

# TO-220-3L/TO-220F Plastic-Encapsulate MOSFETS

## CJP10N60,CJPF10N60 N-Channel Power MOSFET

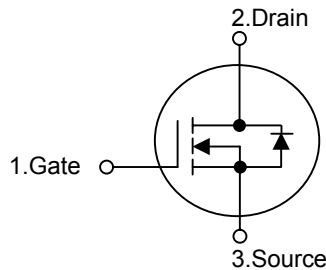
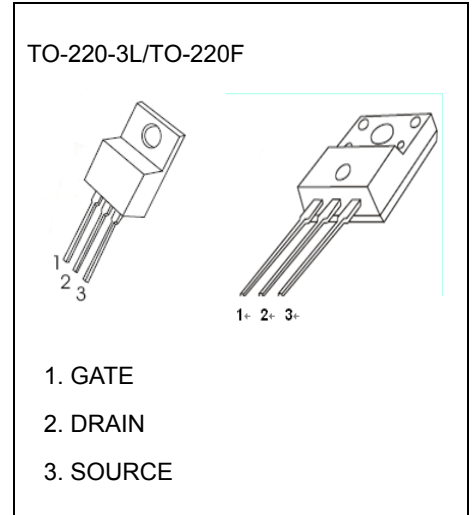
### Description

The CJP10N60/CJPF10N60 is a high voltage and high current power MOSFET, designed to have characteristics, such as fast switching time, low gate charge, low on-state resistance and have rugged avalanche characteristics.

This power MOSFET is usually used at high speed switching applications in power supplies, PWM motor controls, high efficient DC to DC converters and bridge circuits.

### FEATURES

- Low  $C_{rss}$
- Fast Switching
- 100% avalanche tested



### 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	$V_{GS}$	$\pm 30$	
Continuous Drain Current	$I_D$	10	A
Power Dissipation	$P_D$	2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	$^\circ\text{C/W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-50 ~+150	

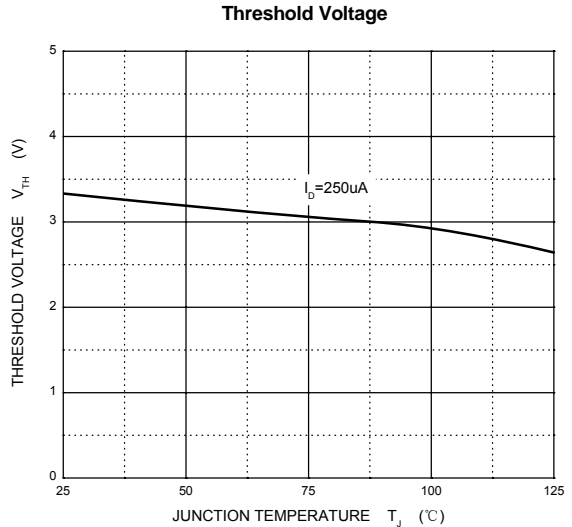
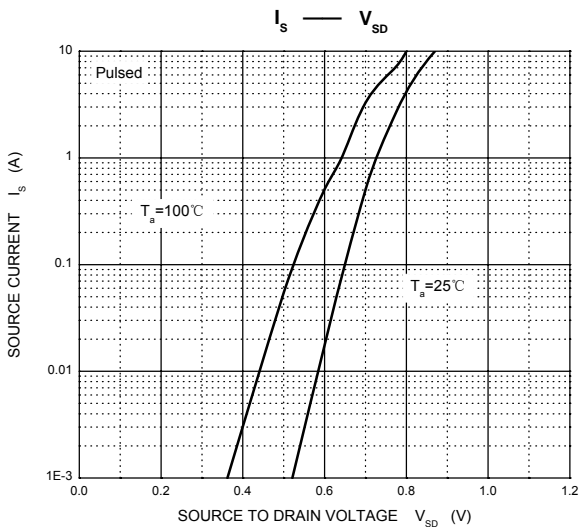
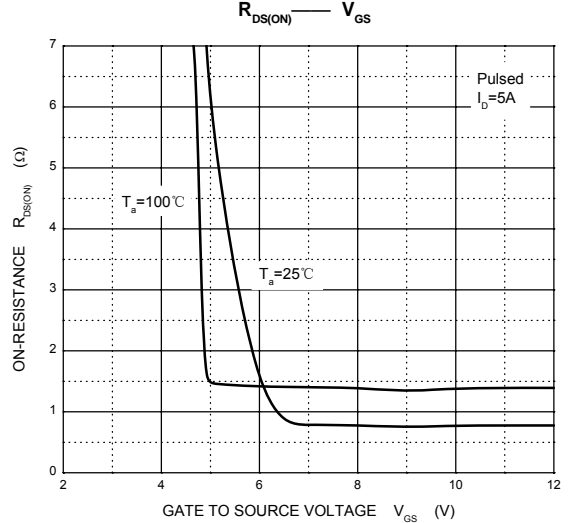
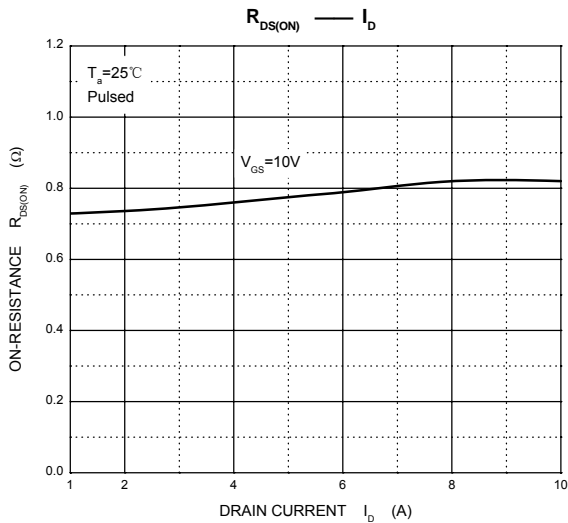
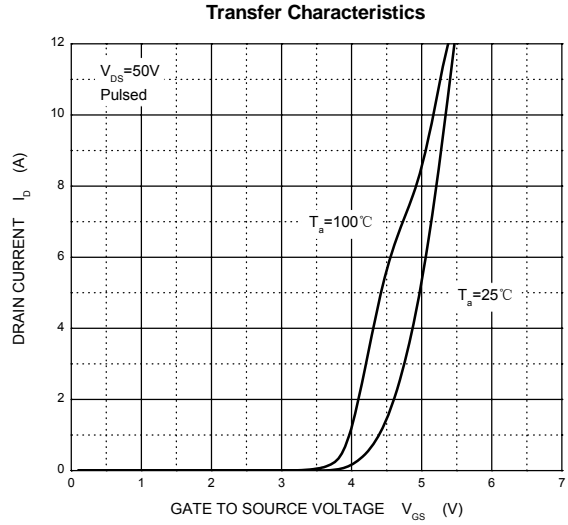
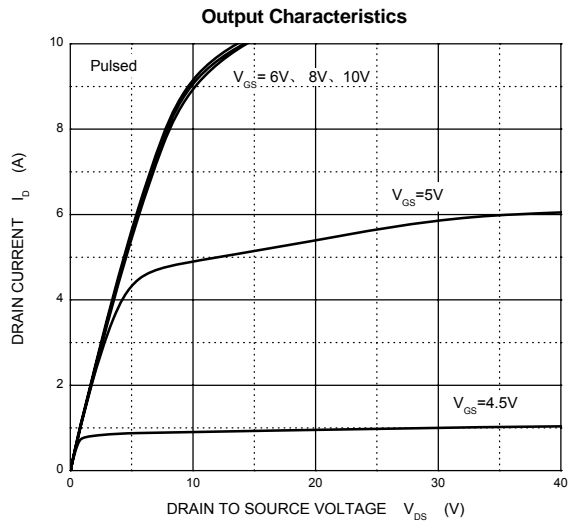
### Electrical characteristics (T<sub>a</sub>=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	600			V
Gate-Threshold Voltage (note1)	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	2.0		4.0	
Gate-Body Leakage Current (note1)	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±30V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =600V, V <sub>GS</sub> =0V			10	μA
Drain-Source On-State Resistance (note1)	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =5A			1	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f =1MHz		1430		pF
Output Capacitance	C <sub>oss</sub>			117		
Reverse Transfer Capacitance	C <sub>rss</sub>			2.2		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =325V, I <sub>D</sub> =10A, R <sub>G</sub> =25Ω		46		ns
Rise Time	t <sub>r</sub>			74		
Turn-Off Delay Time	t <sub>d(off)</sub>			340		
Fall Time	t <sub>f</sub>			66		
Forward on Voltage(note1)	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =10A			1.4	V

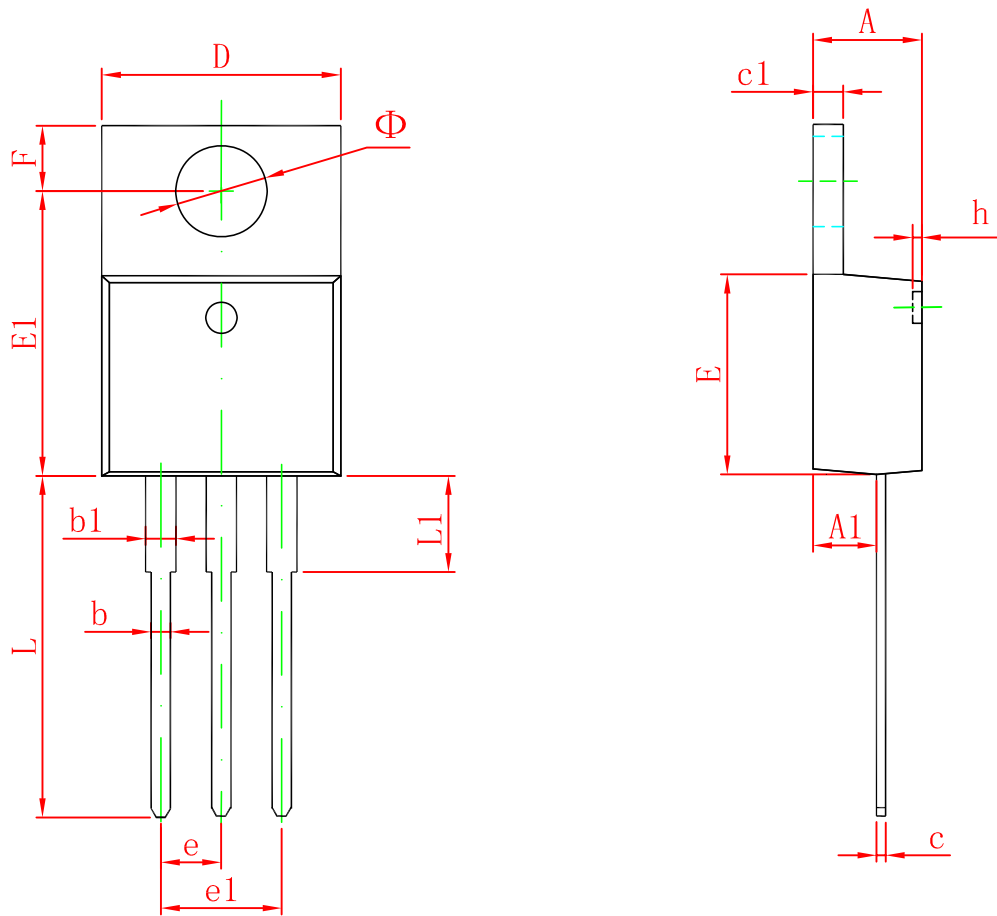
**Notes:**

1. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤2%.

# Typical Characteristics CJP/PF10N60



# 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
$\Phi$	3.735	3.935	0.147	0.155