

MAIN CHARACTERISTICS

I_D	35A
V_{DSS}	650V
$R_{DS(on)-typ} V_{GS}=10V$	90mΩ

FEATURES

- Low gate charge
- Low C_i
- Fast switchin
- 100% avalanche tested

APPLICATIONS

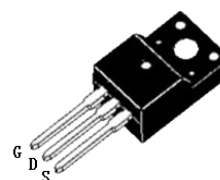
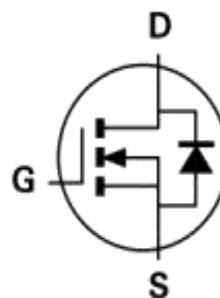
- LED/LCD/PDP TV and monitor Lighting S
- Solar/Renewable/UPS-Micro Inverter System
- Charger
- Power Supply

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
LC65R099F	TO-220F	LC65R099F	Tube



TO-220F

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
		220F	
Drain-Source Voltage	V_{DS}	650	V
Gate-Source Voltage	V_{GS}	±30	V
Continue Drain Current	I_D	35	A
Pulsed Drain Current (Note1)	I_{DM}	105	A
Power Dissipation	P_D	42	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	500	mJ
Operating Temperature Range	T_J	-50 to +150	°C
Storage Temperature Range	T_{STG}	-50 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.5	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	63	°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	$V_{GS} = 0\text{ V}, I_D = 250\text{ }\mu\text{A}$	BV_{DSS}	650	-	-	V
Drain-Source Leakage Current	$V_{DS} = 650\text{ V}, V_{GS} = 0\text{ V}$	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	$V_{DS} = V_{GS}, I_D = 250\text{ }\mu\text{A}$	$V_{GS(th)}$	2.9	-	4.9	V
Drain-Source On-State Resistance	$V_{GS}=10\text{V}, I_D=17\text{A}$	$R_{DS(on)}$	-	90	99	mΩ
Input Capacitance	$V_{DS}=100\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$	C_{iss}	-	1880	-	pF
Output Capacitance		C_{oss}	-	115	-	pF
Reverse Transfer Capacitance		C_{rss}	-	2	-	pF
Turn-on Delay Time(Note2)	$V_{DD} = 400\text{V}, I_D = 17\text{ A}, R_G = 27\Omega$	$t_{d(ON)}$	-	50	-	ns
Rise Time(Note2)		t_r	-	80	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	179	-	ns
Fall Time(Note2)		t_f	-	50	-	ns
Total Gate Charge(Note2)	$V_{DS} = 480\text{V}, V_{GS} = 10\text{V}, I_D = 17\text{ A}$	Q_G	-	69	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	17	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	45	-	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	-	-	35	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	105	A
Drain-Source Diode Forward Voltage	$V_{GS}=0\text{V}, I_S=17\text{A}, T_J=25^\circ\text{C}$	V_{SD}	-	-	1.5	V
Body Diode Reverse Recovery Time	$V_R=400\text{V}, I_F=17\text{A}, dI/dt=100\text{A}/\mu\text{s}$	T_{rr}	-	140	-	ns
Body Diode Reverse Recovery Charge		Q_{rr}	-	0.9	-	uC

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

RATINGS AND CHARACTERISTIC CURVES

Fig 1. Output Characteristics (Tj=25°C)

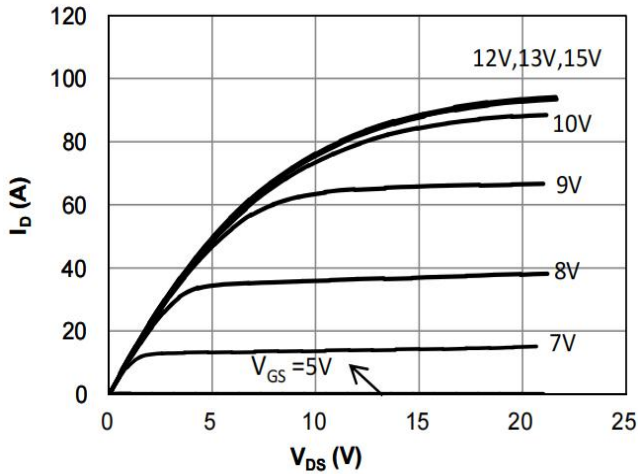


Fig 2. Output Characteristics (Tj=150°C)

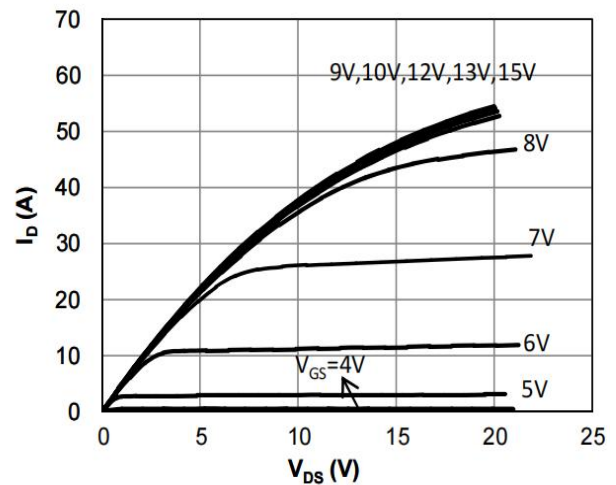


Fig 3: Transfer Characteristics

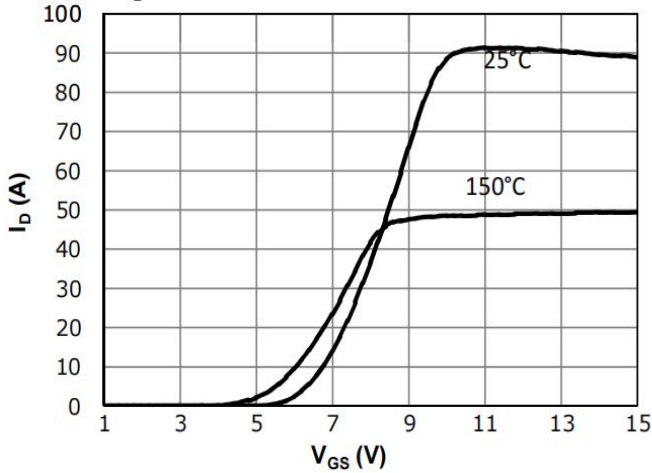


Fig 4: V_{TH} Vs T_j Temperature Characteristics

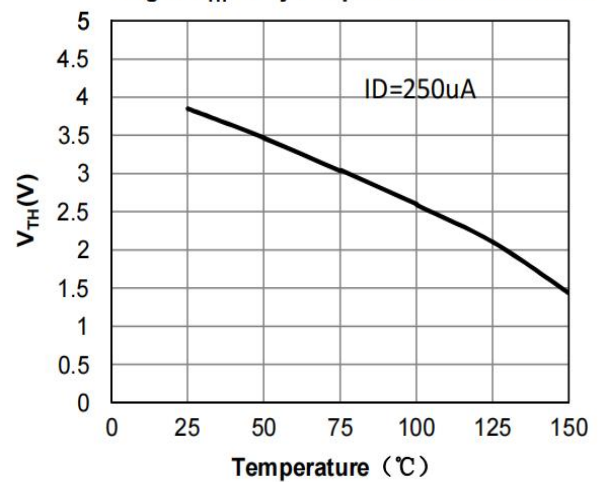


Fig 5: $R_{DS(on)}$ Vs I_{DS} Characteristics (Tj=25°C)

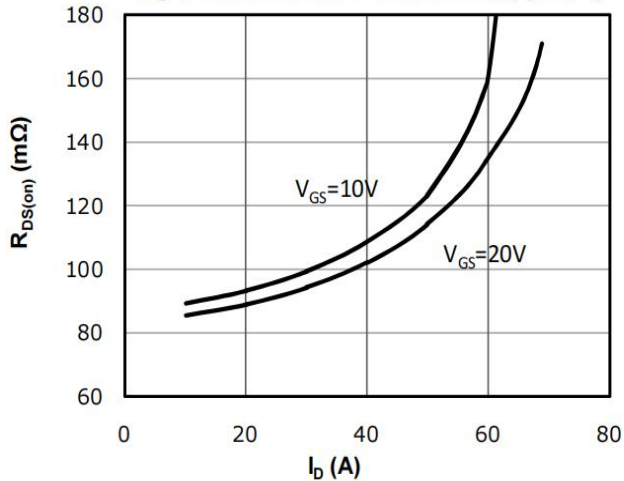
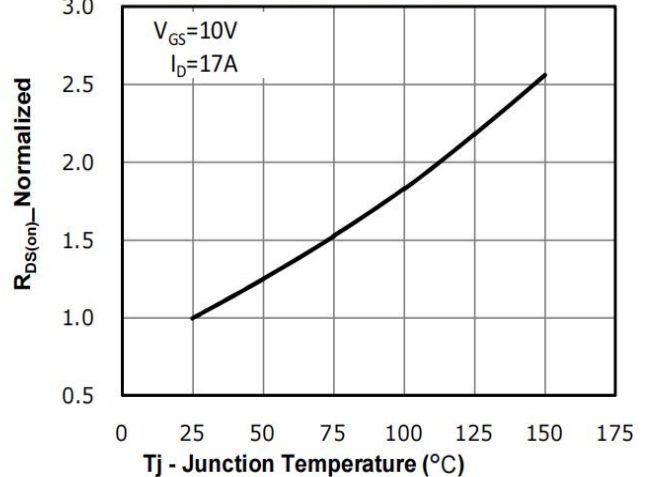


Fig 6: $R_{DS(on)}$ vs. Temperature



RATINGS AND CHARACTERISTIC CURVES

Fig 7: BVDSS vs. Temperature

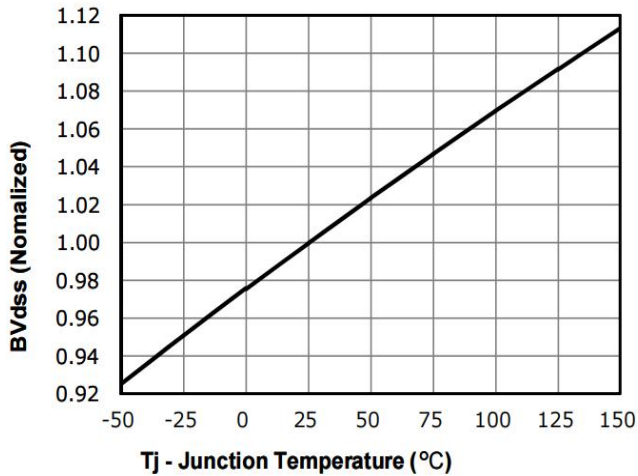


Fig 8: Rds(on) vs Gate Voltage

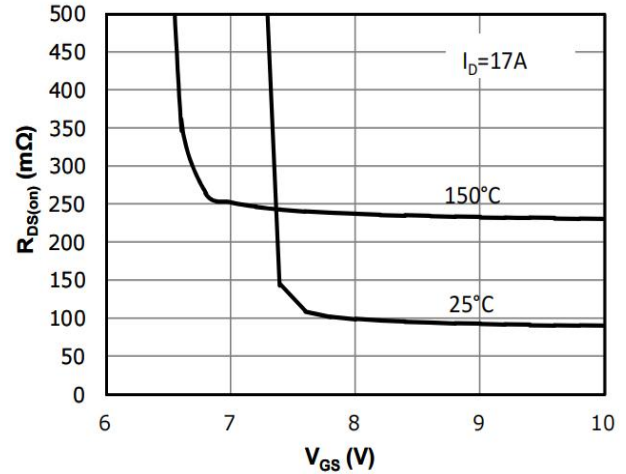


Fig 9: Body-diode Forward Characteristics

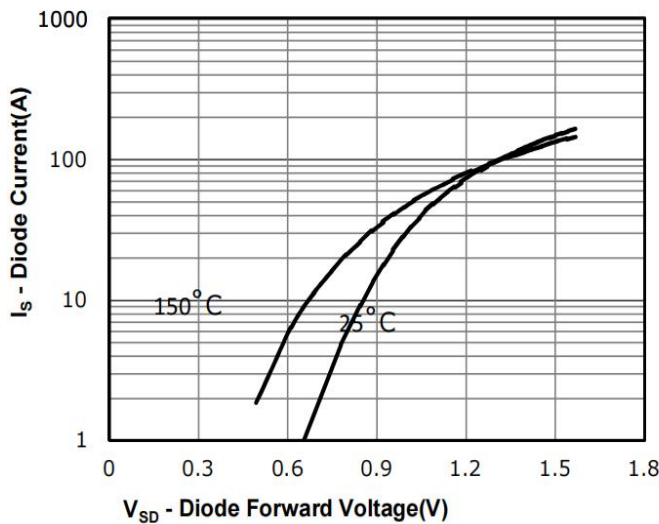


Fig 10: Gate Charge Characteristics

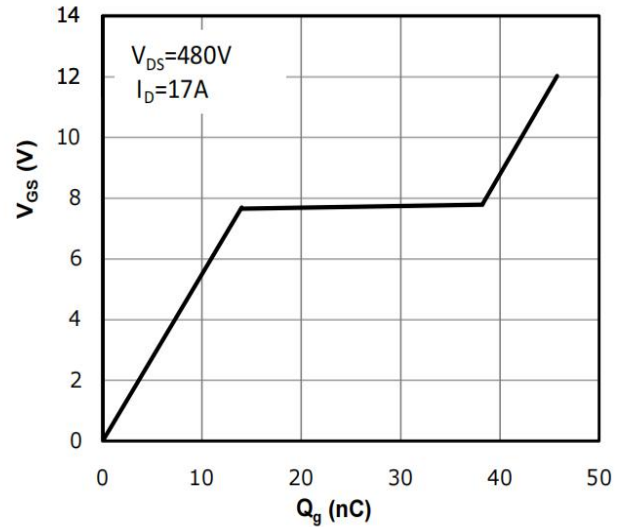


Fig 11: Capacitance Characteristics

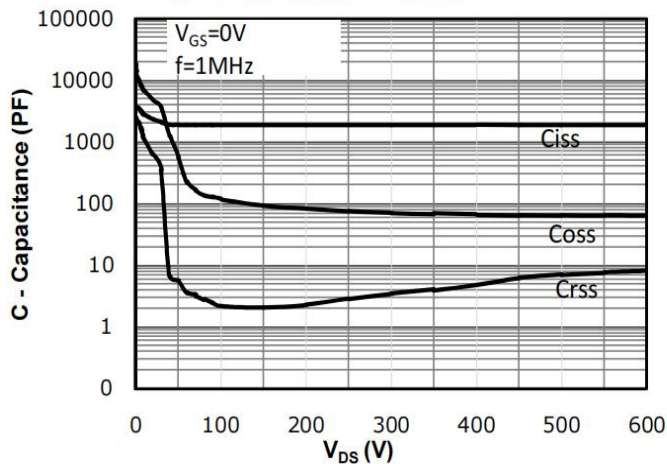
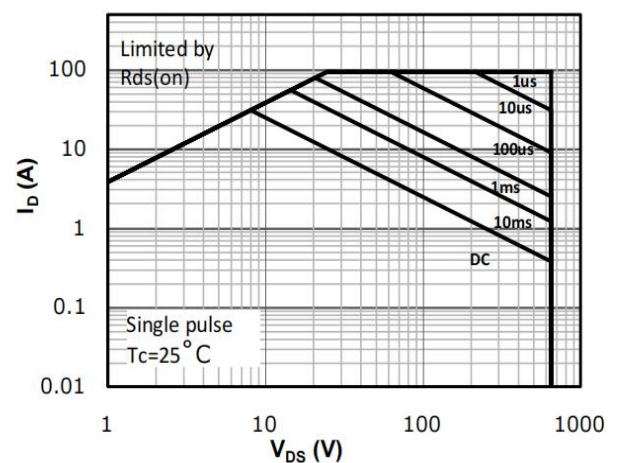
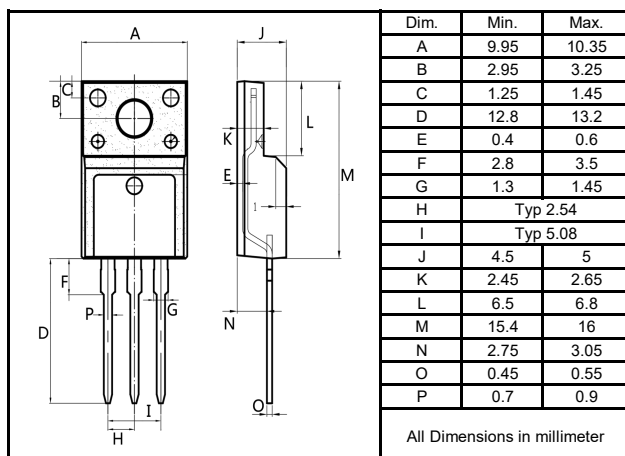


Fig 12: Safe Operating Area

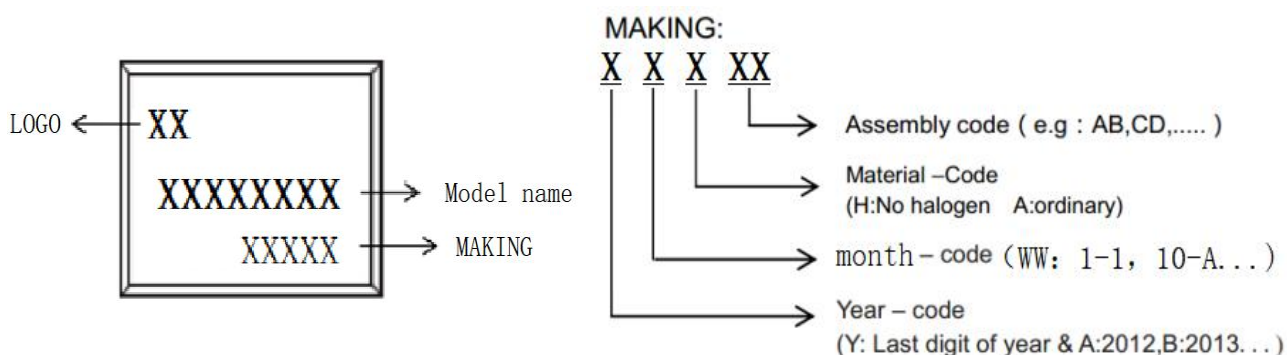


Package Outline Dimensions millimeters

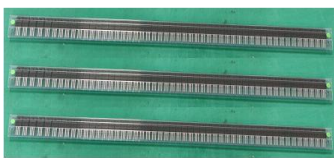
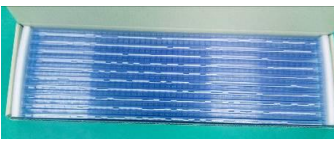
TO-220F



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.