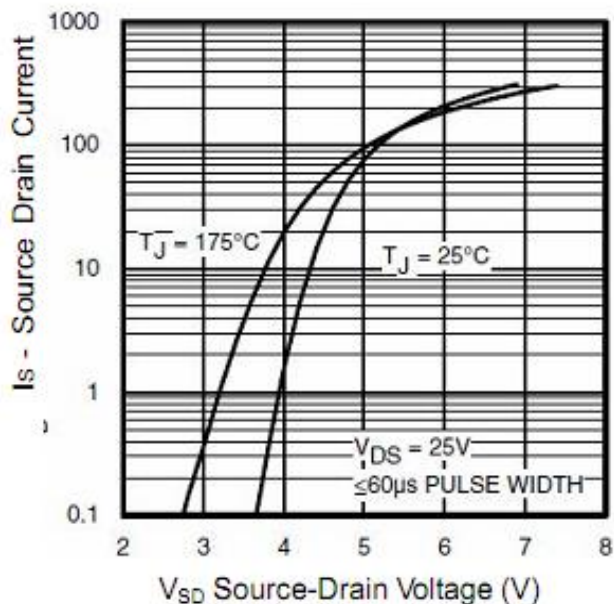


Figure10. Safe Operation Area

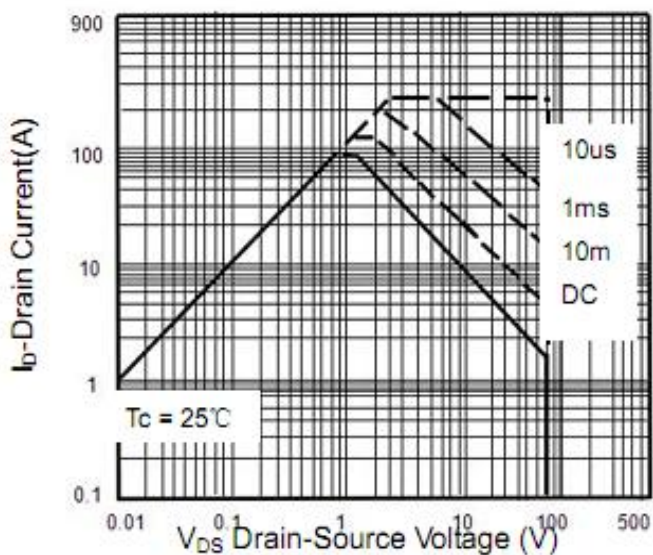
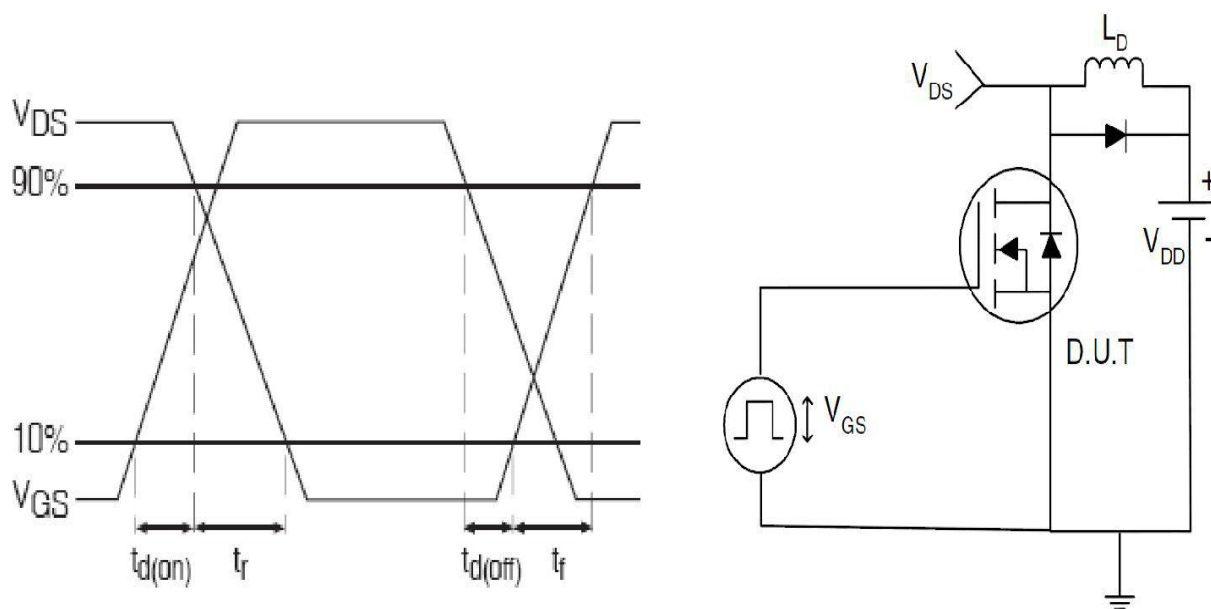
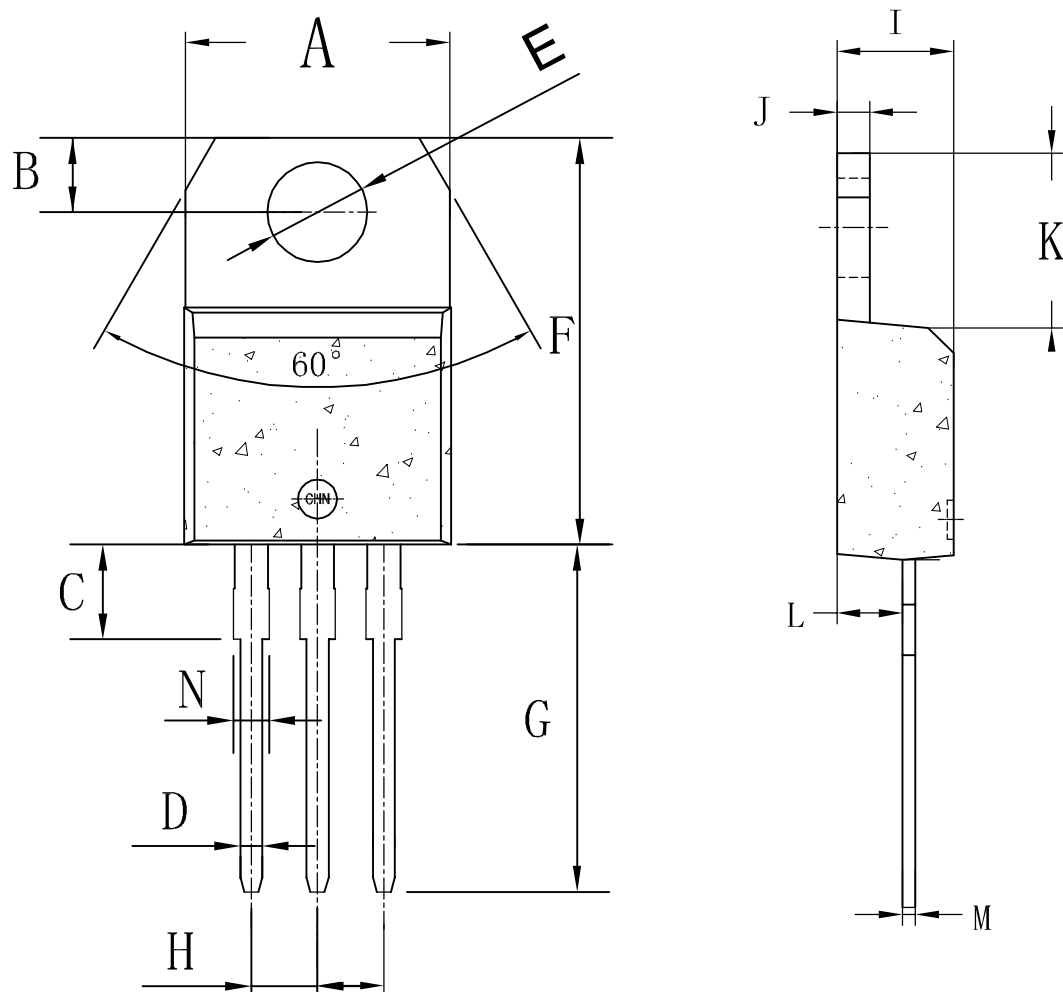


Figure 11.Switch Time Test Circuit:





T0-220



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	9.8	10.4	0.385	0.409
B	2.65	3.1	0.104	0.122
C	2.8	4.2	0.11	0.165
D	0.7	0.92	0.027	0.036
E	3.75	3.95	0.147	0.155
F	14.8	16.1	0.582	0.633
G	13.05	13.6	0.513	0.535
H	2.4	2.7	0.094	0.106
I	4.38	4.61	0.172	0.181
J	1.15	1.36	0.045	0.053
K	5.85	6.82	0.230	0.268
L	2.35	2.75	0.092	0.108
M	0.35	0.65	0.013	0.025
N	1.18	1.42	0.046	0.055