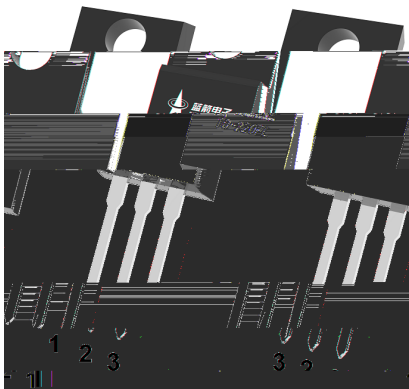
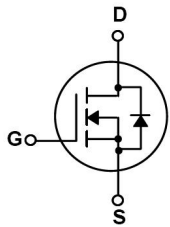


TO-220FL N MOS N-CHANNEL MOSFET in a TO-220FL Plastic Package.

Low gate charge, Low Crss , Fast switching, HF Product.

High efficiency switch mode power supplies, Electronic lamp ballasts based on half bridge, UPS.



PIN1 G

PIN 2 D

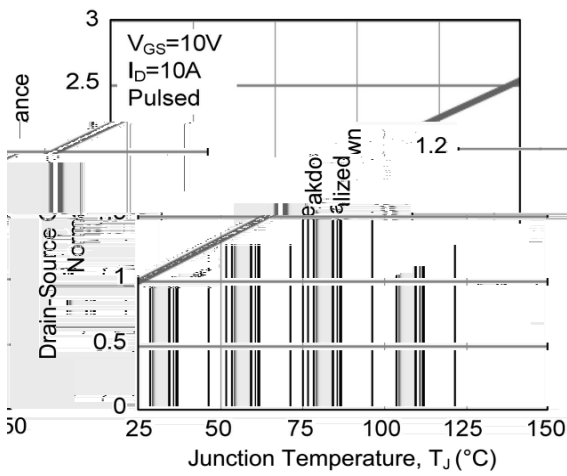
PIN 3 S

See Marking Instructions.

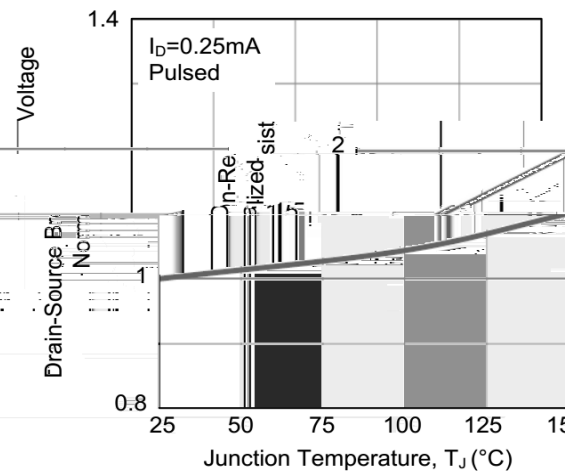
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	700	V
Drain Current	$I_D(T_c=25^{\circ}C)$	20	A
Drain Current - Pulsed	I_{DM}	40	A
Gate-Source Voltage	V_{GS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	360	mJ
Avalanche Current	I_{AS}	8.5	A
Thermal Resistance, Junction to Case	R_{JC}	3.125	/W
Thermal Resistance, Junction to Ambient	R_{JA}	62.5	/W
Power Dissipation	P_D	40	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250 A$	700			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=700V$ $V_{GS}=0V$			1.0	A
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250 A$	2.0	3.2	4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=10A$		0.45	0.55	
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=20A$			1.4	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		3280		pF
Output Capacitance	C_{oss}			128		pF
Reverse Transfer Capacitance	C_{rss}			3		pF
Total Gate Charge	Q_G	$V_{DD}=100V$ $I_D=20A$ $V_{GS}=10V$		54		nC
Gate-Source Charge	Q_{GS}			11		nC
Gate-Drain Charge	Q_{GD}			12		nC

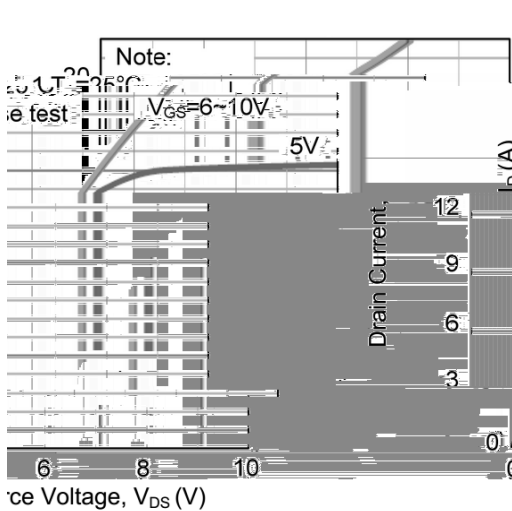
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=100V$ $I_D=20A$ $V_{GS}=10V$ $R_G=25$		28		ns
Turn-On Rise Time	t_r			35		
Turn-Off Delay Time	$t_{d(off)}$			135		
Turn-Off Fall Time	t_f			73		
Maximum Continuous Drain-Source Diode Forward Current	I_S				20	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}				40	A
Reverse Recovery Time	t_{rr}	$V_{GS} = 0V$ $I_S = 20A$ $dI_F/dt = 100 A/s$		482		ns
Reverse Recovery Charge	Q_{rr}			8.5		μC



1. Drain-Source On-Resistance vs. Junction Temperature



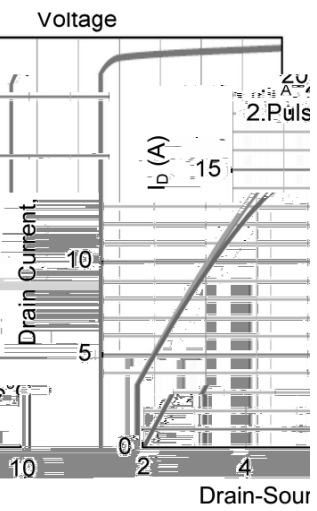
2. Breakdown Voltage vs. Junction Temperature



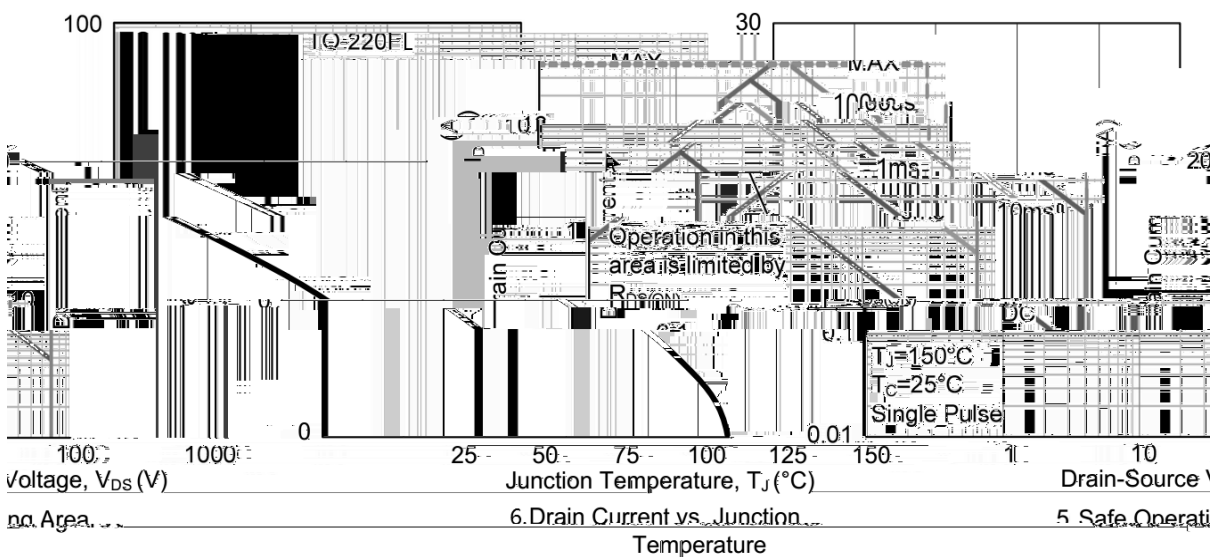
3. Drain Current vs. Drain-Source Voltage



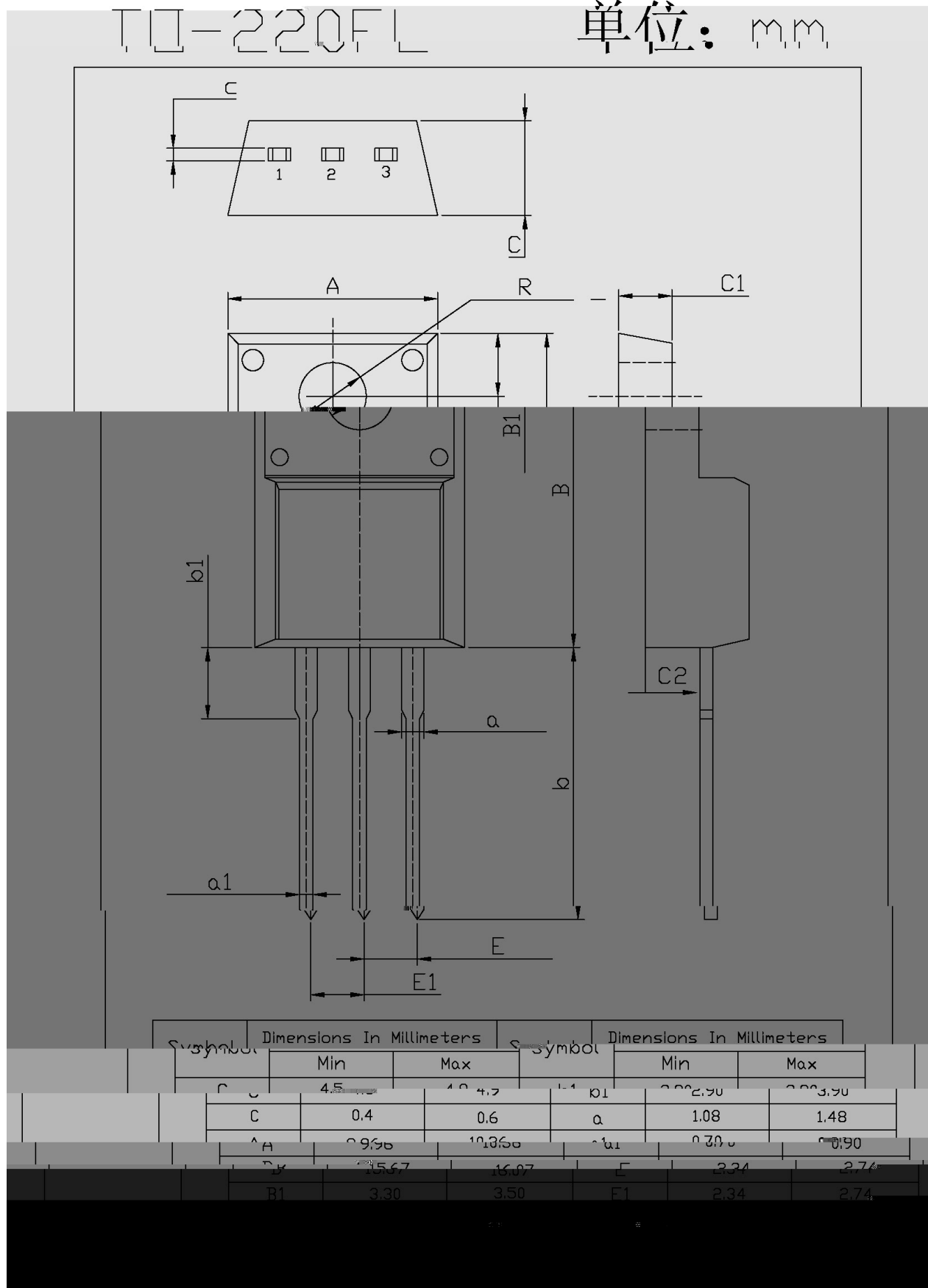
4. Drain Current vs. Gate-Source Voltage

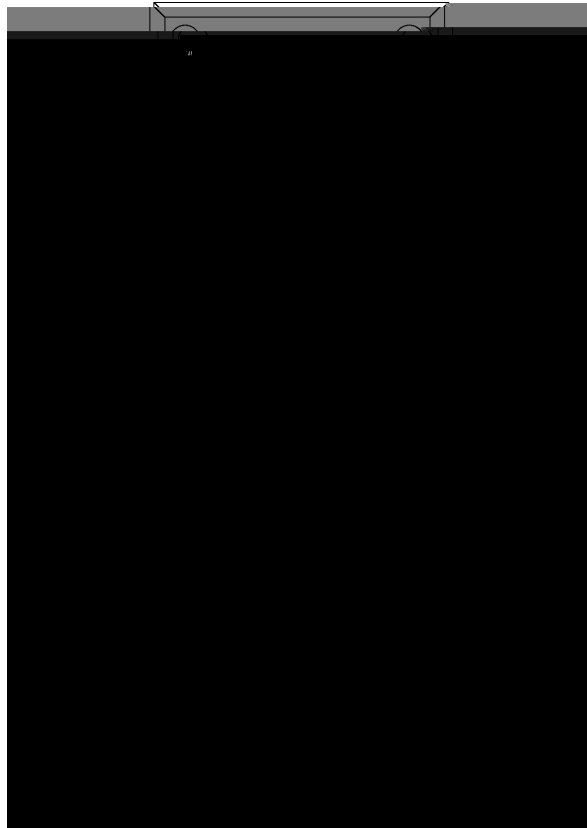


5. Safe Operating Area



6. Drain Current vs. Junction Temperature



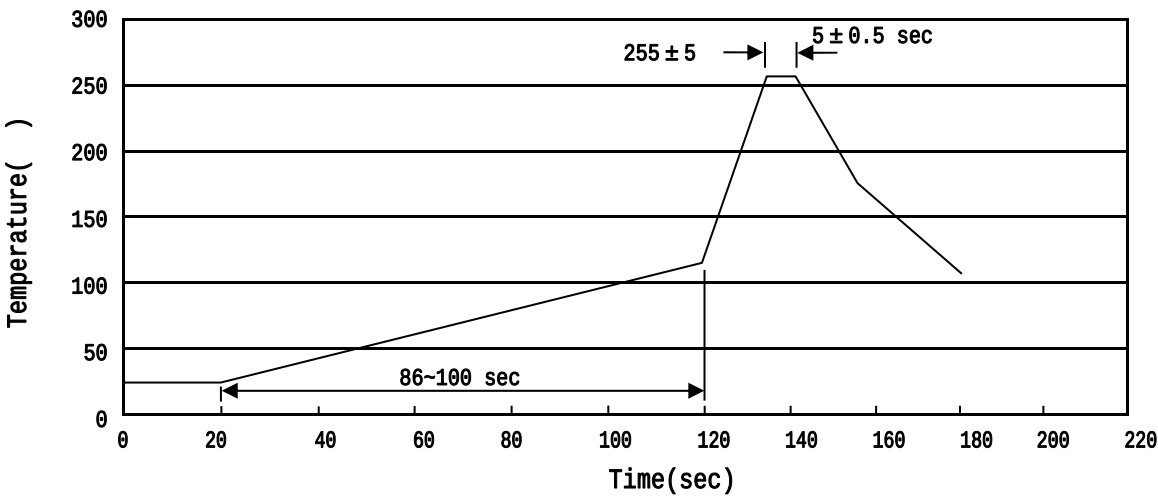


Note:

BR: Company Code

20N70: Product Type Code

****: Lot No. Code, code change with Lot No



- Note:
1. Preheating: 25~150 °C, Time: 60~90sec.
2. Peak Temp.: 255 ± 5 °C, Duration: 5 ± 0.5sec.
3. Cooling Speed: 2~10 °C/sec.
- 1

25 150

60 90sec;

2

255 5

5 0.5sec;

3

2 10

/sec.

270 ± 5

10 ± 1 sec.

Temp.: 270 ± 5

Time: 10 ± 1 sec

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
TO-220FL	50	20	1,000	5	5,000	532×33×7.0	555×164×50	575×290×180