



FXN32N55T

Rev.A

General Description

The FXN32N55T 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 so power, miner power, DC/DC converter, and general purpose applications.

Features

VDS = 550V

ID = 32A @VGS = 10V

Very low on-resistance

RDS(ON) < 130mΩ @VGS = 10V

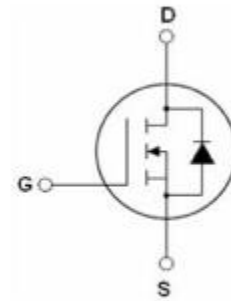
100% UIL Tested

100% Rg Tested

150C operating temperatureo



TO-247 Top View



Schematic Diagram

Absolute Maximum Ratings (T_J = 25 °C)

Characteristics		Symbol	Rating	Unit
Drain-Source Voltage		VDSS	550	V
Gate-Source Voltage		VGSS	±30	V
Continuous Drain Current ⁽¹⁾	TC=25° C (Silicon Limited)	ID	32	A
	TC=25° C (Package Limited)		32	
	TC=100° C (Silicon Limited)		23	
Pulsed Drain Current ⁽⁴⁾		IDM	128	
Power Dissipation	TC=25° C (Silicon Limited)	PD	350	W
	Tc=25° C (Package Limited)		320	
Single Pulse Avalanche Energy ⁽³⁾		EAS	2200	mJ
Junction and Storage Temperature Range		TJ, Tstg	-55~150	°C

Thermal Characteristics

Characteristics	Symbol	Rating	Unit
Thermal Resistance, Junction-to-Ambient	RθJA	54	°C/W
Thermal Resistance, Junction-to-Case ⁽¹⁾	RθJC	0.36	



Electrical Characteristics (T_J = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BVDSS	ID = 250μA, VGS = 0V	550	-	-	V
Gate Threshold Voltage	VGS(th)	VDS = VGS, ID = 250μA	2.0	-	4.0	
Drain Cut-Off Current	IDSS	VDS = 550V, VGS = 0V	-	-	1.0	μA
Gate Leakage Current	IGSS	VGS = ±30V, VDS = 0V	-	-	±0.1	
Drain-Source ON Resistance	RDS(ON)	VGS = 10V, ID = 32A	-	110	130	mΩ
Forward Transconductance	gfs	VDS = 10V, ID = 15A	-	35	-	S
Dynamic Characteristics						
Total Gate Charge	Qg	VDS = 400V, ID = 32A, VGS = 10V	-	110	150	nC
Gate-Source Charge	Qgs		-	25	-	
Gate-Drain Charge	Qgd		-	50	-	
Input Capacitance	Ciss	VDS = 30V, VGS = 0V, f = 1.0MHz	-	4050	4350	pF
Reverse Transfer Capacitance	Crss		-	120	145	
Output Capacitance	Coss		-	520	570	
Turn-On Delay Time	td(on)	VGS = 10V, VDS = 400V ID = 32A, RG = 12Ω	-	35	50	ns
Rise Time	tr		-	120	150	
Turn-Off Delay Time	td(off)		-	105	150	
Fall Time	tf		-	75	100	
Gate Resistance	Rg	f = 1 MHz	-			Ω
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	VSD	IS = 32A, VGS = 0V	-	0.9	1.2	V
Body Diode Reverse Recovery Time	trr	IF = 32A, dI/dt = 100A/μs	-	920	-	ns
Body Diode Reverse Recovery Charge	Qrr		-	2.6	-	uC

Note :

1. Surface mounted FR-4 board by JEDEC (jesd51-7)
2. Pulse width limited by T_{Jmax}
3. EAS is tested at starting T_J = 25°C, L = 10mH, IAS = 32A, VGS = 10V

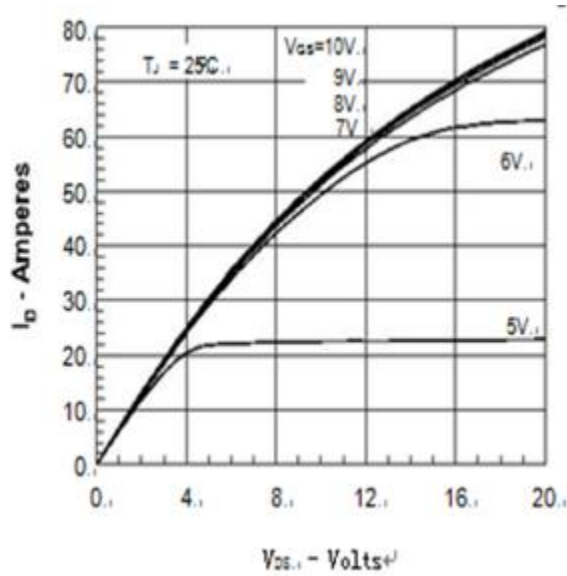


Figure 1. Output Characteristics at 25

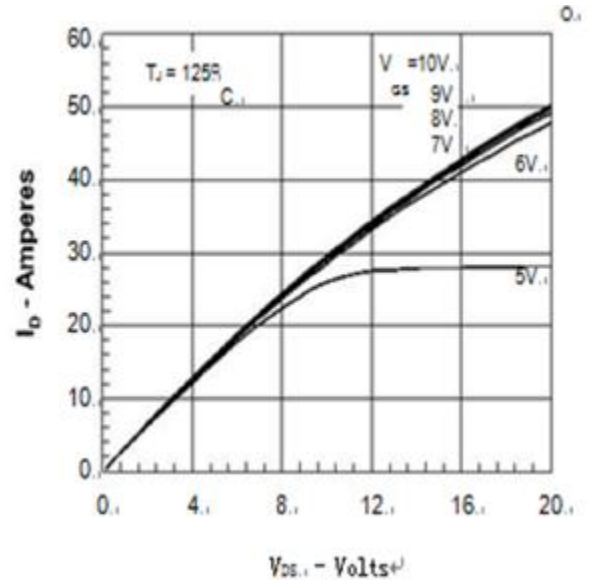


Figure 2. Output Characteristics at 125 C

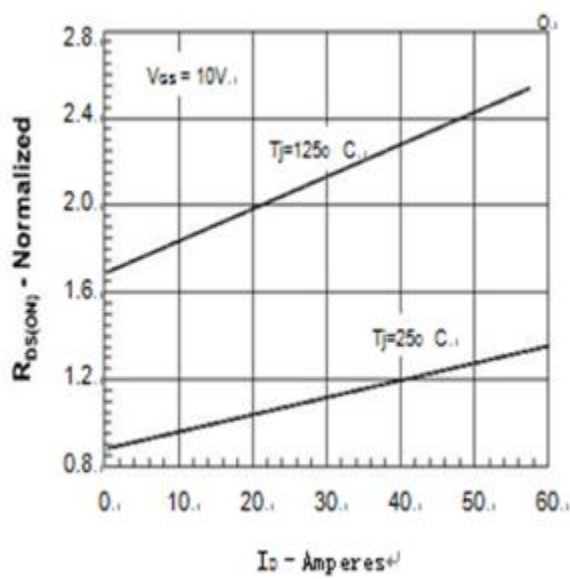


Figure 3. RDS(on) normalized to 15A/25 C vs. ID

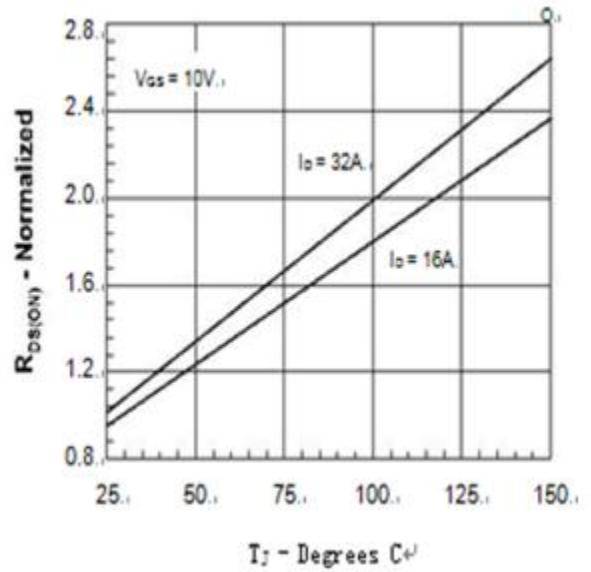


Figure 4. RDS(on) normalized to 15A/25 C vs. TJ

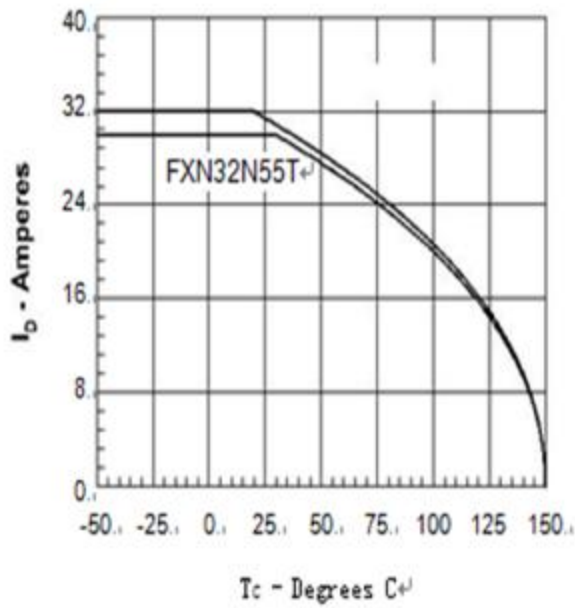


Figure 5. Drain Current vs. Case Temperature

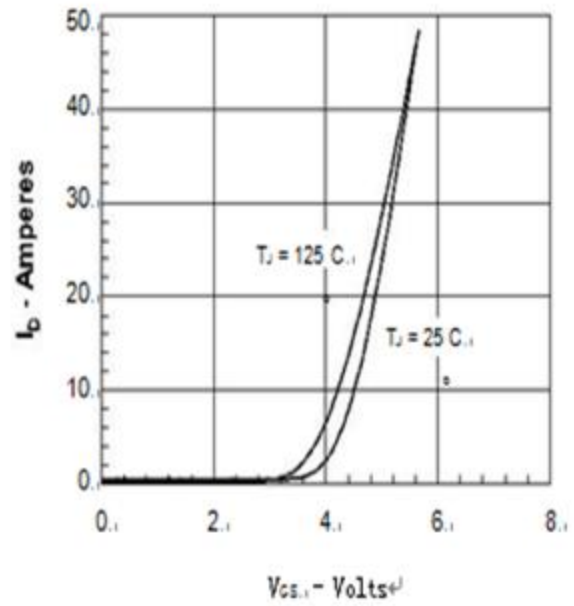


Figure 6. Admittance Curves

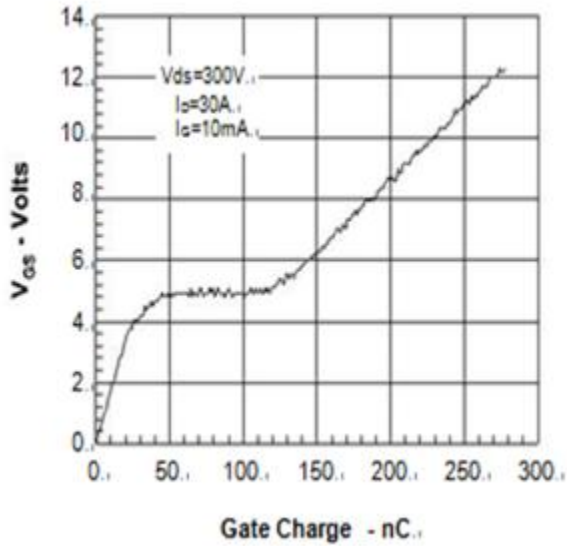


Figure 7. Gate Charge

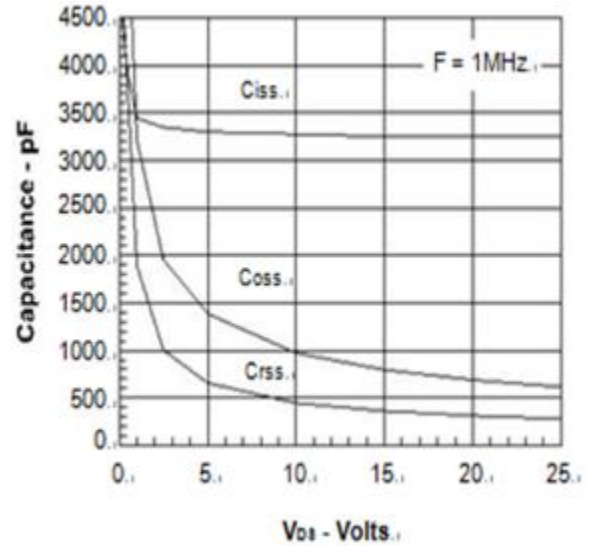


Figure 8. Capacitance Curves

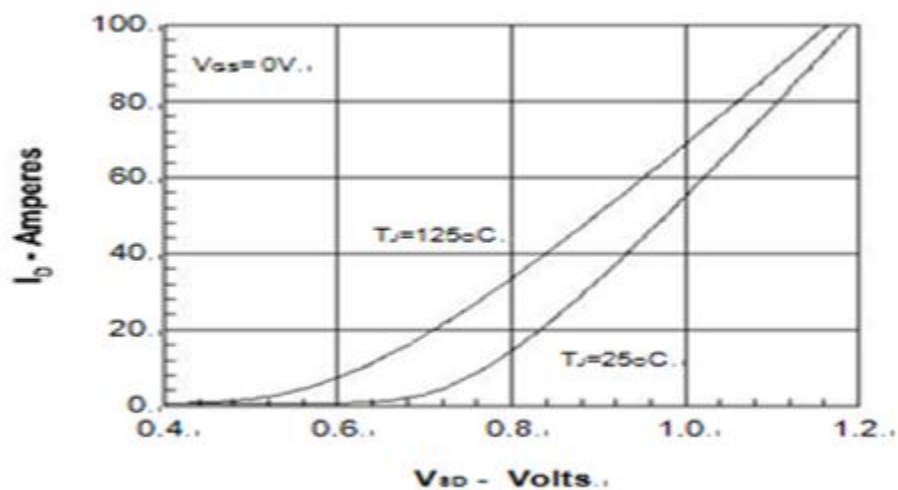


Figure 9. Forward Voltage Drop of the Intrinsic Diode

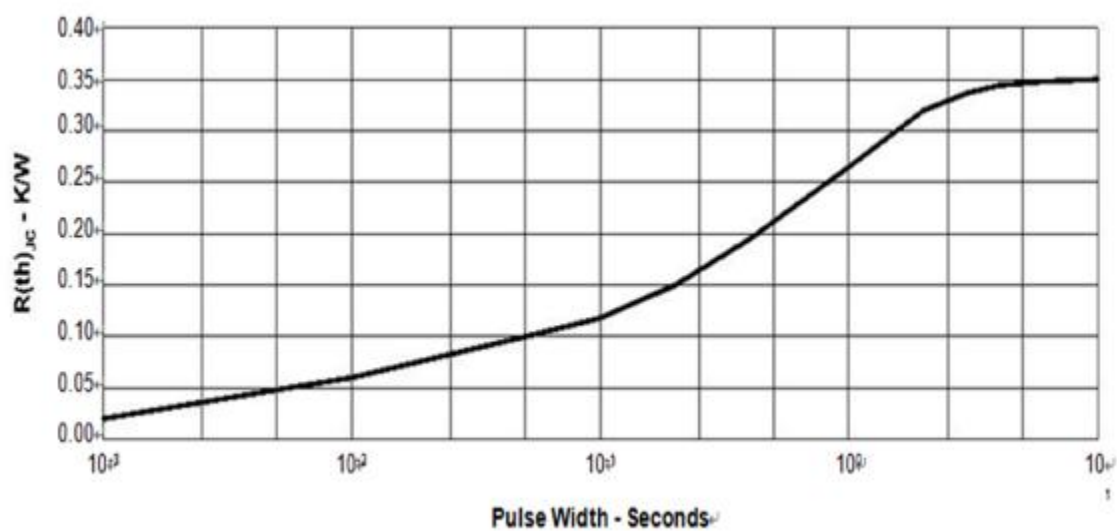


Figure 10. Transient Thermal Resistance