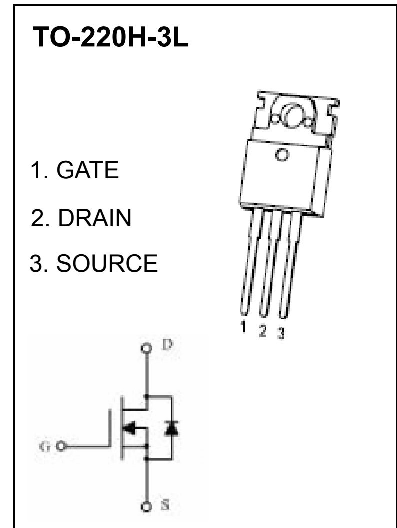
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

TO-220H-3L Plastic-Encapsulate MOSFETS

CJP75N75 N-Channel Power MOSFET



DESCRIPTION

The CJP75N75 uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge. Good stability and uniformity with high E_{AS} .This device is suitable for use in PWM, load switching and general purpose applications.

FEATURE

- Advanced trench process technology
- Special designed for convertors and power controls
- High density cell design for ultra low $R_{DS(on)}$
- Fully characterized avalanche voltage and current
- Fast switching
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation
- Special process technology for high ESD capability

APPLICATION

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

Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source voltage	V_{DS}	75	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	75	A
Pulsed Drain Current (note 1)	I_{DM}	300	
Power Dissipation (note 2 , T_a=25℃)	P_D	1.8	W
Maximum Power Dissipation (note 3 , T_c=25℃)		160	W
Single Pulsed Avalanche Energy (note 4)	E_{AS}	550	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	69.4	℃/W
Junction Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-55 ~+150	

Notes 1. Repetitive Rating: Pulse width limited by maximum junction temperature

2. This test is performed with no heat sink at T_a=25℃

3. This test is performed with infinite heat sink at T_c=25℃

4. E_{AS} condition: T_j=25℃,V_{DD}=37.5V,V_{GS}=10V,L=0.5mH,R_g=25Ω.

Electrical characteristics (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS} =0, I_D =250μA	75			V
Gate-threshold voltage (note 1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2		4	
Gate-body leakage current	I_{GSS}	V_{DS} =0, V_{GS} =±20V			±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS} =75V, V_{GS} =0			1	μA
Drain-source on-state resistance (note 1)	$R_{DS(on)}$	V_{GS} =10V, I_D =40A			8	mΩ
Forward transconductance (note 1)	g_{FS}	V_{DS} =10V, I_D =40A		60		S
Dynamic characteristics (note 2)						
Input capacitance	C_{iss}	V_{DS} =25V,V_{GS} =0,f =1MHz		3100		pF
Output capacitance	C_{oss}			310		
Reverse transfer capacitance	C_{rss}			260		
Switching characteristics (note 2)						
Turn-on delay time	$t_{d(on)}$	V_{DD}=30V, I_D=2A,R_L=15Ω, V_{GS}=10V,R_G=2.5Ω		18.2		ns
Rise time	t_r			15.6		
Turn-off delay time	$t_{d(off)}$			70.5		
Fall Time	t_f			13.8		
Total gate charge	Q_g	V_{DS} =30V,V_{GS} =10V,I_D =30A		100		nC
Gate-source charge	Q_{gs}			18		
Gate-drain charge	Q_{gd}			27		
Source-Drain Diode characteristics						
Diode forward current	I_S				75	A
Diode pulsed forward current	I_{SM}				300	A
Diode Forward voltage (note 1)	V_{SD}	V_{GS} =0, I_S=40A			1.2	V
Diode reverse recovery time (note 2)	t_{rr}	I_F=75A,di/dt=100A/μs			33	ns
Diode reverse recovery charge (note 2)	Q_{rr}				54	nC

Notes: 1. Pulse Test: Pulse Width≤300μs, duty cycle ≤2%.

2. These parameters have no way to verify.