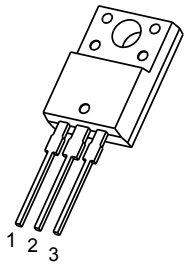
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

TO-220F Plastic-Encapsulate MOSFETS

CJPF55P30 P-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
-55V	40mΩ@-10V	-30A

TO-220F



1. GATE
2. DRAIN
3. SOURCE

DESCRIPTION

The CJPF55P30 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications.

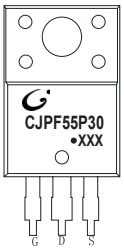
FEATURES

- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation

APPLICATIONS

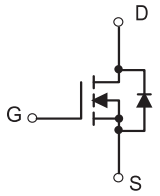
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible Power Supply(UPS)

MARKING



CJPF55P30= Device code
Solid dot = Green molding compound device, if none, the normal device
XXX=Date Code

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-55	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-30	A
Pulsed Drain Current	I_{DM}	-120	A
Single Pulsed Avalanche Energy	E_{AS}(1)	225	mJ
Power Dissipation	P_D	2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 ~+150	℃
Lead Temperature for Soldering Purposes(1/8'' from case for 10s)	T_L	260	℃

(1).E_{AS} condition: V_{DD}=-25V,L=0.5mH, R_G=25Ω, Starting T_J = 25°C

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

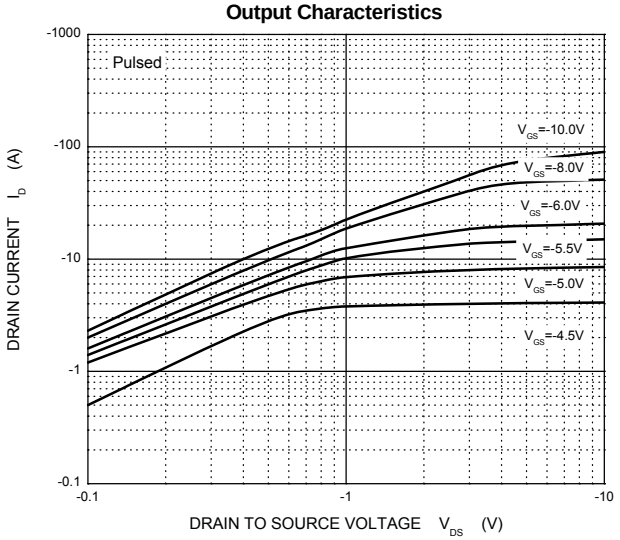
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	V_{GS} = 0V, I_D =-250μA	-55			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-55V, V_{GS} =0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
On characteristics (note1)						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-2	-3	-4	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-15A		33	40	mΩ
Forward transconductance	g_{Fs}	V_{DS} =-25V, I_D =-16A	8			S
Dynamic characteristics (note 2)						
Input capacitance	C_{iss}	V_{DS} =-30V,V_{GS} =0V, f =1MHz		3500		pF
Output capacitance	C_{oss}			240		
Reverse transfer capacitance	C_{rss}			153		
Switching characteristics (note 2)						
Total gate charge	Q_g	V_{DS}=-30V, V_{GS}=-10V, I_D=-15A		56		nC
Gate-source charge	Q_{gs}			11		
Gate-drain charge	Q_{gd}			24		
Turn-on delay time	$t_{d(on)}$	V_{DD}=-30V,V_{GS}=-10V,R_G =3Ω, I_D=-15A		12		ns
Turn-on rise time	t_r			15		
Turn-off delay time	$t_{d(off)}$			38		
Turn-off fall time	t_f			15		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note1)	V_{SD}	V_{GS} =0V, I_S=-24A			-1.2	V
Continuous drain-source diode forward current	I_S				-30	A
Pulsed drain-source diode forward current	I_{SM}				-120	A

Notes:

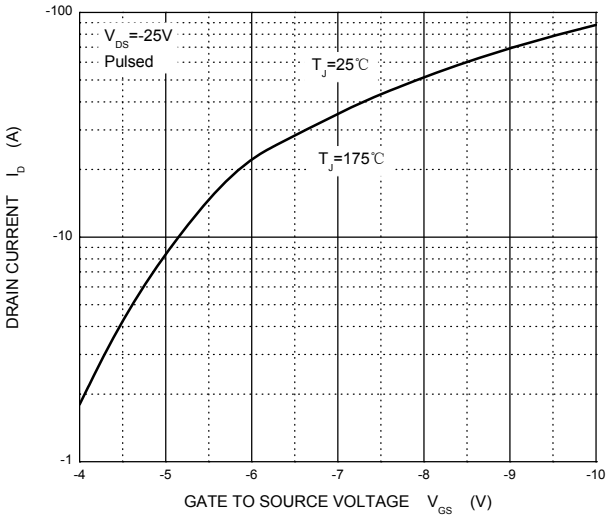
1. Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.
2. Guaranteed by design, not subject to production.

Typical Characteristics

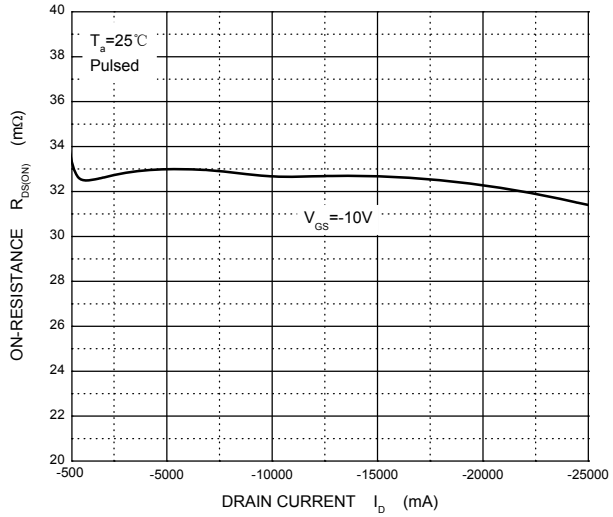
Output Characteristics



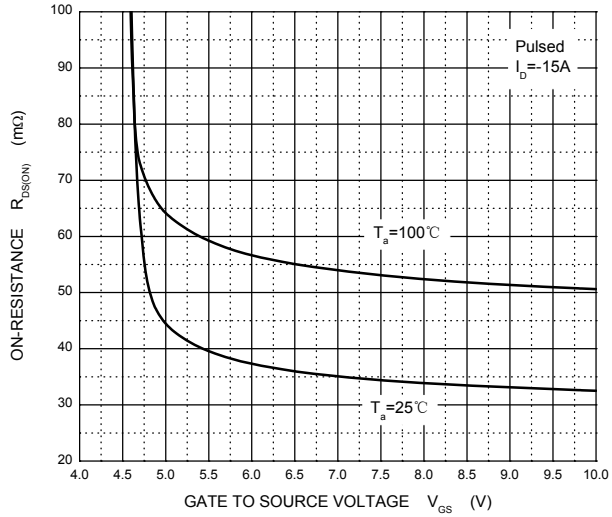
Transfer Characteristics



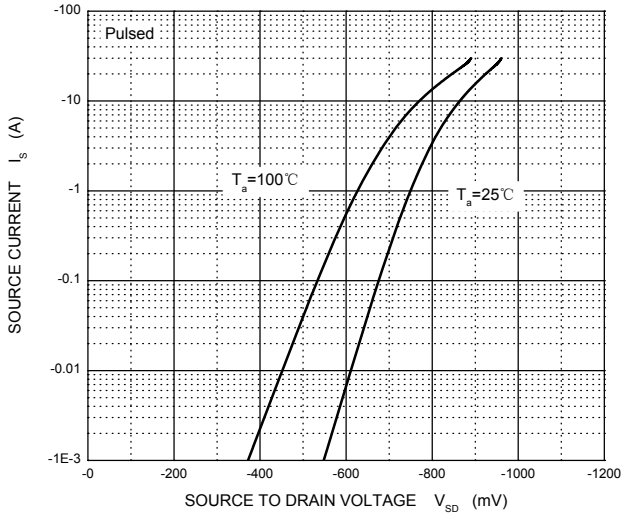
$R_{DS(ON)}$ —— I_D



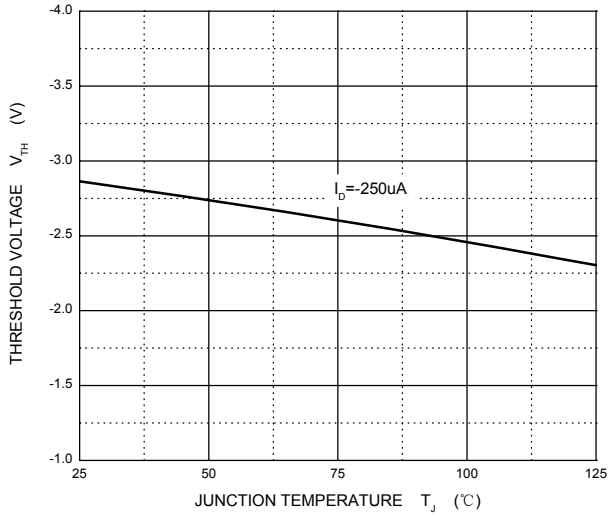
$R_{DS(ON)}$ —— V_{GS}



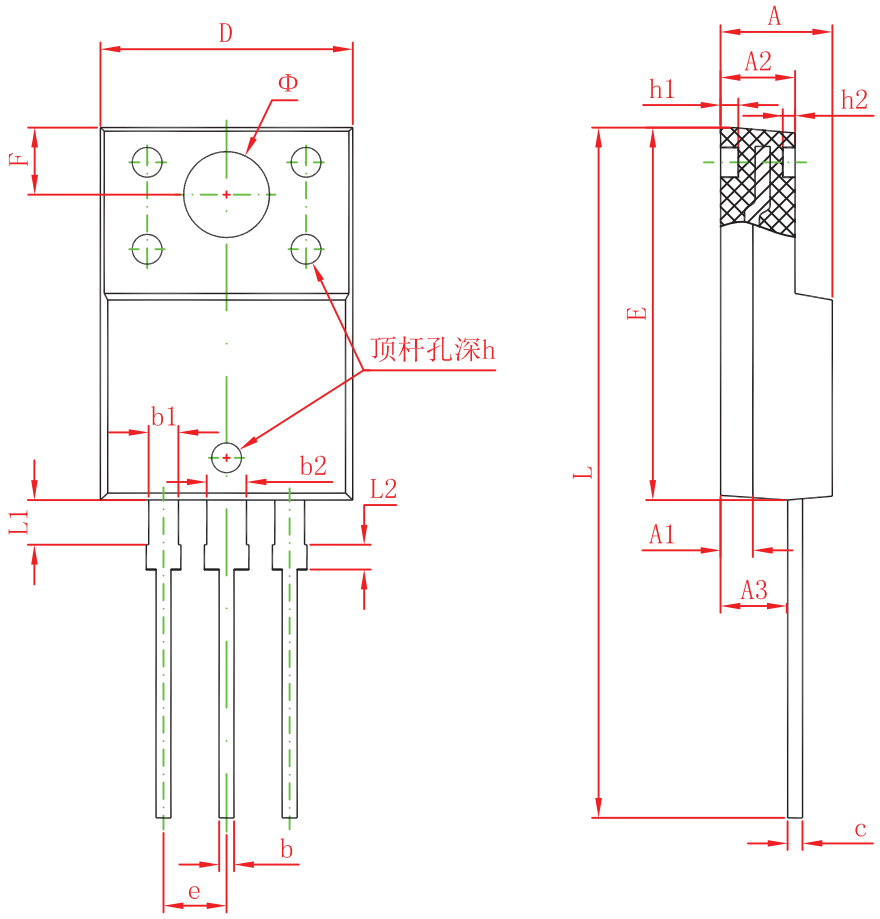
I_S —— V_{SD}



Threshold Voltage



TO-220F Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.300	4.700	0.169	0.185
A1	1.300 REF.		0.051 REF.	
A2	2.800	3.200	0.110	0.126
A3	2.500	2.900	0.098	0.114
b	0.500	0.750	0.020	0.030
b1	1.100	1.350	0.043	0.053
b2	1.500	1.750	0.059	0.069
c	0.500	0.750	0.020	0.030
D	9.960	10.360	0.392	0.408
E	14.800	15.200	0.583	0.598
e	2.540 TYP.		0.100 TYP.	
F	2.700 REF.		0.106 REF.	
Φ	3.500 REF.		0.138 REF.	
h	0.000	0.300	0.000	0.012
h1	0.800 REF.		0.031 REF.	
h2	0.500 REF.		0.020 REF.	
L	28.000	28.400	1.102	1.118
L1	1.700	1.900	0.067	0.075
L2	0.900	1.100	0.035	0.043