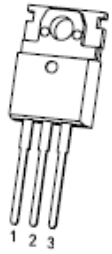
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

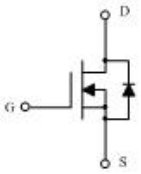
T0-220H-3L Plastic-Encapsulate MOSFETS

CJP71N90 N-Channel MOSFET

TO-220H-3L



1. GATE
2. DRAIN
3. SOURCE



DESCRIPTION

The CJP71N90 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge .This device is suitable for use in a wide variety of applications.

FEATURES

- Lead free product is acquired
- Special process technology for high ESD capability
- High density cell design for ultra low $R_{DS(on)}$
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation

APPLICATION

- Power switching application
- Hard switching and high frequency circuits
- Uninterruptible power supply

Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	71	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	90	A
Pulsed Drain Current **(note 1)**	I_{DM}	320	A
Thermal Resistance from Junction to Ambient **(note 2)**	$R_{\theta JA}$	62.5	℃/W
Single Pulsed Avalanche Energy (note5)	E_{AS}	580	mJ
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~+150	℃

Electrical characteristics (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	71			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =71V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Gate threshold voltage **(note 3)**	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2		4	V
Drain-source on-resistance **(note 3)**	$R_{DS(on)}$	V_{GS} =10V, I_D =40A			7.5	mΩ
Forward transconductance **(note 3)**	g_{FS}	V_{DS} =5V, I_D =40A		60		S
Diode forward voltage **(note 3)**	V_{SD}	I_S=20A, V_{GS} = 0V			1.2	V
DYNAMIC CHARACTERISTICS (note 4)						
Input capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V,f =1MHz		4871		pF
Output capacitance	C_{oss}			630.6		pF
Reverse transfer capacitance	C_{rss}			410.3		pF
Gate resistance	R_g	V_{DS} =0V,V_{GS} =0V,f =1MHz		0.63		Ω
SWITCHING CHARACTERISTICS (note 4)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V,V_{DS}=30V, R_{GEN}=10Ω, I_D =42A		36.1		ns
Turn-on rise time	t_r			54.3		ns
Turn-off delay time	$t_{d(off)}$			85.2		ns
Turn-off fall time	t_f			37.3		ns
Total gate charge	Q_g	V_{DS} =48V,V_{GS} =10V,I_D =84A		85.7		nC
Gate-source Charge	Q_{gs}			23.2		nC
Gate-drain Charge	Q_{gd}			31.2		nC
Body diode reverse recovery time **(note 3)**	t_{rr}	I_F=84A,dI/dt=100A/μs		88.3		ns
Body diode reverse recovery charge **(note 3)**	Q_{rr}			65.9		nC

Notes :

1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , t≤10s.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤2%.
4. Guaranteed by design, not subject to producting.
5. L=0.5mH, V_{DD}=37.5V, V_{GS}=10V,R_G=25Ω,Starting T_J=25℃ .