

MAIN CHARACTERISTICS

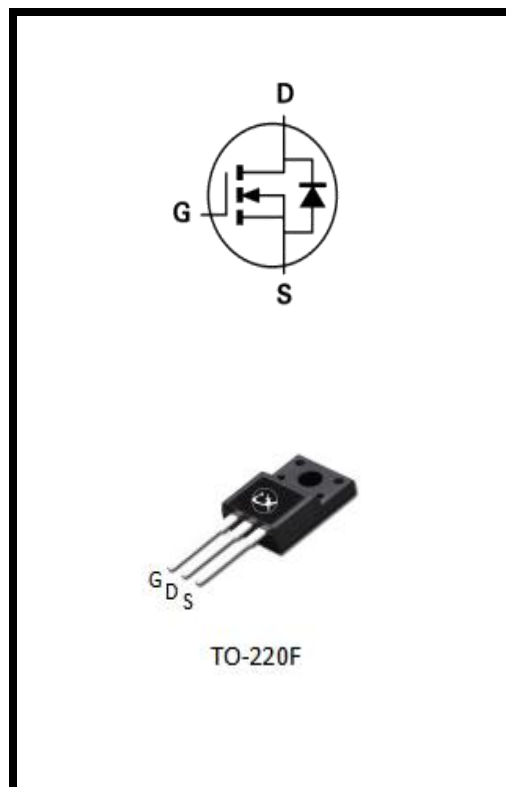
I_D	16A
V_{DSS}	800V
$R_{DS(on)}$ -Typ@ $V_{GS}=10V$	0.60Ω

FEATURES

- Unclamped Inductive Switching (UIS)rated
- International standard packages
- Low package inductance
- easy to drive and to protect

APPLICATIONS

- Easy to mount
- Space savings
- High power density



Product specification classification

Part Number	Package	Mode Name	Pack
CS16N80A8	TO-220F	CS16N80A8	Tube

Maximum Ratings at Tc=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	800	V
Gate-Source Voltage	V_{GS}	± 30	V
Continue Drain Current	I_D	16	A
Pulsed Drain Current (Note1)	I_{DM}	40	A
Power Dissipation	P_D	460	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	1	J
Peak Diode Recovery dv/dt[3]	dv/dt	10	V/ns
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.27	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62.5	°C/W

Note1:Pulse test: 300 μ s pulse width, 2 % duty cycle

Electrical Characteristics at Tc=25°C unless otherwise specified

Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0 \text{ V}, I_D = 250 \mu\text{A}$	BV_{DSS}	800	875	-	V
Drain-Source Leakage Current	$V_{DS} = 900 \text{ V}, V_{GS} = 0 \text{ V}$	I_{DSS}	-	-	1	μA
Gate Leakage Current	$V_{GS} = \pm 30 \text{ V}, V_{DS} = 0 \text{ V}$	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	$V_{GS(th)}$	2.5	3.6	4.5	V
Drain-Source On-State Resistance	$V_{GS} = 10 \text{ V}, I_D = 1 \text{ A}$	$R_{DS(on)}$	-	0.5	0.6	Ω
Forward Transconductance	$V_{DS} = 20 \text{ V}, I_D = 0.5 I_{D25}$	gfs	9	16	-	S
Input Capacitance	$V_{GS} = 0 \text{ V}, V_{DS} = 25 \text{ V}, f = 1 \text{ MHz}$	C_{iss}	-	4600	-	pF
Output Capacitance		C_{oss}	-	330	-	pF
Reverse Transfer Capacitance		C_{rss}	-	23	-	pF
Turn-on Delay Time(Note2)	$I_D = 0.5 I_{D25}, V_{DS} = V_{DSS}, V_{GS} = 10 \text{ V}, R_G = 5 \Omega$	$t_{d(ON)}$	-	27	-	ns
Rise Time(Note2)		t_r	-	32	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	75	-	ns
Fall Time(Note2)		t_f	-	29	-	ns
Total Gate Charge(Note2)	$I_D = 12 \text{ A}, V_{DS} = 0.5 V_{DSS}, I_D = 0.5 I_{D25}$	Q_G	-	71	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	21	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	23	-	nC

Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

Parameter	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current	Tj=25°C	I _S	-	-	16	A
Maximun Body-Diode Pulsed Current(Note2)		I _{SM}	-	-	48	A
Drain-Source Diode Forward Voltage	I _S = 1A, V _{GS} = 0 V	V _{SD}	-	-	1.2	V
Reverse Recovery Time(Note2)	I _F = 25 A, V _{GS} = 0 V, V _R = 100V ,dI _F / dt = 100 A/μs	trr	-	150	250	ns
Reverse Recovery Charge(Note2)		Qrr	-	0.7	-	μC
Peak Reverse Recovery Current		Irrm	-	7	-	A

Note2:Pulse test: 300 μs pulse width, 2 % duty cycle

RATINGS AND CHARACTERISTIC CURVES

Fig. 1. Output Characteristics
@ 25°C

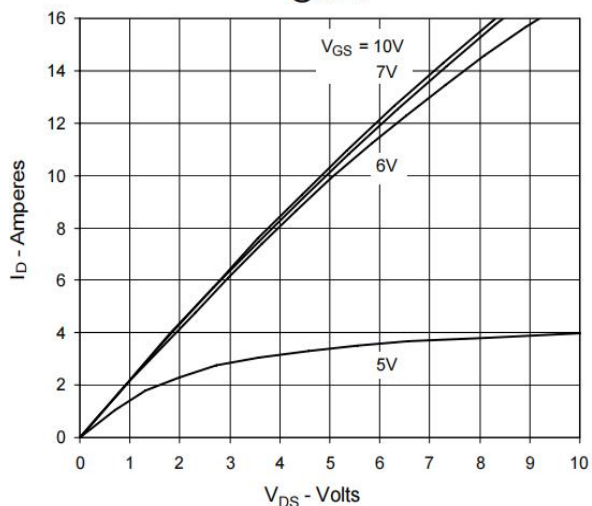


Fig. 2. Extended Output Characteristics
@ 25°C

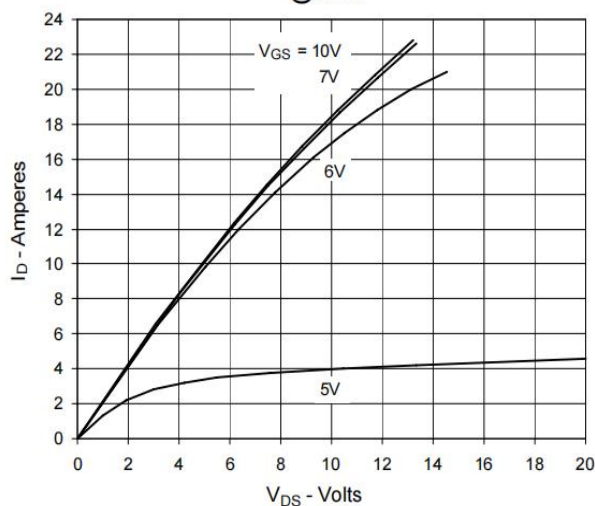


Fig. 3. Output Characteristics
@ 125°C

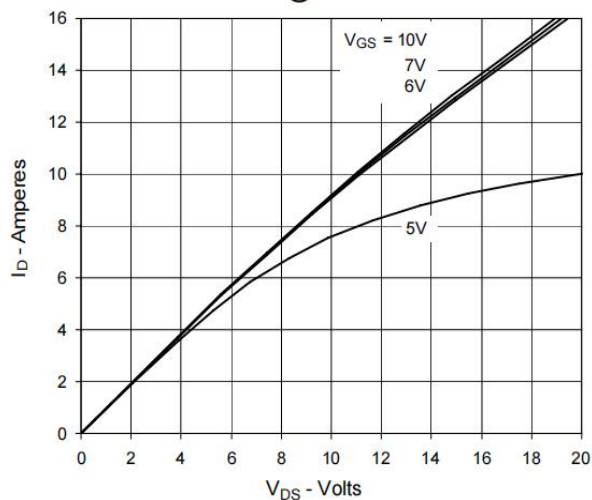


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 8A$ Value
vs. Junction Temperature

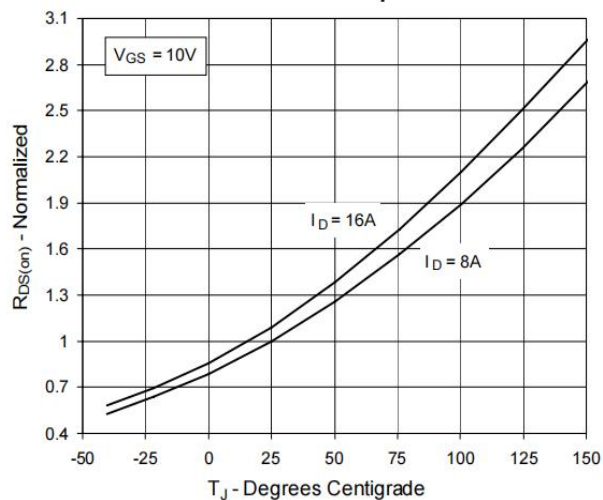


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 8A$ Value
vs. Drain Current

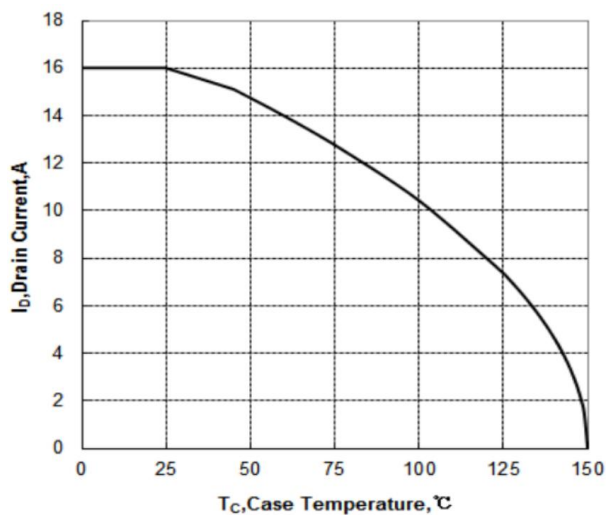
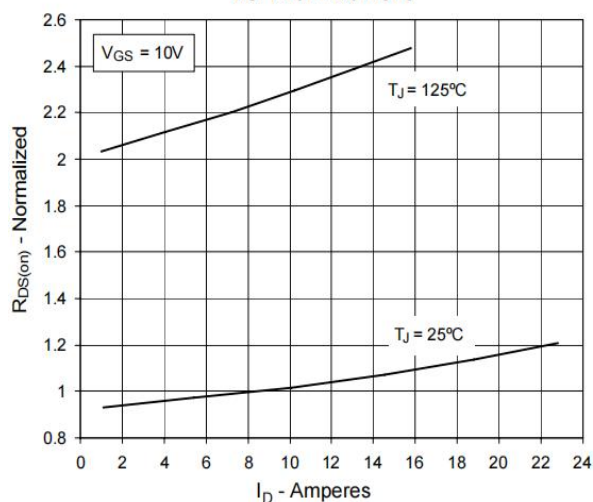


Fig. 7. Input Admittance

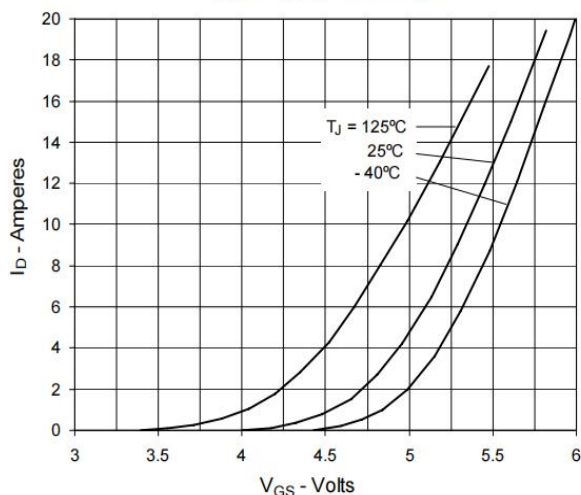


Fig. 8. Transconductance

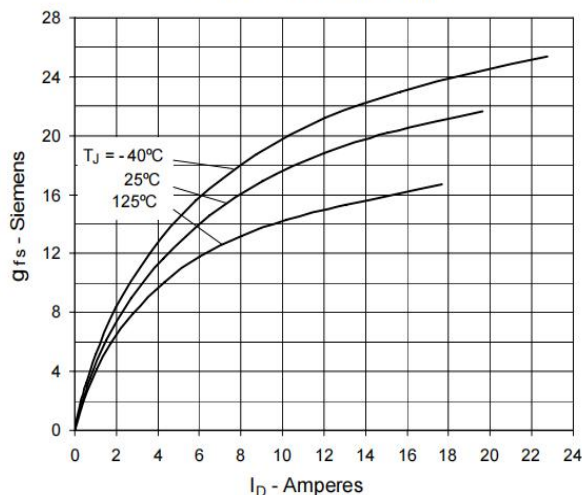


Fig. 9. Forward Voltage Drop of Intrinsic Diode

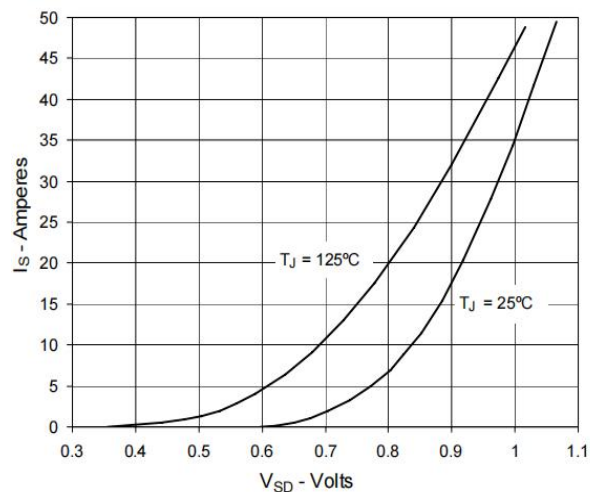


Fig. 10. Gate Charge

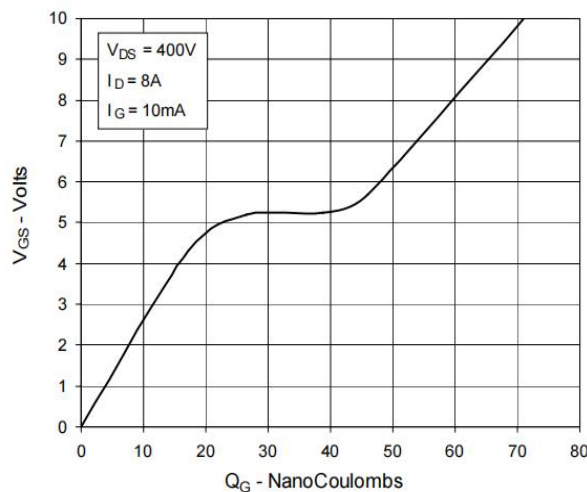


Fig. 11. Capacitance

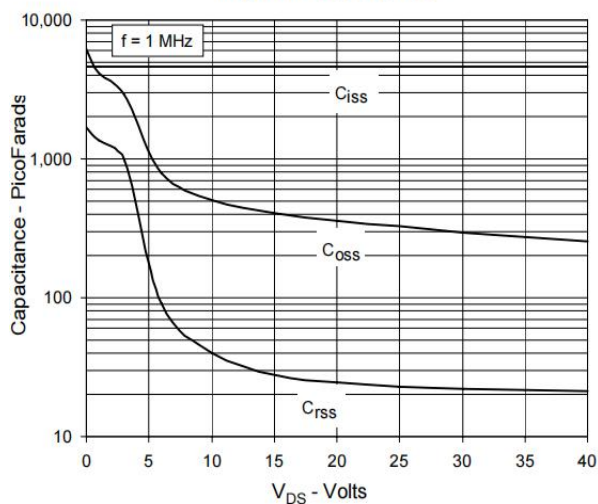
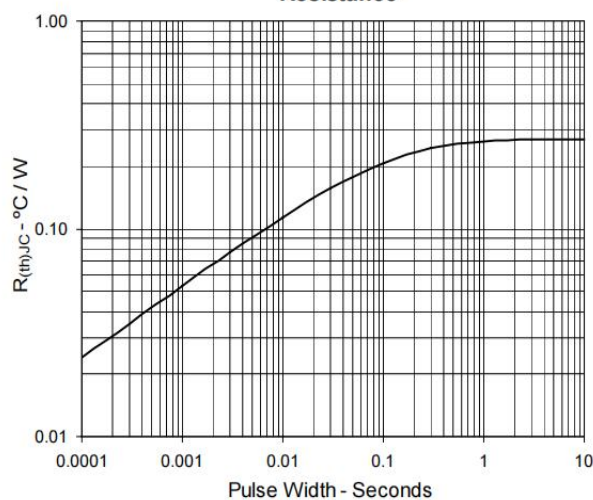
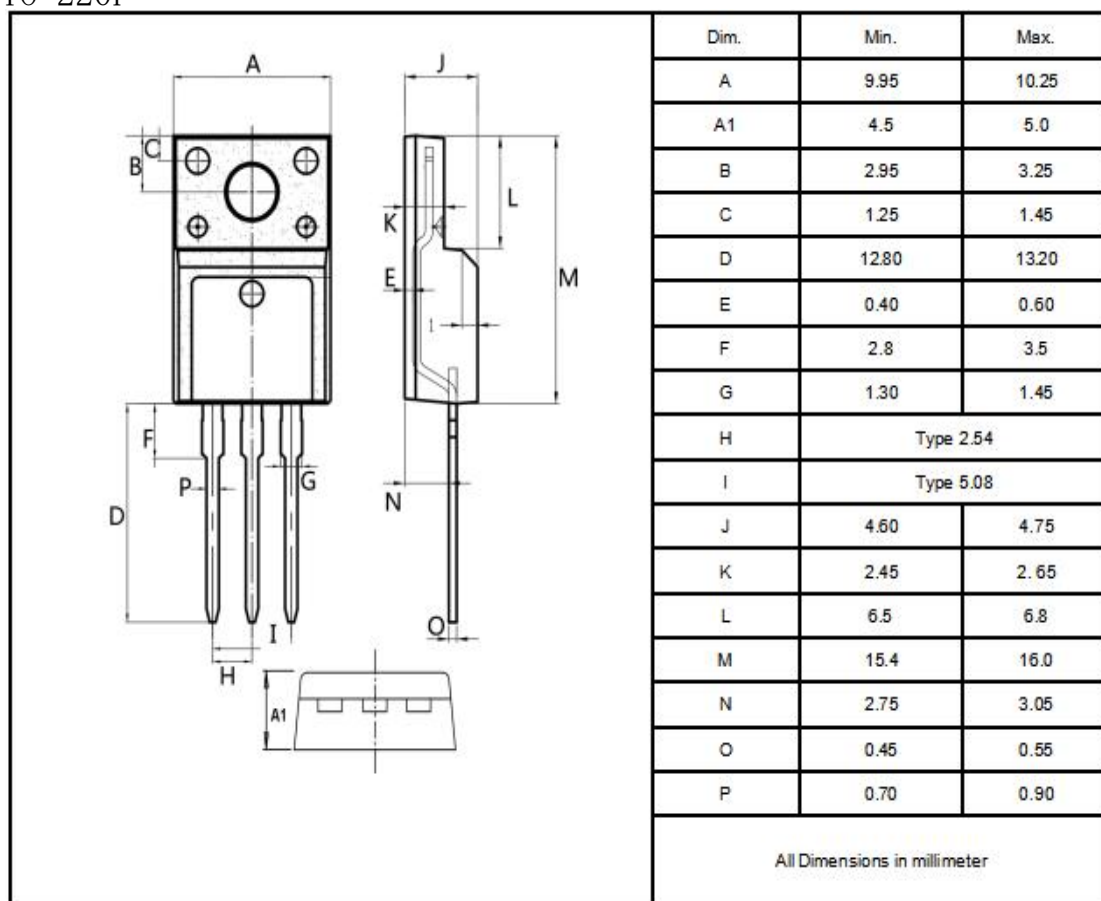


Fig. 12. Maximum Transient Thermal Resistance

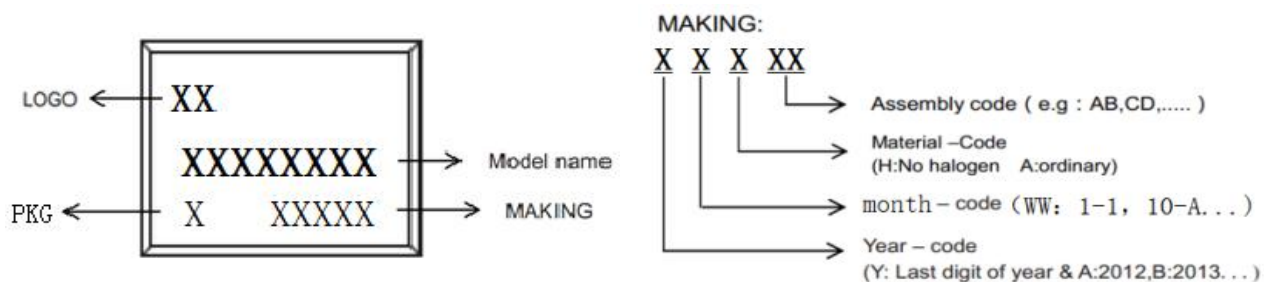


Package Outline Dimensions millimeters

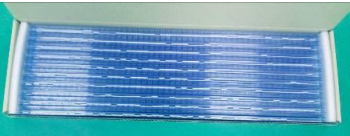
TO-220F



Marking on the body



packing instruction

PKG	Minimal Package	Box	Carton
TO-220F			
	50pcs/pdpe	1000pcs/box	5000pcs/Carton



CS16N80A8

N-Channel Enhancement Mode Power MOSFET

Notice

All product, product specifications and data are subject to change without notice to improve. The right to explain is owned by LINGXUN electronics company.

Confirm that operation temperature is within the specified range described in the product specification. Avoid applying power exceeding normal rated

power; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.

LINGXUN electronics shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this document.

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Revision History

Rev	Changes	Date
1.0	First version	2025-11-28