

MAIN CHARACTERISTICS

I_D	30A
V_{DSS}	600V
RDSON-typ VGS=10V	120mΩ

FEATURES

- Low gate charge
- Low RDS(on) per chip area(Low FOM)
- Very low switching and conduction loss
- Extremely high commutation ruggedness

APPLICATIONS

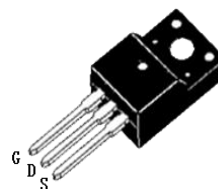
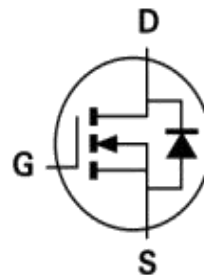
- Solar inverters
- LCD/LED/PDP TV
- Telecom/Server Power supplies
- AC-DC Power Supply

MECHANICAL DATA

- Case: Molded plastic
- Mounting Position: Any
- Molded Plastic: UL Flammability Classification Rating 94V-0
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Solder bath temperature 275°C maximum,10s per JESD 22-B106

Product specification classification

Part Number	Package	Mode Name	Pack
LC60R130F	TO-220F	LC60R130F	Tube



TO-220F

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	±30	V
Continue Drain Current	I_D	30	A
Pulsed Drain Current (Note1)	I_{DM}	90	A
Power Dissipation	P_D	34	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	330	mJ
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.7	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	80	°C/W

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

Electrical Characteristics at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250 \mu A$	BV_{DSS}	600	-	-	V
Drain-Source Leakage Current	$V_{DS} = 600V, V_{GS} = 0V$	I_{DSS}	-	-	1	μA
Gate Leakage Current	$V_{GS} = \pm 30V, V_{DS} = 0V$	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu A$	$V_{GS(th)}$	2	-	4	V
Drain-Source On-State Resistance	$V_{GS} = 10V, I_D = 15A$	$R_{DS(on)}$	-	120	130	mΩ
Input Capacitance	$V_{DS} = 50V, V_{GS} = 0V, f = 1MHz$	C_{iss}	-	1950	-	pF
Output Capacitance		C_{oss}	-	245	-	pF
Reverse Transfer Capacitance		C_{rss}	-	29	-	pF
Turn-on Delay Time(Note2)	$V_{DS} = 300V, I_D = 30A, R_G = 25\Omega$	$t_{d(ON)}$	-	30	-	ns
Rise Time(Note2)		t_r	-	45	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	145	-	ns
Fall Time(Note2)		t_f	-	36	-	ns
Total Gate Charge(Note2)	$V_{DS} = 480V, V_{GS} = 10V, I_D = 30A$	Q_G	-	50	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	10	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	14	-	nC

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

Characteristics	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		I_S	-	-	30	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	90	A
Drain-Source Diode Forward Voltage	$V_{GS} = 0V, I_S = 30A, T_J = 25^\circ C$	V_{SD}	-	-	1.4	V
Reverse Recovery Time	$V_R = 100V, I_S = 30A, di/dt = 100A/\mu s$	t_{rr}	-	370	-	nS
Reverse Recovery Charge		Q_{rr}	-	6.4	-	μC

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

RATINGS AND CHARACTERISTIC CURVES

Figure1. Output Characteristics

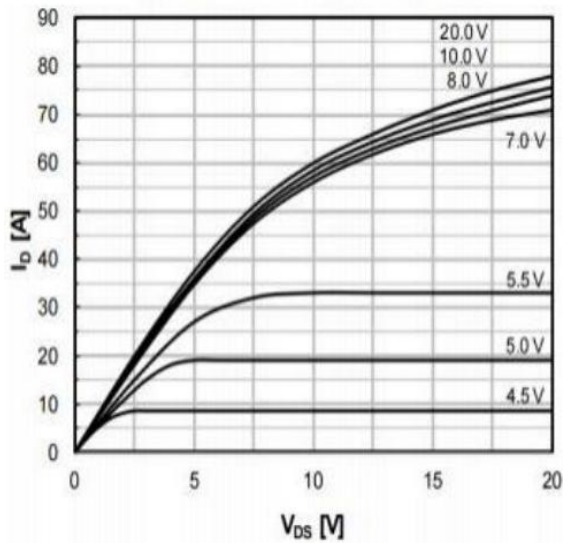


Figure2. Transfer Characteristics

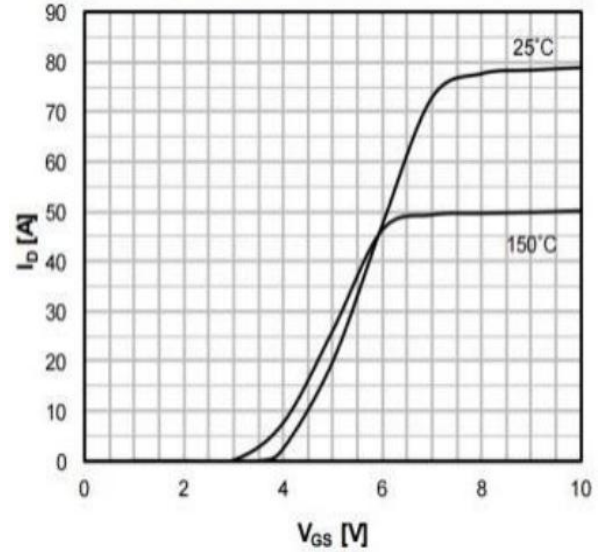


Figure 3. On-Resistance VS.Drain Current

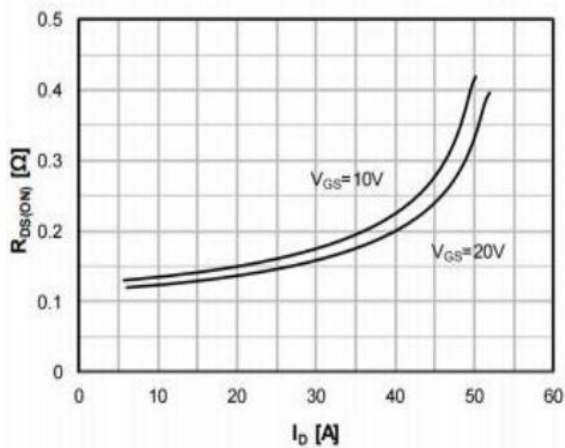


Figure 4. Capacitance

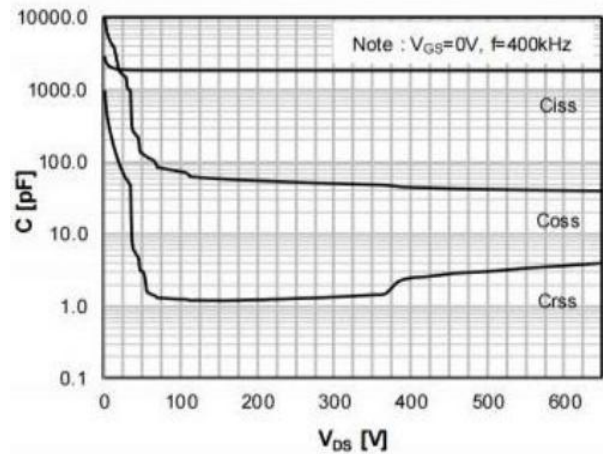


Figure 5. Gate Charge

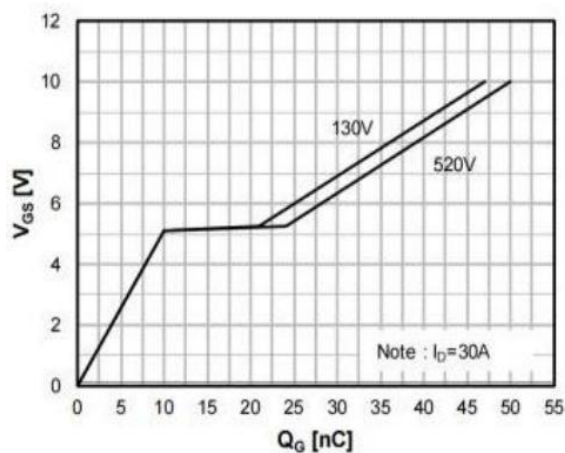
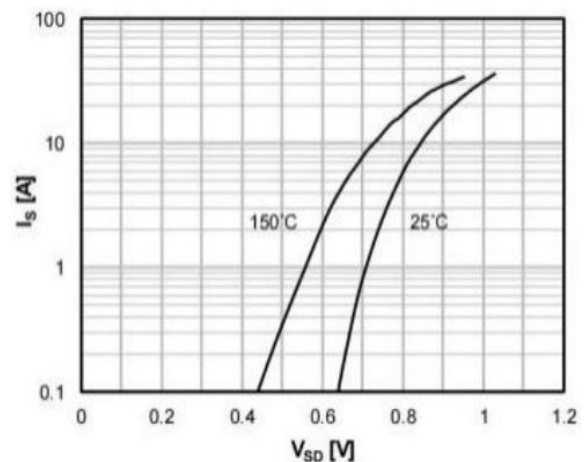


Figure 6. Body Diode Forward Voltage



RATINGS AND CHARACTERISTIC CURVES

Figure 7. On-Resistance vs. Junction Temperature

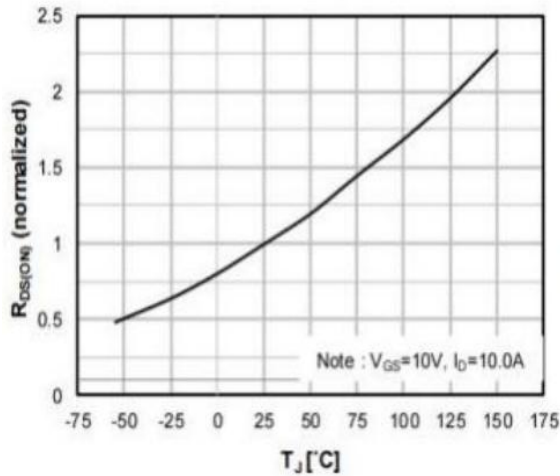


Figure 8. Breakdown Voltage vs. Junction Temperature

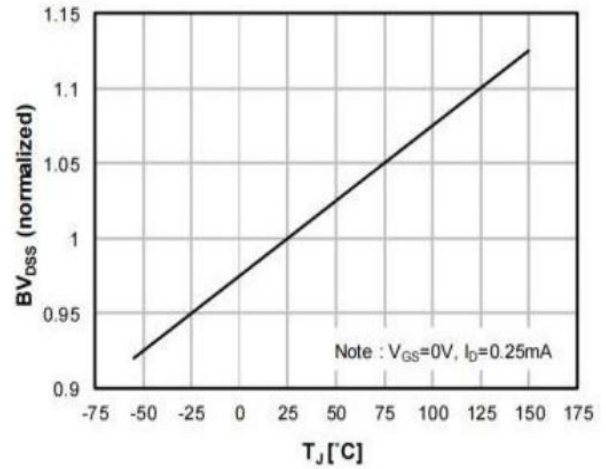


Figure 9. Safe operation area

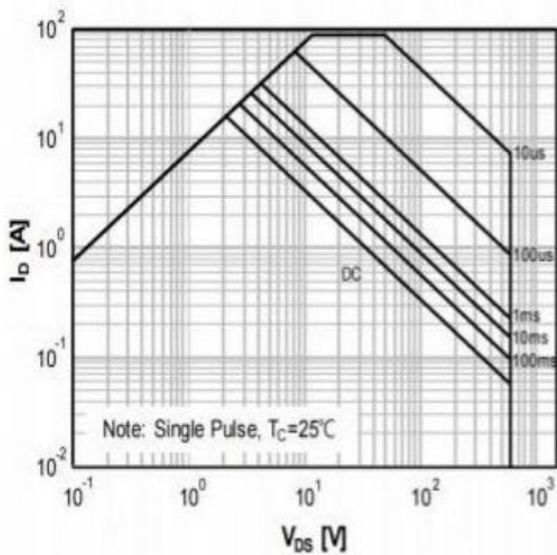
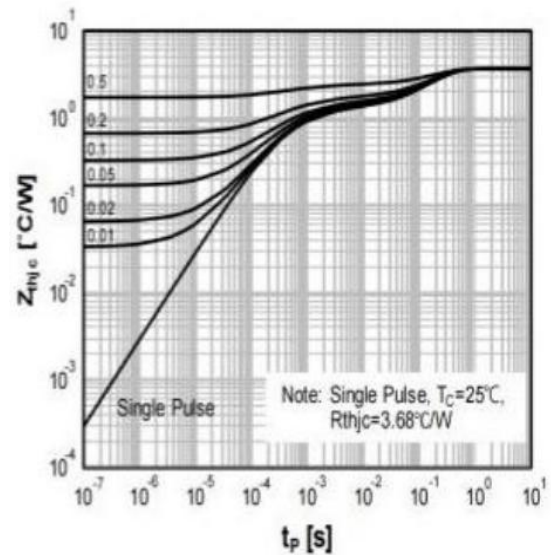
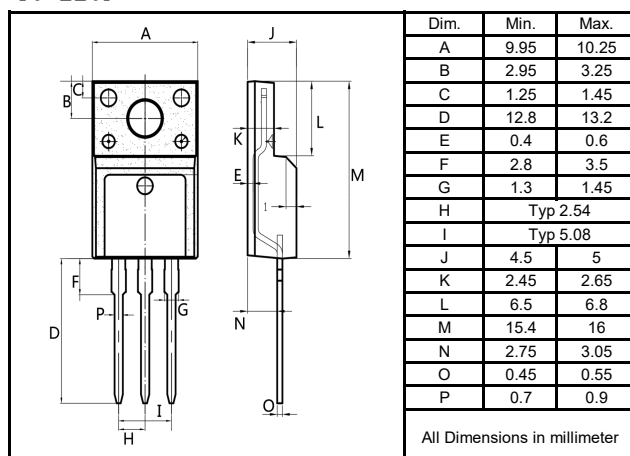


Figure 10. Transient Thermal Impedance

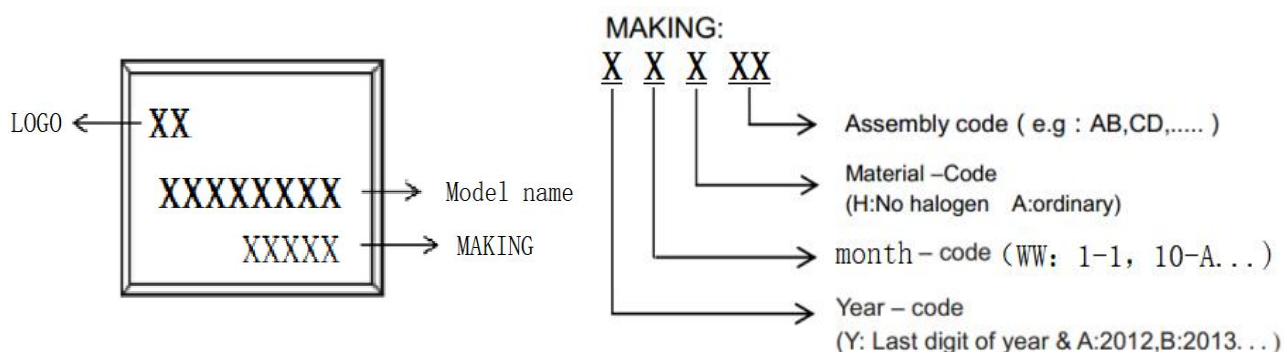


Package Outline Dimensions millimeters

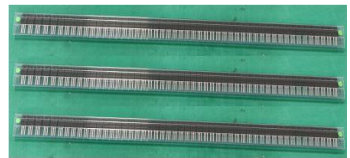
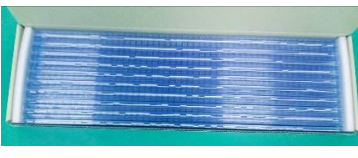
TO-220F



Marking on the body



packing instruction

PKG	最小包装	内盒	外箱
TO-220F			
	50pcs/管	1000pcs/盒	5000pcs/箱

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 poer exceeding normal rated

poer; 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.