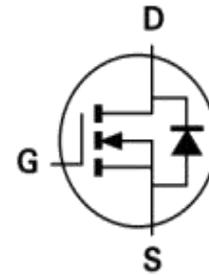


MAIN CHARACTERISTICS

I_D	7A
V_{DSS}	600V
RDSON-typ VGS=10V	530m Ω

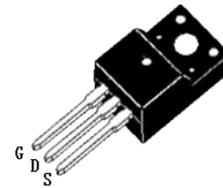


FEATURES

- 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



TO-220F

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
LC60R600F	TO-220F	LC60R600F	Tube

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	7	A
Pulsed Drain Current (Note1)	I_{DM}	21	A
Power Dissipation	P_D	28	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	160	mJ
Operating Temperature Range	T_J	-50 to +150	°C
Storage Temperature Range	T_{STG}	-50 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	4.5	°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

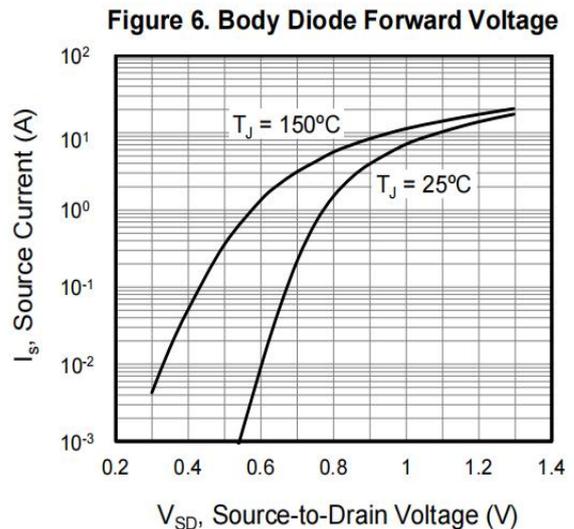
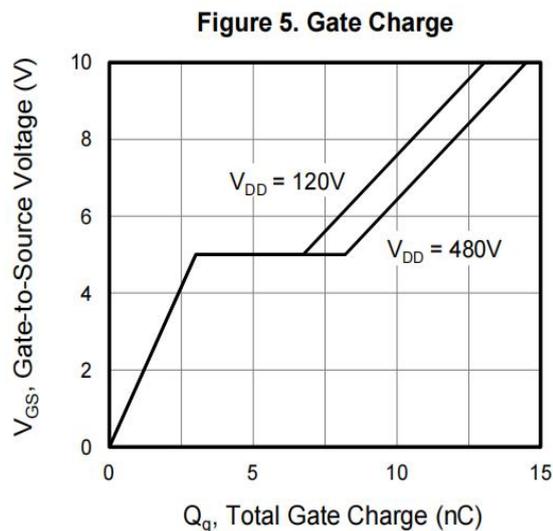
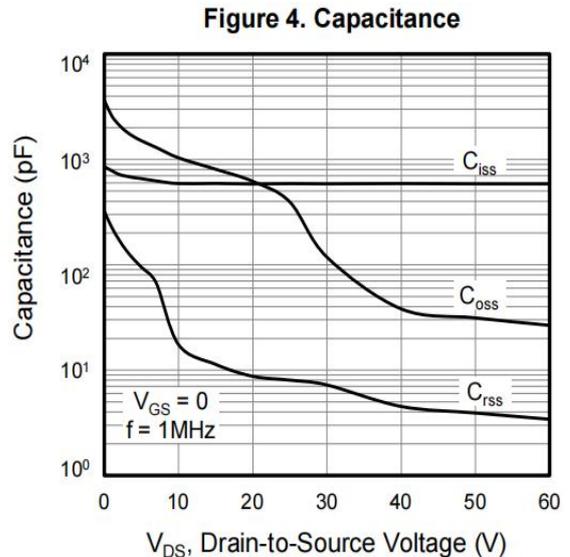
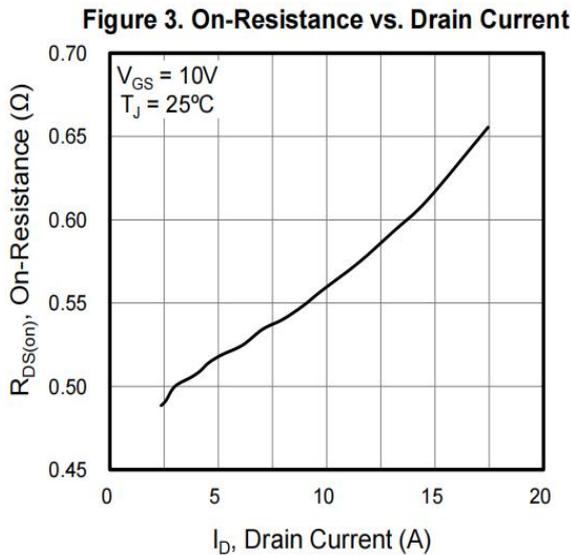
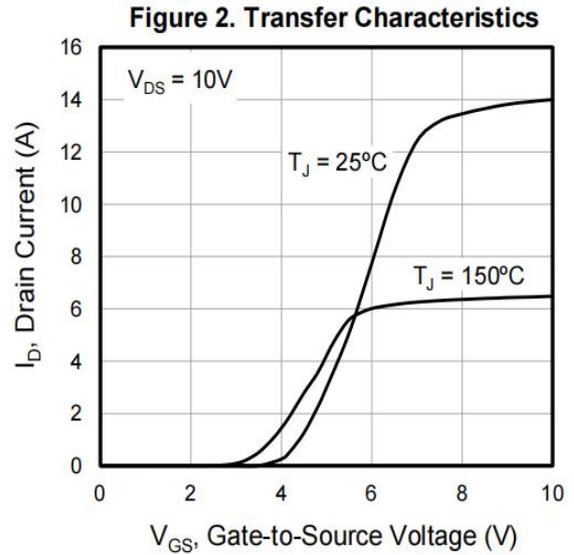
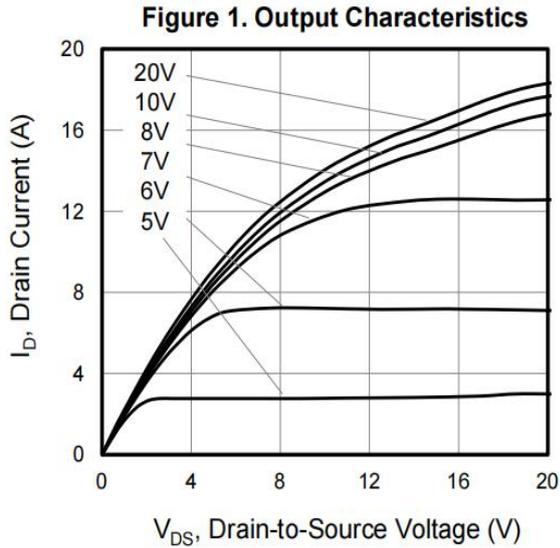
Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250 \mu A$	BV_{DSS}	600	-	-	V
Drain-Source Leakage Current	$V_{DS} = 600V, V_{GS} = 0V$	I_{DSS}	-	-	1	μA
Gate Leakage Current	$V_{GS} = \pm 30V, V_{DS} = 0V$	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu A$	$V_{GS(th)}$	2	-	4	V
Drain-Source On-State Resistance	$V_{GS} = 10V, I_D = 2.5A$	$R_{DS(on)}$	-	530	650	mΩ
Input Capacitance	$V_{DS} = 50V, V_{GS} = 0V, f = 1MHz$	C_{iss}	-	586	-	pF
Output Capacitance		C_{oss}	-	31	-	pF
Reverse Transfer Capacitance		C_{rss}	-	4	-	pF
Turn-on Delay Time(Note2)	$V_{DD} = 400V, I_D = 7A, V_{GS} = 10V, R_G = 25\Omega$	$t_{d(ON)}$	-	39	-	ns
Rise Time(Note2)		t_r	-	25	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	100	-	ns
Fall Time(Note2)		t_f	-	18	-	ns
Total Gate Charge(Note2)	$V_{DS} = 480V, V_{GS} = 10V, I_D = 7A$	Q_G	-	14.5	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	3	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	5.2	-	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 (Note 2)		I_S	-	-	7	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	21	A
Drain-Source Diode Forward Voltage	$V_{GS} = 0V, I_S = 7A, T_J = 25^\circ C$	V_{SD}	-	-	1.3	V
Reverse recovery time	$I_{SD} = 7A, V_{DD} = 480V, di/dt = 100A/us$	t_{rr}	-	250	-	ns
Reverse recovery charge		Q_{rr}	-	2.1	-	uC

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

RATINGS AND CHARACTERISTIC CURVES



RATINGS AND CHARACTERISTIC CURVES

Figure 7. On-Resistance vs. Junction Temperature

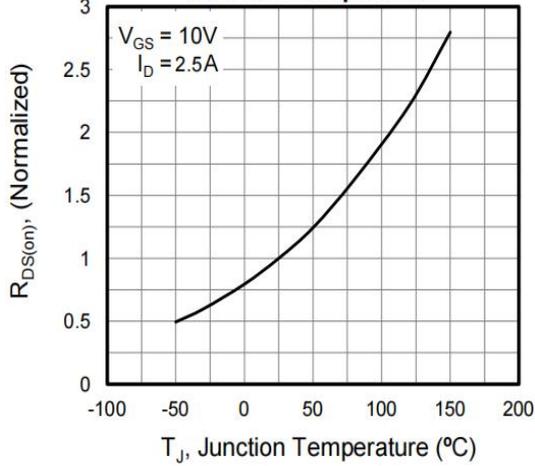


Figure 8. Threshold Voltage vs. Junction Temperature

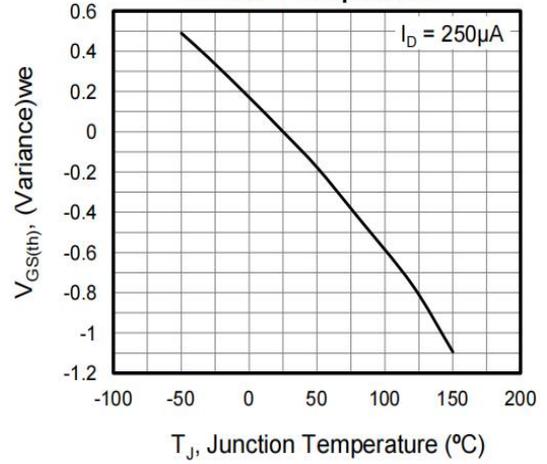


Figure 9. Transient Thermal Impedance TO-220, TO-251, TO-252, TO-262, TO-263

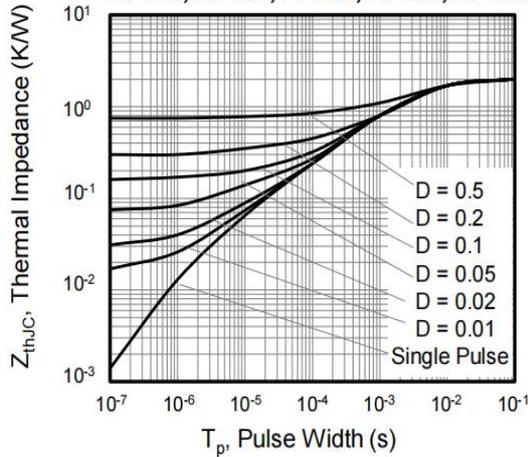
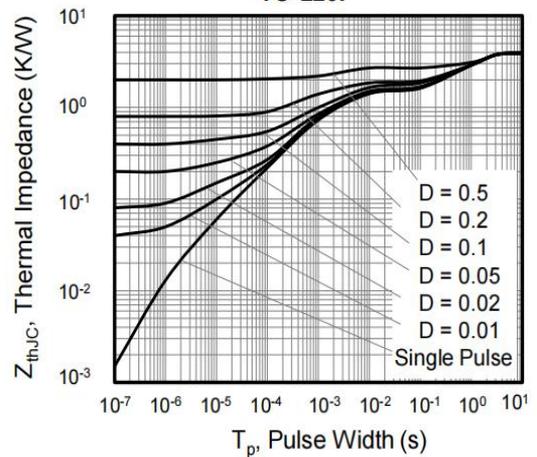
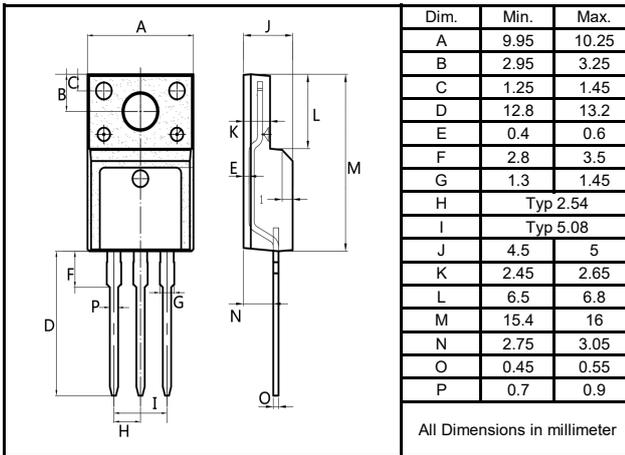


Figure 10. Transient Thermal Impedance TO-220F

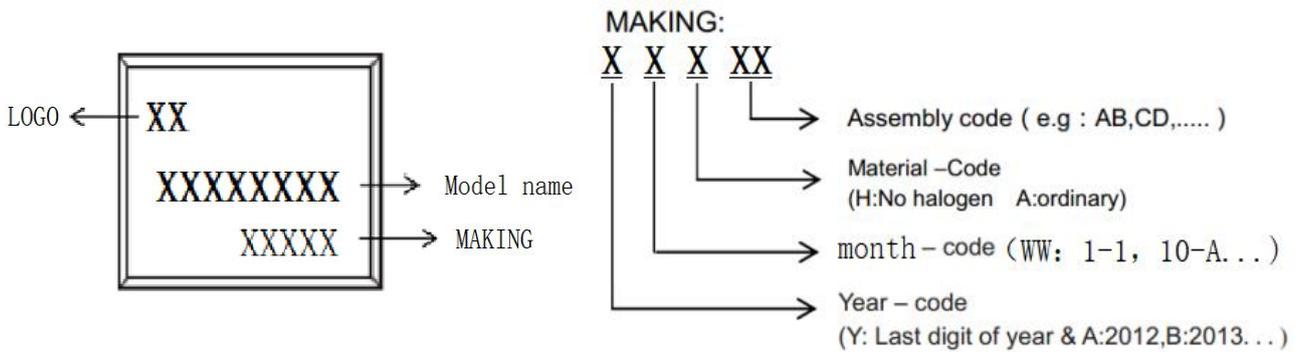


Package Outline Dimensions millimeters

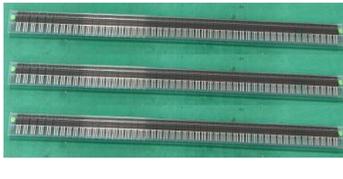
TO-220F



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 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.