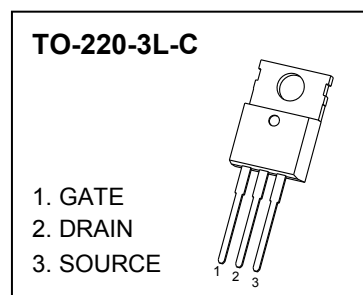




TO-220-3L-C Plastic-Encapsulate MOSFETS

CJP80N03 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
30V	6.5mΩ@10V	80A
	10mΩ@ 5V	



DESCRIPTION

The CJP80N03 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications.

FEATURES

- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized Avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation
- Special process technology for high ESD capability

APPLICATIONS

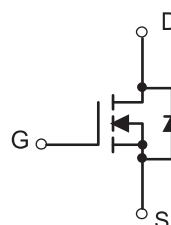
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

MARKING



CJP80N03= Device code
Solid dot = Green molding compound device,
if none, the normal device
XXX=Date Code

EQUIV ALENT CIRCUIT



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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	80	A
Pulsed Drain Current	I_{DM}	320	A
Single Pulsed Avalanche Energy	$E_{AS}^{(1)}$	306	mJ
Power Dissipation	P_D	1.25	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	100	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ +150	$^{\circ}\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	$^{\circ}\text{C}$

(1). E_{AS} condition: $V_{DD}=20\text{V}$, $L=0.5\text{mH}$, $R_G=25\Omega$, Starting $T_J = 25^{\circ}\text{C}$

MOSFET ELECTRICAL CHARACTERISTICS

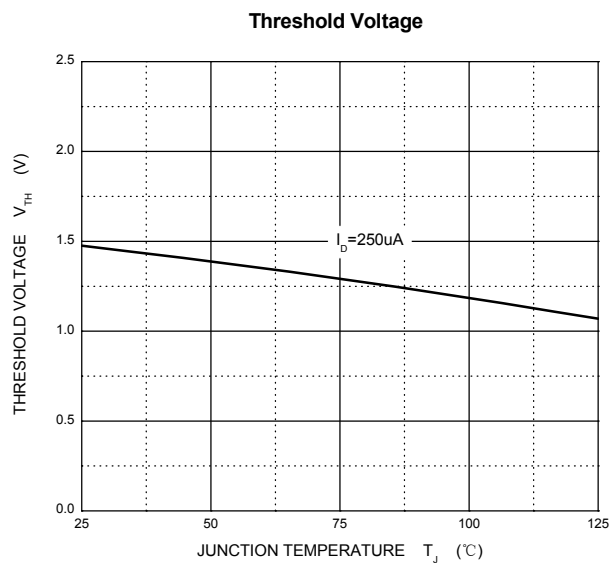
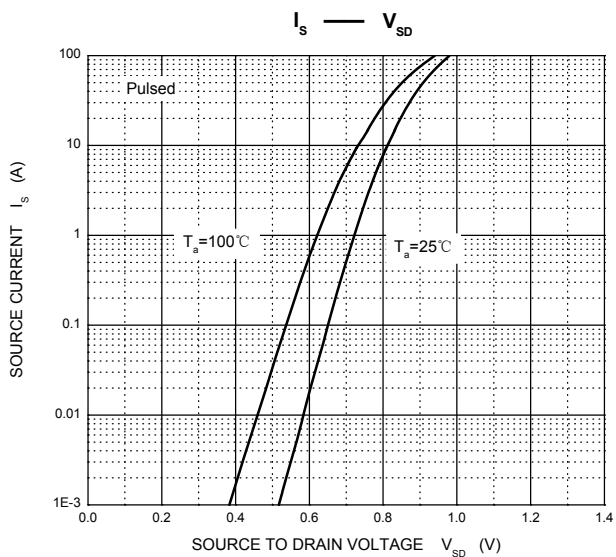
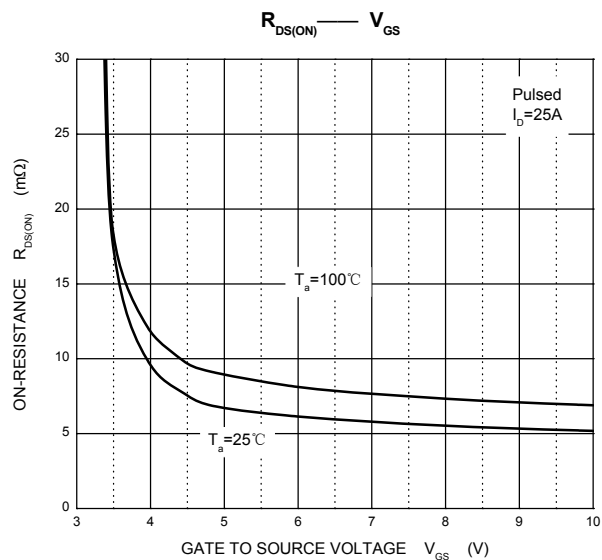
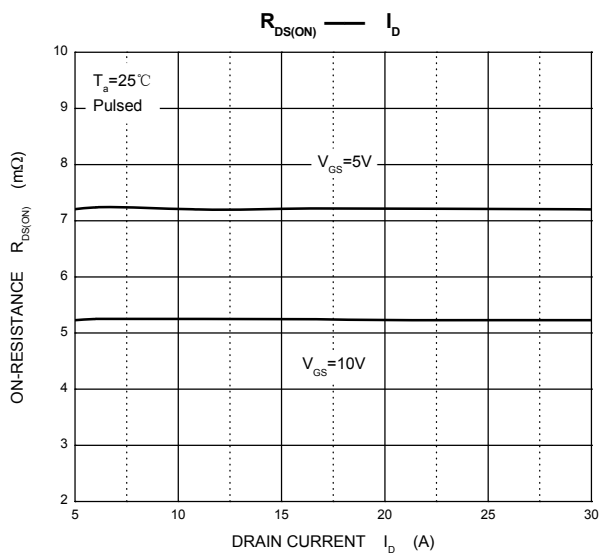
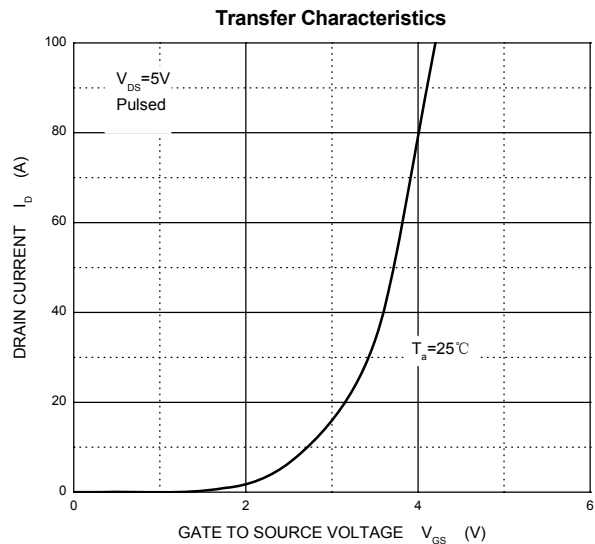
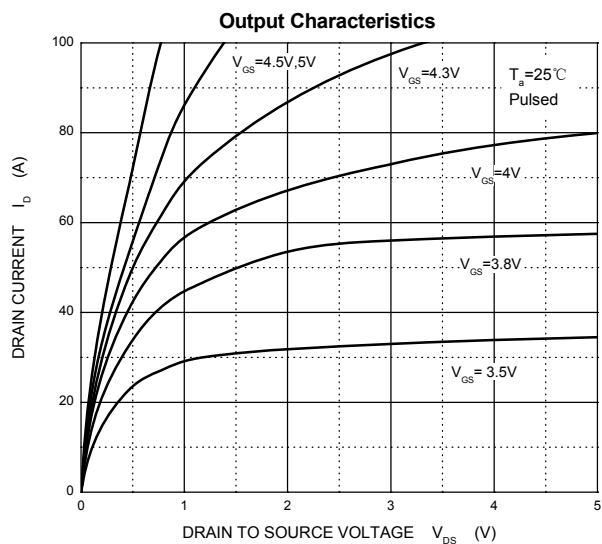
$T_a = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =250μA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
On characteristics (note1)						
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.5	3.0	V
Static drain-source on-sate resistance	R _{DS(on)}	V _{GS} =10V, I _D =30A		5.1	6.5	mΩ
		V _{GS} =5V, I _D =24A		7.1	10	mΩ
Forward transconductance	g _{FS}	V _{DS} =5V, I _D =24A	20			S
Dynamic characteristics (note 2)						
Input capacitance	C _{iss}	V _{DS} =15V,V _{GS} =0V, f =1MHz		2330		pF
Output capacitance	C _{oss}			460		
Reverse transfer capacitance	C _{rss}			230		
Switching characteristics (note 2)						
Total gate charge	Q _g	V _{DS} =10V, V _{GS} =10V, I _D =30A		51		nC
Gate-source charge	Q _{gs}			14		
Gate-drain charge	Q _{gd}			11		
Turn-on delay time	t _{d(on)}	V _{DD} =15V,I _D =30A, V _{GS} =10V,R _G =2.7Ω		20		ns
Turn-on rise time	t _r			15		
Turn-off delay time	t _{d(off)}			60		
Turn-off fall time	t _f			10		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note1)	V _{SD}	V _{GS} =0V, I _S =24A			1.2	V
Continuous drain-source diode forward current	I _S				80	A
Pulsed drain-source diode forward current	I _{SM}				320	A

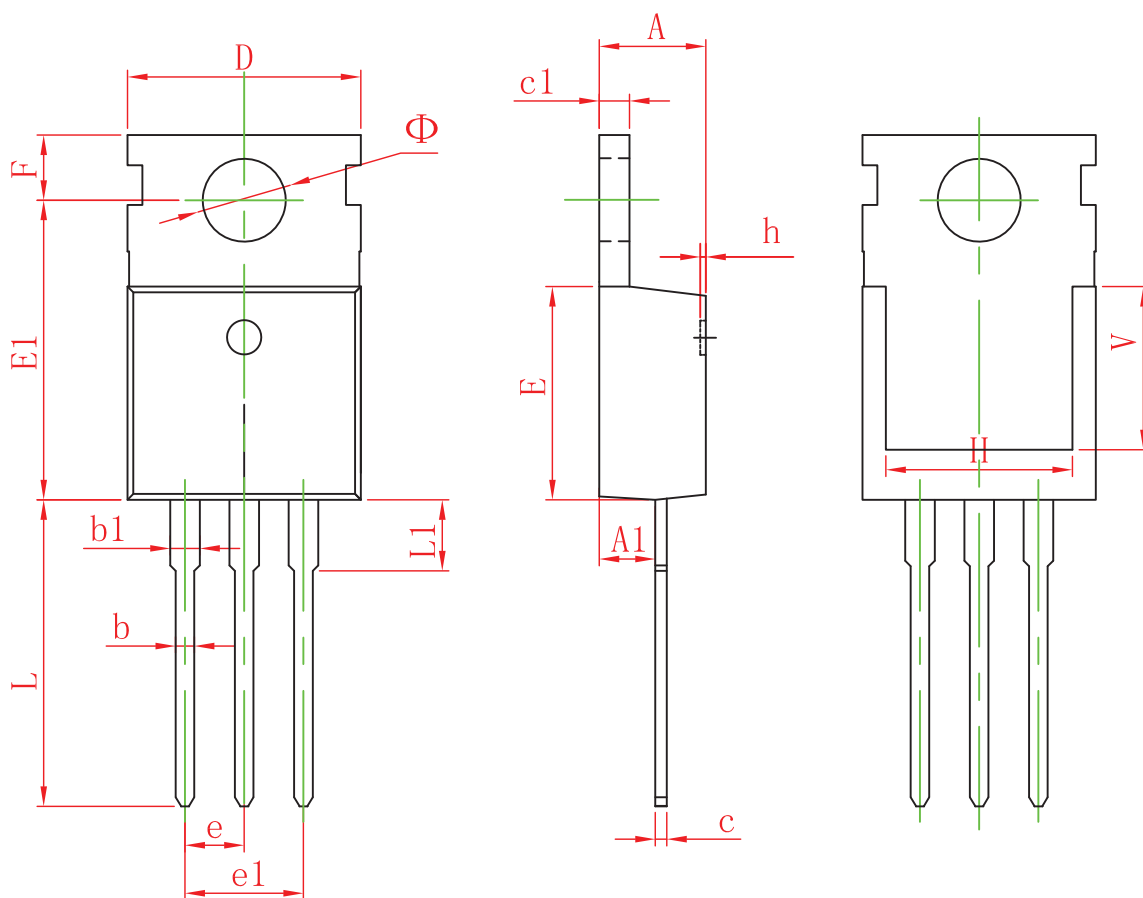
Notes:

1. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production.

Typical Characteristics



TO-220-3L-C Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.400	4.600	0.173	0.181
A1	2.250	2.550	0.089	0.100
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.330	0.650	0.013	0.026
c1	1.200	1.400	0.047	0.055
D	9.910	10.250	0.390	0.404
E	8.950	9.750	0.352	0.384
E1	12.650	12.950	0.498	0.510
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
F	2.650	2.950	0.104	0.116
H	7.900	8.100	0.311	0.319
h	0.000	0.300	0.000	0.012
L	12.900	13.400	0.508	0.528
L1	2.850	3.250	0.112	0.128
V	7.500 REF.		0.295 REF.	
Φ	3.400	3.800	0.134	0.150