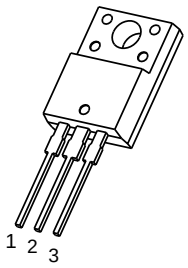
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

TO-220F Plastic-Encapsulate MOSFETS

CJPF07N65 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
650V	1.3Ω@10V	7.4A

TO-220F



1. GATE
2. DRAIN
3. SOURCE

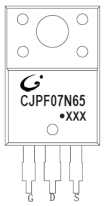
GENERAL DESCRIPTION

This advanced high voltage MOSFET is designed to stand high energy in the avalanche mode and switch efficiently. This new high energy device also offers a drain-to-source diode fast recovery time. Desighed for high voltage, high speed switching applications such as power supplies, converters, power motor controls and bridge circuits.

FEATURE

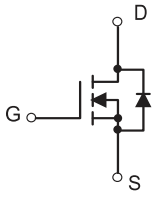
- High Current Rating
- Lower $R_{DS(on)}$
- Lower Capacitance
- Lower Total Gate Charge
- Tighter V_{SD} Specifications
- Avalanche Energy Specified
- Fast Switching Capability

MARKING



CJPF07N65= 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	Value	Unit
Drain-Source Voltage	V_{DS}	650	V
Gate-Source Voltage	V_{GS}	±30	V
Continuous Drain Current	I_D	7.4	A
Pulsed Drain Current	I_{DM}	29.6	A
Single Pulsed Avalanche Energy (note1)	E_{AS}	245	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	℃/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 ~+150	℃
Maximum Lead Temperature for Soldering Purposes , Duration for 5 Seconds	T_L	260	℃

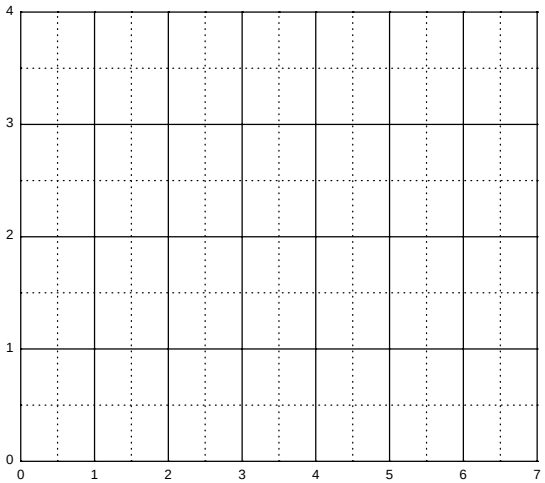
MOSFET ELECTRICAL CHARACTERISTICS

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	650			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =650V, V_{GS} =0V			10	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} 30V			100	nA
Drain-source diode forward voltage	V_{SD}	V_{GS} = 0V, I_S =7.4A			1.4	V
On characteristics (note 2)						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2	3.5	4	V
Static drain-source on-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =3.7A		1.1	1.3	Ω
Forward transconductance	g_{fs}	V_{DS} =40V, I_D =3.7A	5			S
Dynamic characteristics (note 3)						
Input capacitance	C_{iss}	V_{DS} =25V,V_{GS} =0V,f =1MHz			1400	pF
Output capacitance	C_{oss}				180	
Reverse transfer capacitance	C_{rss}				21	
Switching characteristics (note 3)						
Total gate charge	Q_g	V_{DS} =520V,V_{GS} =10V,I_D =7.4A		29	38	nC
Gate-source charge	Q_{gs}			7		
Gate-drain charge	Q_{gd}			14.5		
Turn-on delay time	$t_{d(on)}$	V_{DD}=325V, R_G=25Ω, I_D =7.4A			70	ns
Turn-on rise time	t_r				170	
Turn-off delay time	$t_{d(off)}$				140	
Turn-off fall time	t_f				130	

Notes :

1. L=10mH, I_{AS}=7A, V_{DD}=50V, V_{GS}=10V,R_G=25Ω, Starting T_J=25℃.
2. Pulse Test: Pulse width≤300μs, duty cycle ≤2%.
3. These parameters have no way to verify.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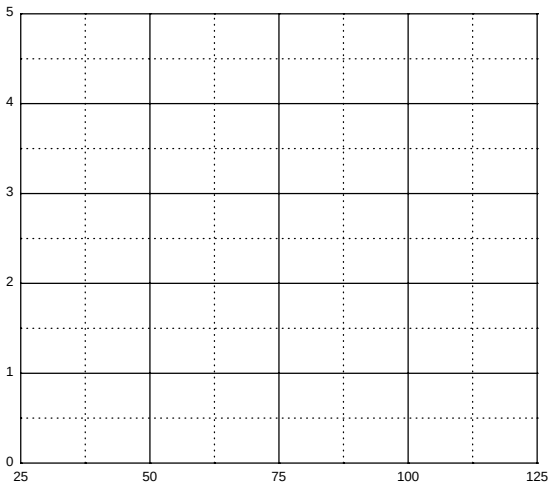
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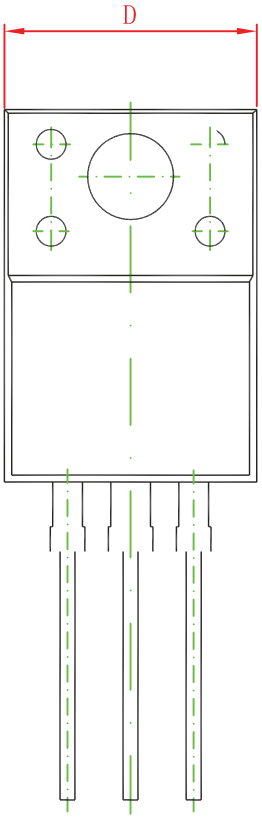
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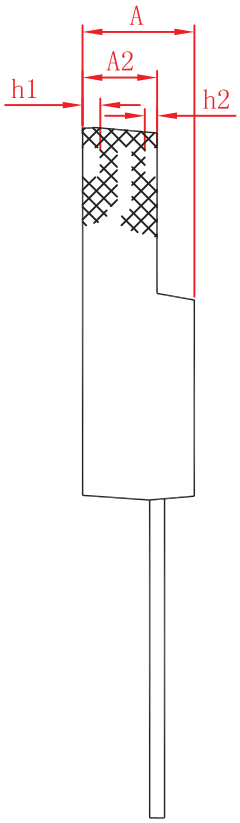
A
A2
h1
h2