

MAIN CHARACTERISTICS

I_D	43A
V_{DSS}	650V
RDSON-typ VGS=10V	72mΩ

FEATURES

- Fast Switching
- Low ON Resistance
- Low Gate Charge
- 100% Single Pulse avalanche energy Test

APPLICATIONS

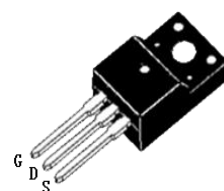
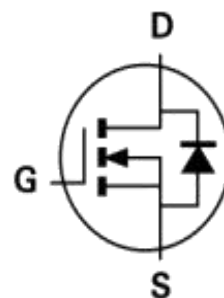
- Switch Mode Power Supply(SMPS)
- Uninterruptible Power Supply(UPS)
- Power Factor Correction(PFC)

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
LCF65R075F	TO-220F	LCF65R075F	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	43	A
Pulsed Drain Current (Note1)	I_{DM}	172	A
Power Dissipation	P_D	335	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	130	mJ
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.36	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62	°C/W

Note1:Pulse test: 300 μ s 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	$V_{GS} = 0 \text{ V}, I_D = 250 \mu\text{A}$	BV_{DSS}	650	-	-	V
Drain-Source Leakage Current	$V_{DS} = 650 \text{ V}, V_{GS} = 0 \text{ V}$	I_{DSS}	-	-	5	μA
Gate Leakage Current	$V_{GS} = \pm 30 \text{ V}, V_{DS} = 0 \text{ V}$	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	$V_{GS(th)}$	3	-	4.5	V
Drain-Source On-State Resistance	$V_{GS} = 10 \text{ V}, I_D = 21.5 \text{ A}$	$R_{DS(on)}$	-	72	80	m Ω
Input Capacitance	$V_{DS} = 200 \text{ V}, V_{GS} = 0 \text{ V}, f = 100 \text{ KHz}$	C_{iss}	-	4100	-	pF
Output Capacitance		C_{oss}	-	106	-	pF
Reverse Transfer Capacitance		C_{rss}	-	6.1	-	pF
Turn-on Delay Time(Note2)	$V_{GS} = 10 \text{ V}, R_G = 24 \Omega, V_{DS} = 325 \text{ V}, I_D = 43 \text{ A}$	$t_{d(ON)}$	-	77	-	ns
Rise Time(Note2)		t_r	-	116	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	193	-	ns
Fall Time(Note2)		t_f	-	78	-	ns
Total Gate Charge(Note2)	$V_{GS} = 10 \text{ V}, V_{DS} = 520 \text{ V}, I_D = 43 \text{ A}$	Q_G	-	95	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	35	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	42	-	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	-	-	43	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	172	A
Drain-Source Diode Forward Voltage	$V_{GS} = 0 \text{ V}, I_S = 43 \text{ A}, T_J = 25^\circ\text{C}$	V_{SD}	-	-	1.2	V
Reverse Recovery Time	$I_S = I_F, I_{SD} = 43 \text{ A}, V_{ds} = 400 \text{ V}, di/dt = 100 \text{ A}/\mu\text{s}$ (Note3)	t_{rr}	-	150	-	ns
Reverse Recovery Charge		Q_{rr}	-	1055	-	nC

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

图 1. 输出特性

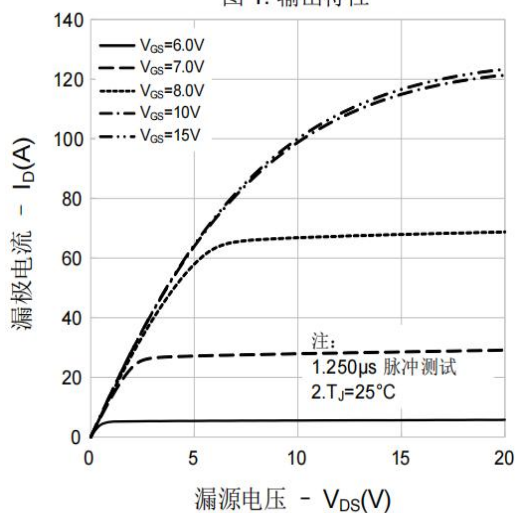


图 2. 输出特性

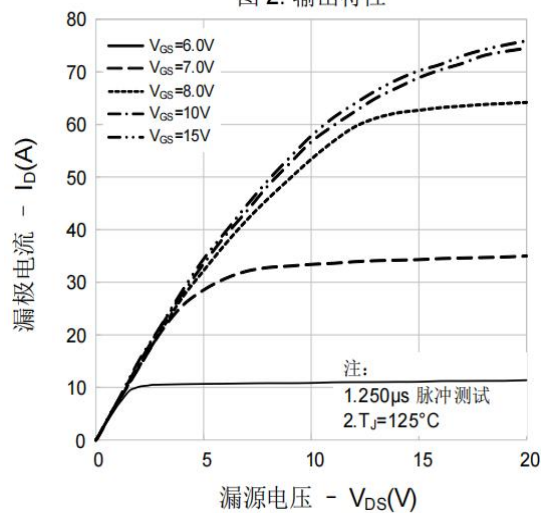


图 3. 传输特性

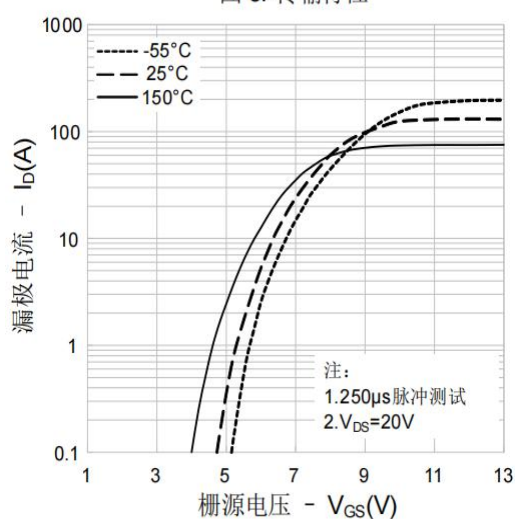


图 4. 导通电阻vs.漏极电流

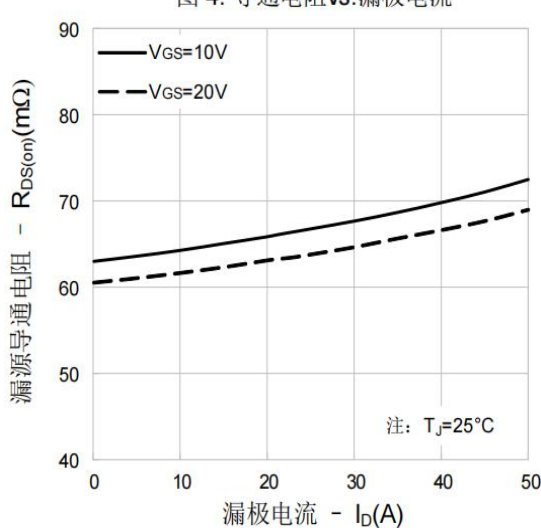


图 5. 导通电阻vs.漏极电流

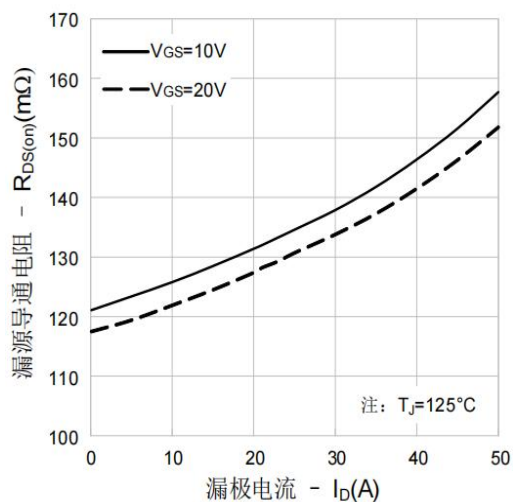


图 6. 导通电阻vs.栅源电压

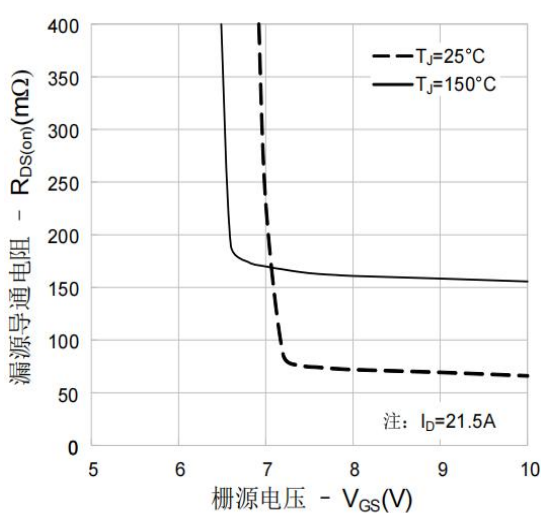


图 7. 开启电压vs.温度特性

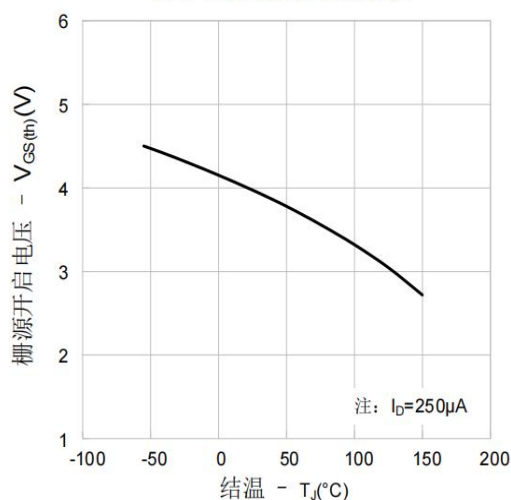


图 8. 体二极管正向压降vs. 源极电流、温度

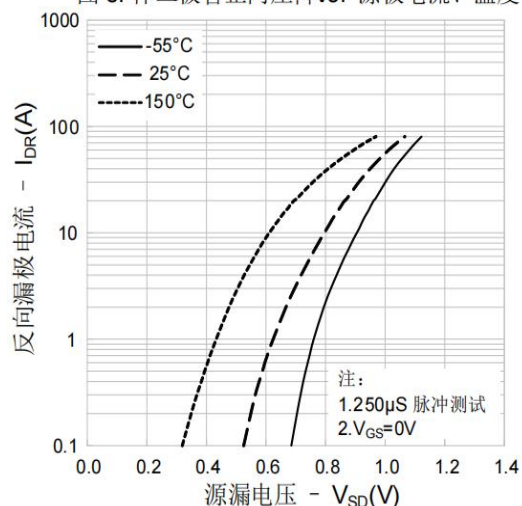


图9. 电容特性

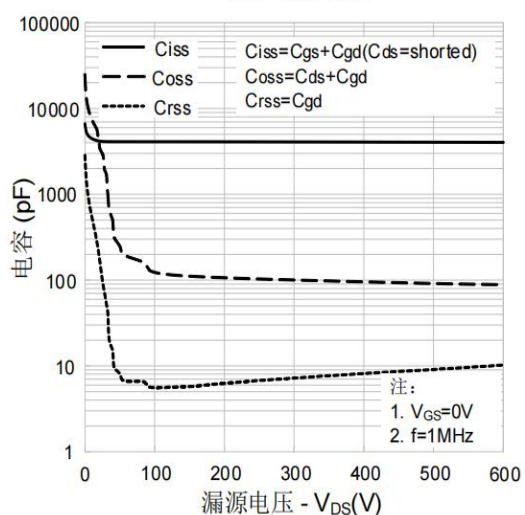


图 10. 电荷量特性

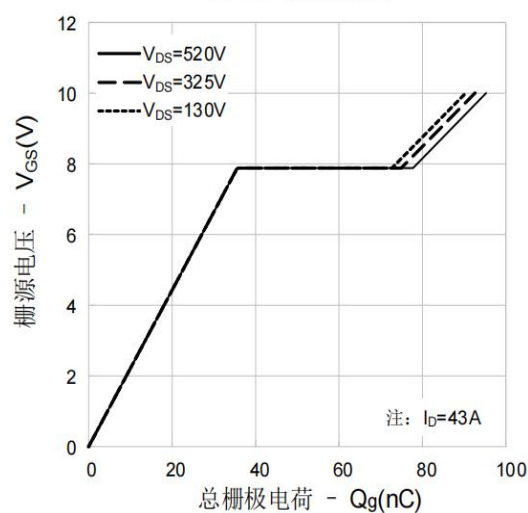


图 11. 击穿电压vs.温度特性

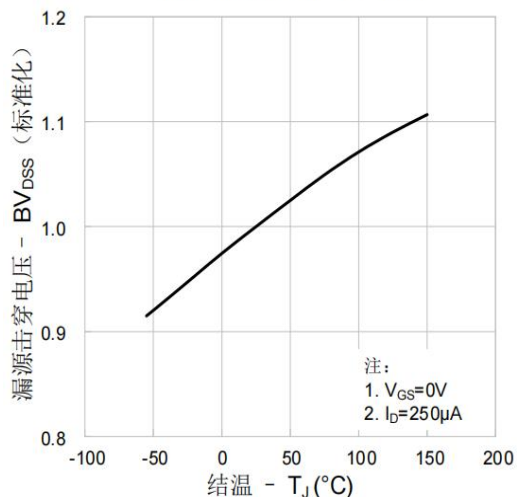


图 12. 导通电阻vs.温度特性

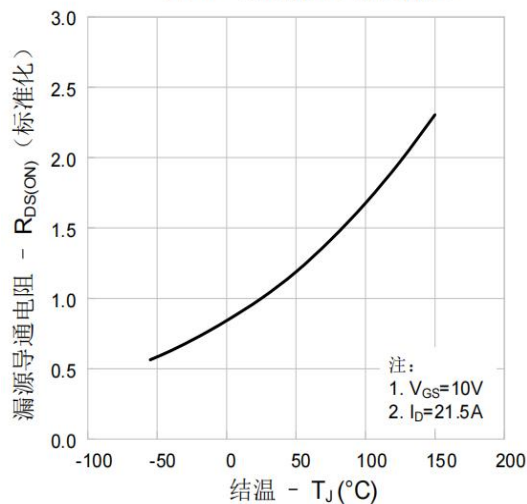


图 13. 最大安全工作区域

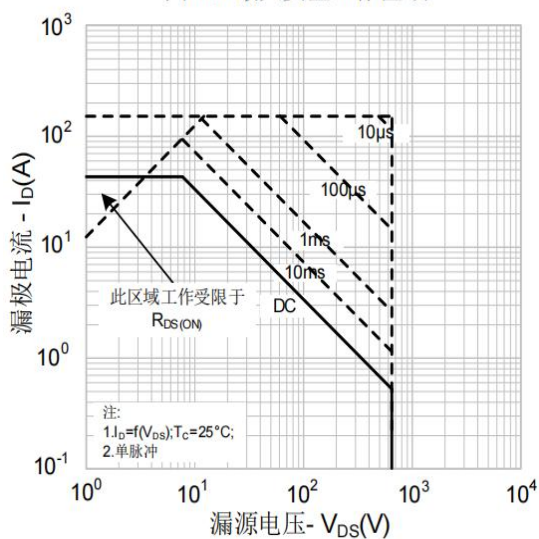


图14. 耗散功率vs.温度

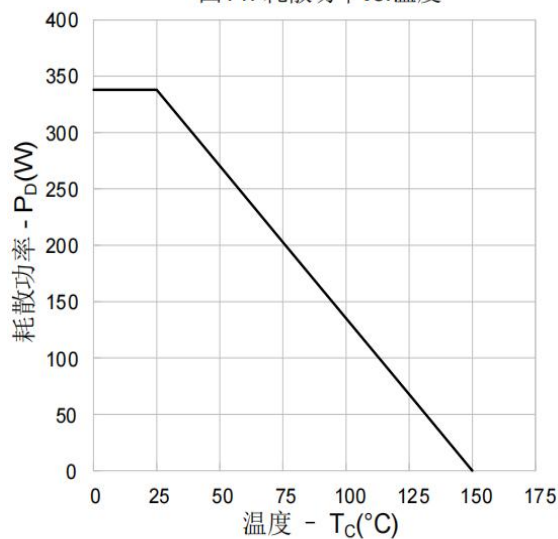


图15.漏极电流 vs. 壳温

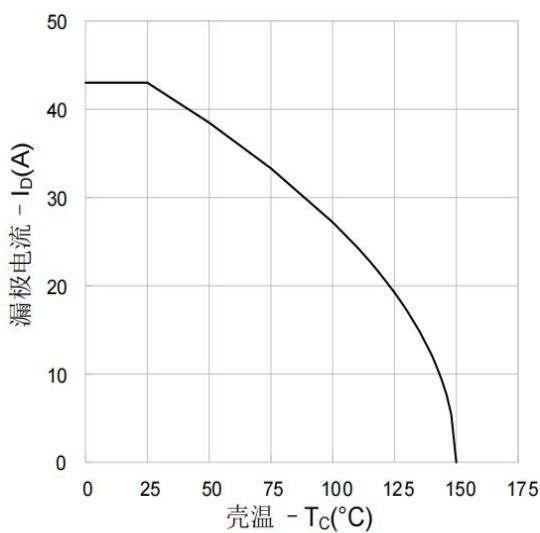
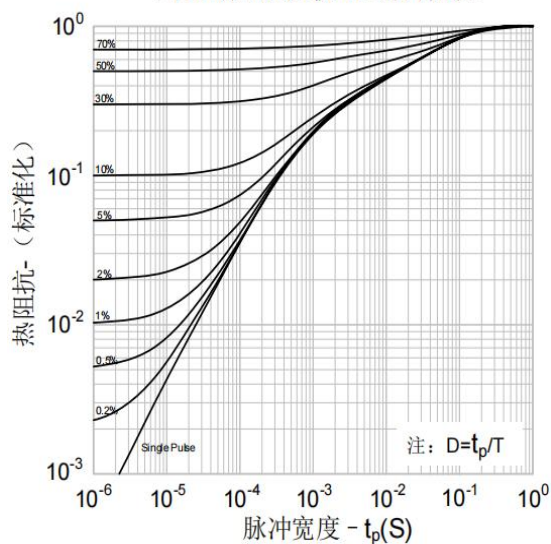
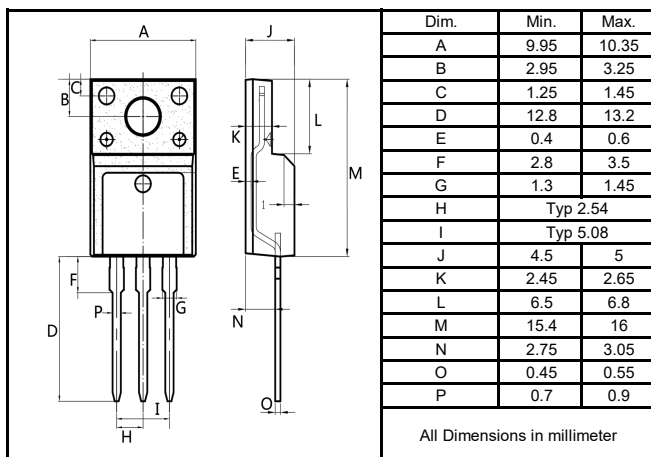


图16.瞬态热阻抗 vs. 脉冲宽度

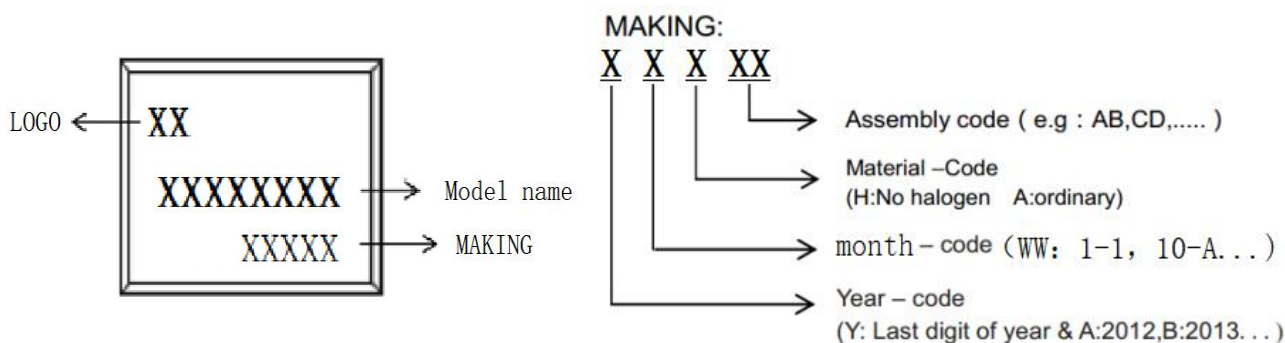


Package Outline Dimensions millimeters

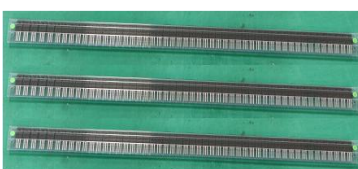
TO-220F



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