JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD
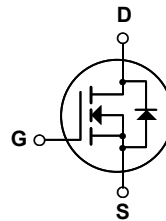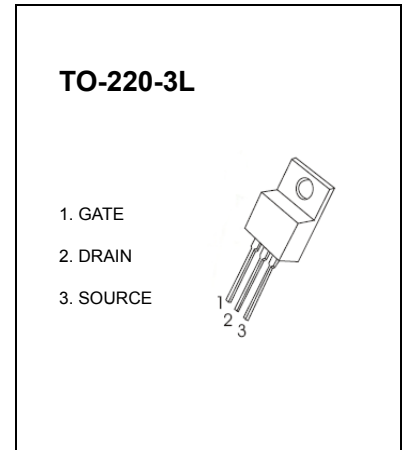
TO-220-3L Plastic-Encapsulate MOSFETS

CJP12N60   600V N-Channel Power MOSFET

TO-220-3L

1. GATE

2. DRAIN

3. SOURCE

General Description

This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency switch mode power supply.

FEATURE

- Low C_{rss}
- Fast switching
- Improved dv/dt capability

Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	±30	
Continuous Drain Current	I_D	12	A
Single Pulsed Avalanche Energy (note1)	E_{AS}	790	mJ
Power Dissipation	P_D	2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	
Operating 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
Off characteristics						
Drain-source breakdown voltage	V$_{(BR)DSS}$	V$_{GS}$ = 0V, I$_D$ =250µA	600			V
Drain-source diode forward voltage(note2)	V$_{SD}$	V$_{GS}$ = 0V, I$_S$ =12A			1.4	
Zero gate voltage drain current	I$_{DSS}$	V$_{DS}$ =600V, V$_{GS}$ =0V			10	µA
Gate-body leakage current, forward(note2)	I$_{GSSF}$	V$_{DS}$ =0V, V$_{GS}$ =30V			100	nA
Gate-body leakage current, reverse(note2)	I$_{GSSR}$	V$_{DS}$ =0V, V$_{GS}$ =-30V			-100	
On characteristics (note2)						
Gate-threshold voltage	V$_{GS(th)}$	V$_{DS}$ =V$_{GS}$, I$_D$ =250µA	2.0		4.0	V
Static drain-source on-resistance	R$_{DS(on)}$	V$_{GS}$ =10V, I$_D$ =6.0A			0.8	Ω
Dynamic characteristics (note 3)						
Input capacitance	C$_{iss}$	V$_{DS}$ =25V,V$_{GS}$ =0V,f =1MHz		1800		pF
Output capacitance	C$_{oss}$			200		
Reverse transfer capacitance	C$_{rss}$			25		
Switching characteristics(note3)						
Turn-on delay time	t$_{d(on)}$	V$_{DD}$=325V, R$_G$=4.7Ω, I$_D$ =12A		30		ns
Turn-on rise time	t$_r$			90		
Turn-off delay time	t$_{d(off)}$			160		
Turn-off fall time	t$_f$			90		

Notes :

1. L=10mH, I$_{AS}$=12 A, V$_{DD}$=50V, R$_G$=25Ω,Starting T$_J$=25℃.

2. Pulse Test : Pulse width≤300µs, duty cycle ≤2%.

3. These parameters have no way to verify.