

TO-220-3L Plastic-Encapsulate MOSFETS

CJP07N60 N-Channel Power MOSFET

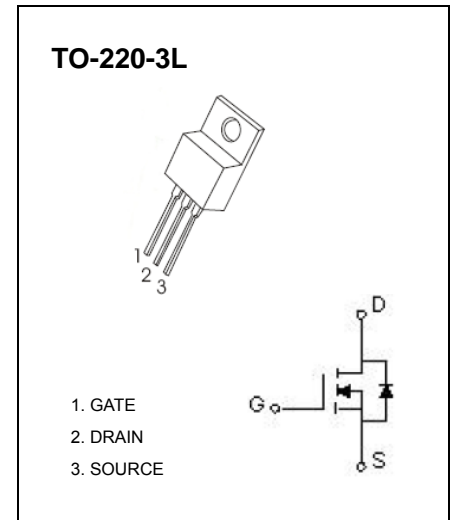
GENERAL DESCRIPTION

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

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



Maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	± 30	
Continuous Drain Current	I_D	7	A
Pulsed Drain Current	I_{DM}	30.8	
Single Pulsed Avalanche Energy (note1)	E_{AS}	580	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 5 seconds	T_L	260	

Electrical characteristics (T_a=25°C unless otherwise noted)

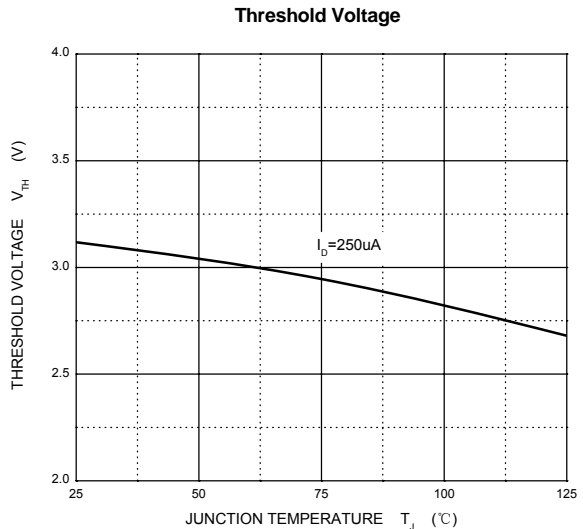
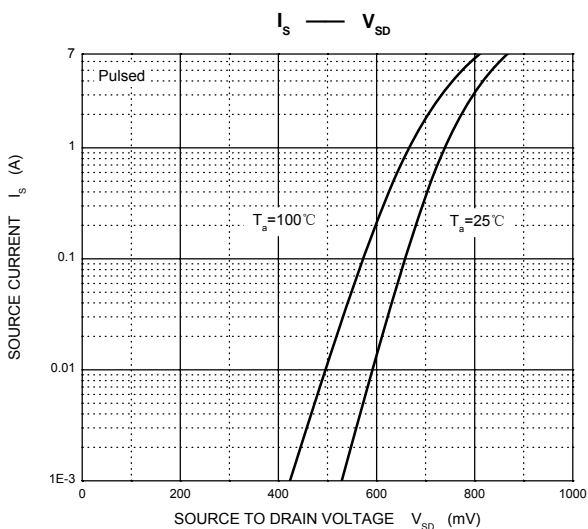
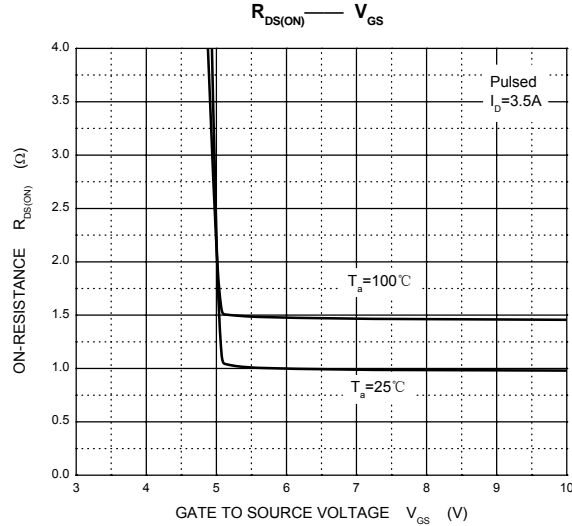
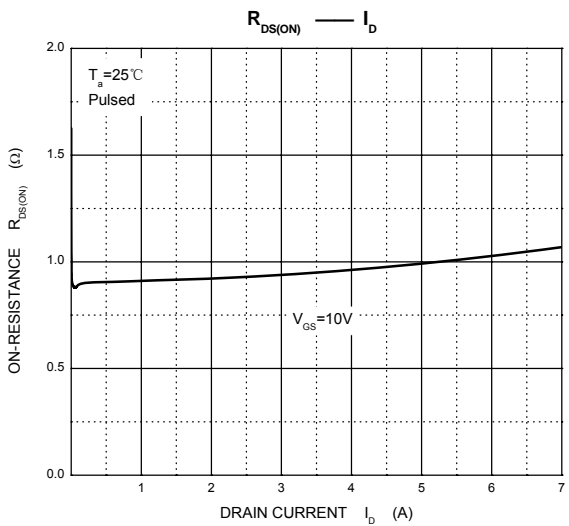
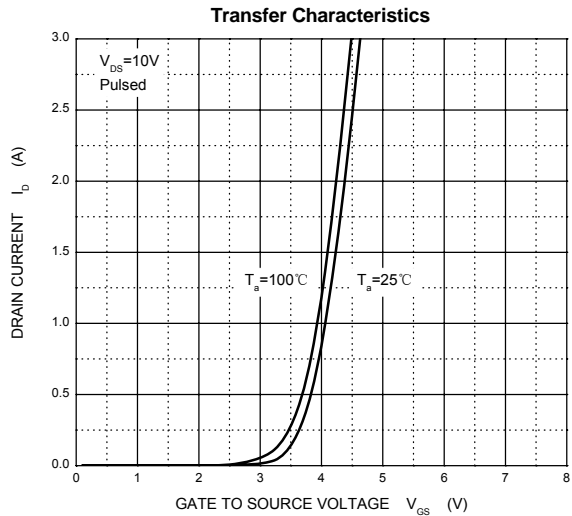
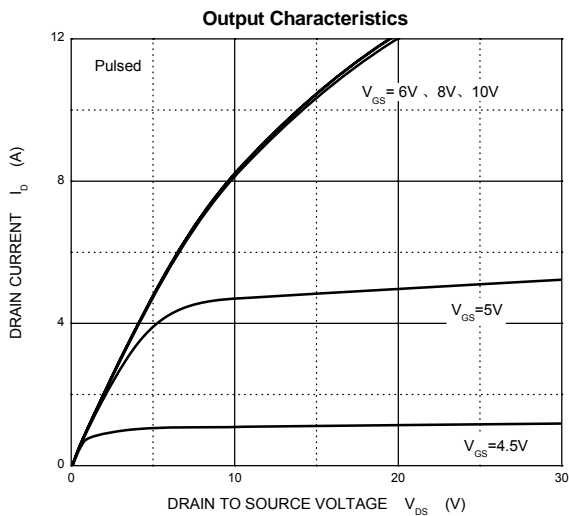
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	600			V
Drain-source diode forward voltage(note2)	V _{SD}	V _{GS} = 0V, I _S = 7A			1.4	
Zero gate voltage drain current	I _{DSS}	V _{DS} = 600V, V _{GS} = 0V			1	μA
Gate-body leakage curren (note2)	I _{GSS}	V _{DS} = 0V, V _{GS} = ± 30V			± 100	nA
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 _{DSON}	V _{GS} = 10V, I _D = 3.5A			1.3	Ω
Forward transconductance	g _{FS}	V _{DS} = 50V, I _D = 3.9A	5			S
Dynamic characteristics (note 3)						
Input capacitance	C _{ISS}	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz			1600	pF
Output capacitance	C _{OSS}				190	
Reverse transfer capacitance	C _{RSS}				25	
Switching characteristics (note 3)						
Turn-on delay time (note3)	t _{d(on)}	V _{DD} = 300V, V _{GS} = 10V, R _G = 25Ω, I _D = 7A			80	ns
Turn-on rise time (note3)	t _r				165	
Turn-off delay time (note3)	t _{d(off)}				160	
Turn-off fall time (note3)	t _f				120	

Notes :

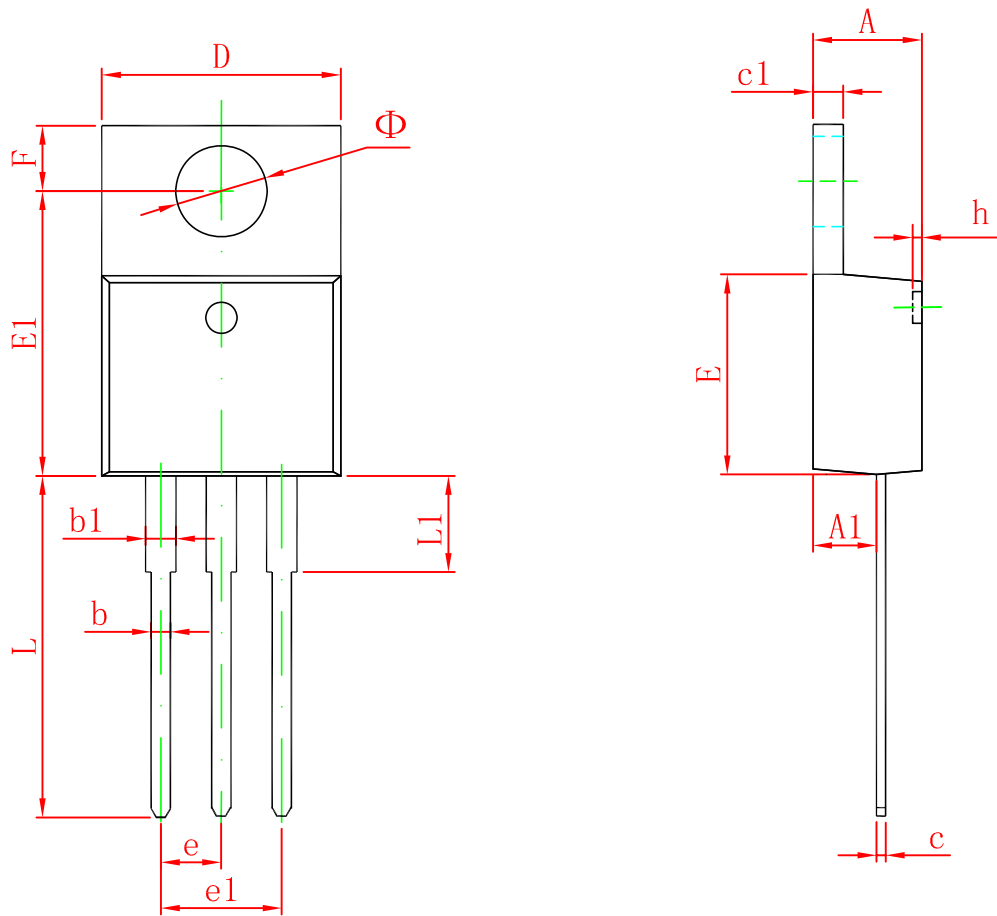
1. L=19.5mH, I_L=7A, V_{DD}=50V, V_{GS}=10V, R_G=0Ω, Starting T_J=25°C.
2. Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
3. These parameters have no way to verify.

Typical Characteristics

CJP07N60



TO-220-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
h	0.000	0.300	0.000	0.012
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
Φ	3.735	3.935	0.147	0.155