



TO-220-3L Plastic-Encapsulate MOSFETS

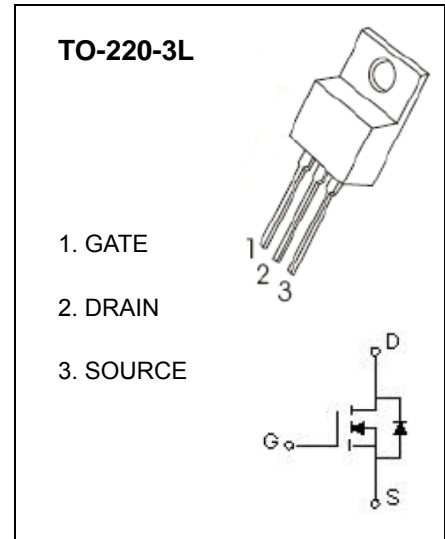
CJP07N65 N-Channel Power MOSFET

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. Designed 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



Maximum ratings ($T_a=25^{\circ}\text{C}$ 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	$^{\circ}\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 ~ +150	$^{\circ}\text{C}$
Maximum Lead Temperature for Soldering Purposes , Duration for 5 Seconds	T_L	260	$^{\circ}\text{C}$

Electrical characteristics (T_a=25°C 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	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		4	V
Static drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =3.7A			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 _{riss}				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°C.
2. Pulse Test: Pulse width ≤300μs, duty cycle ≤2%.
3. These parameters have no way to verify.

Typical Characteristics

CJP07N65

