

TO-220F Plastic-Encapsulate MOSFETS

CJPF130SN10 N-Channel Power MOSFET

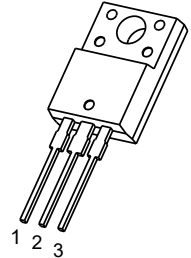
$V_{(BR)DSS}$	$R_{DS(on)}$ TYP	I_D
100V	5.0mΩ@10V	130A

DESCRIPTION

The CJPF130SN10 uses shielded gate trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications

TO-220F

1. GATE
2. DRAIN
3. SOURCE



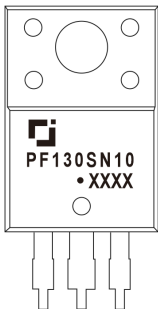
FEATURES

- Low $R_{DS(on)}$
- Low Gate Charge

APPLICATIONS

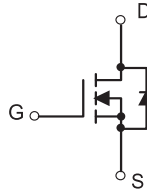
- High efficiency power supply
- Secondary synchronus rectifier

MARKING



PF130SN10 = Device code
Solid dot = Green molding compound device,
if none, the normal device
XXXX = Code

EQUIVALENT CIRCUIT



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D ①	130	A
Pulsed Drain Current	I_{DM} ②	390	
Maximum Power Dissipation	P_D	2.0	W
Single Pulsed Avalanche Energy	E_{AS} ③	500	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~ +150	
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	

MOSFET ELECTRICAL CHARACTERISTICS

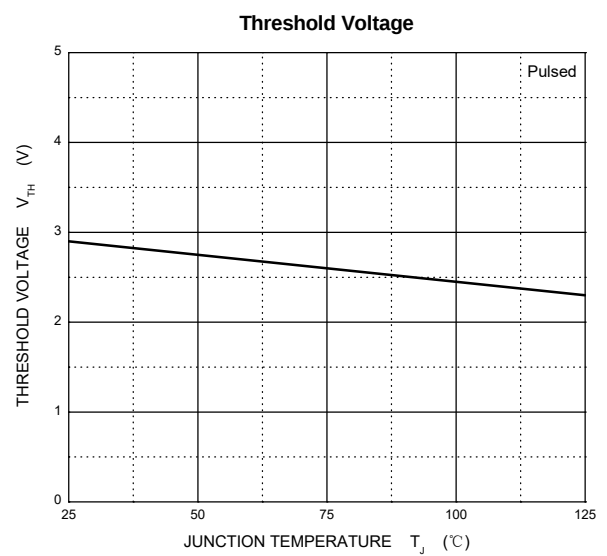
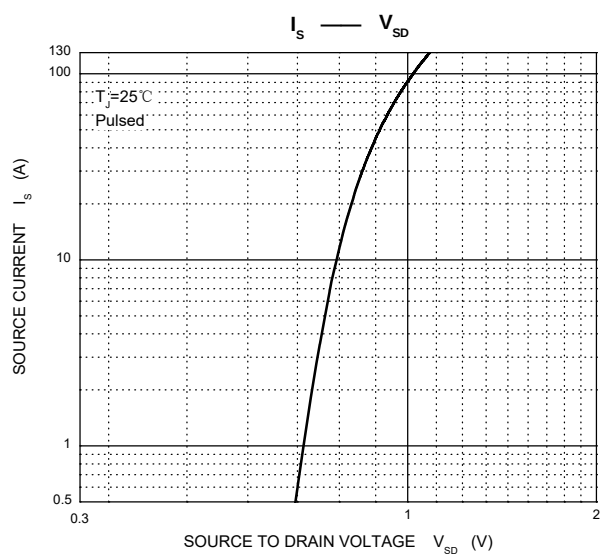
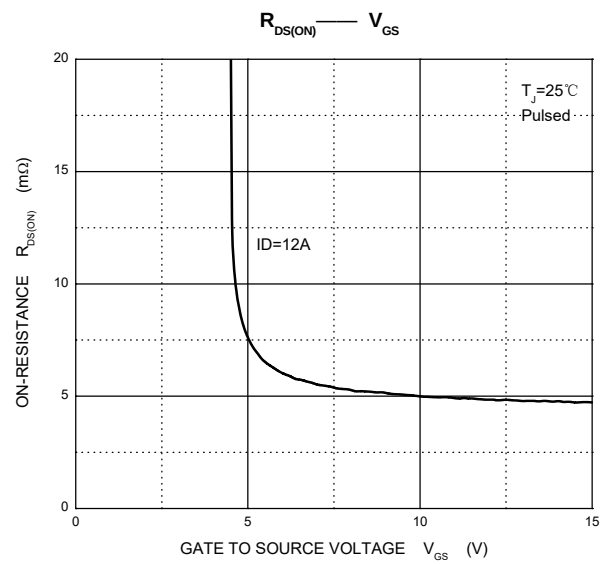
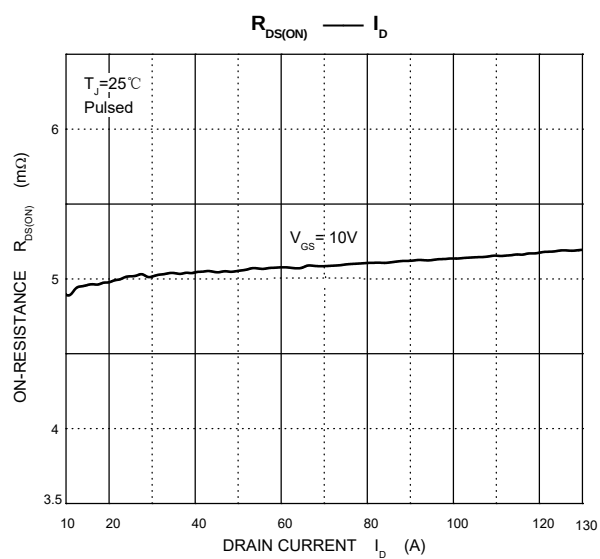
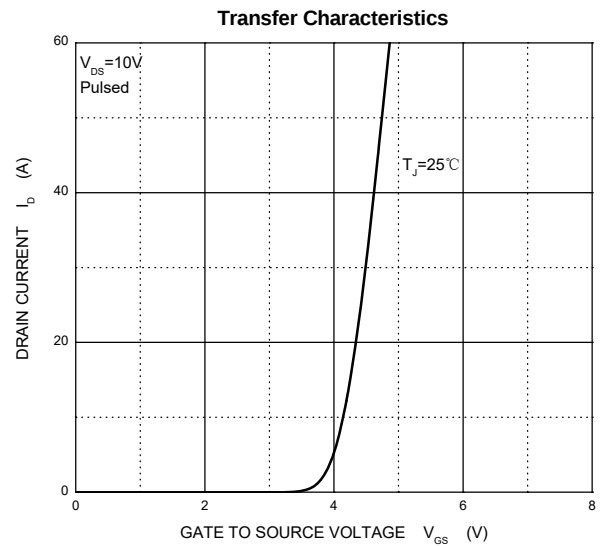
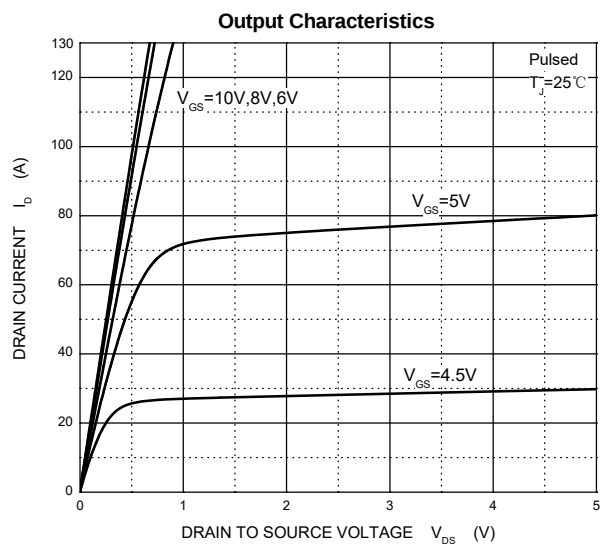
$T_a=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =250uA	100			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			1	μA
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
On characteristics ④						
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	2.0	3.0	4.0	V
Static drain-source on-sate resistance	R _{DS(on)}	V _{GS} =10V, I _D =12A		5.0	6.0	mΩ
Dynamic characteristics ④ ⑤						
Input capacitance	C _{iss}	V _{DS} =50V,V _{GS} =0V, f =100KHz		6660		pF
Output capacitance	C _{oss}			821		
Reverse transfer capacitance	C _{rss}			17		
Gate resistance	R _g	f =1MHz		3.2		Ω
Switching characteristics ④ ⑤						
Total gate charge	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =22A		91		nC
Gate-source charge	Q _{gs}			23		
Gate-drain charge	Q _{gd}			13		
Turn-on delay time	t _{d(on)}	V _{DS} =50V,I _D =22A , V _{GS} =10V,R _G =2.2Ω		28.2		ns
Turn-on rise time	t _r			7.5		
Turn-off delay time	t _{d(off)}			81.9		
Turn-off fall time	t _f			20.1		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note1)	V _{SD} ④	V _{GS} =0V, I _S =20A			1.3	V
Continuous drain-source diode forward current	I _S ①				130	A
Pulsed drain-source diode forward current	I _{SM} ②				390	A

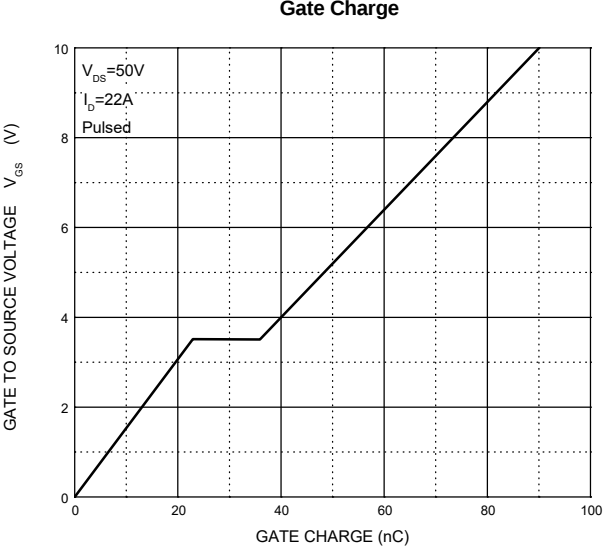
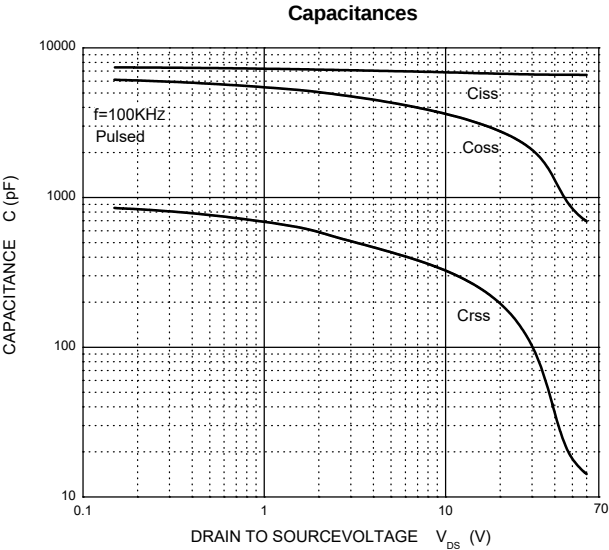
Notes:

1. $T_C = 25^{\circ}\text{C}$ Limited only by maximum temperature allowed.
2. $P_W \leq 10\mu s$, Duty cycle $\leq 1\%$.
3. EAS condition: $V_{DD} = 30V, V_{GS} = 10V, L = 0.5mH, R_g = 25\Omega$ Starting $T_J = 25^{\circ}\text{C}$.
4. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
5. Guaranteed by design, not subject to production.

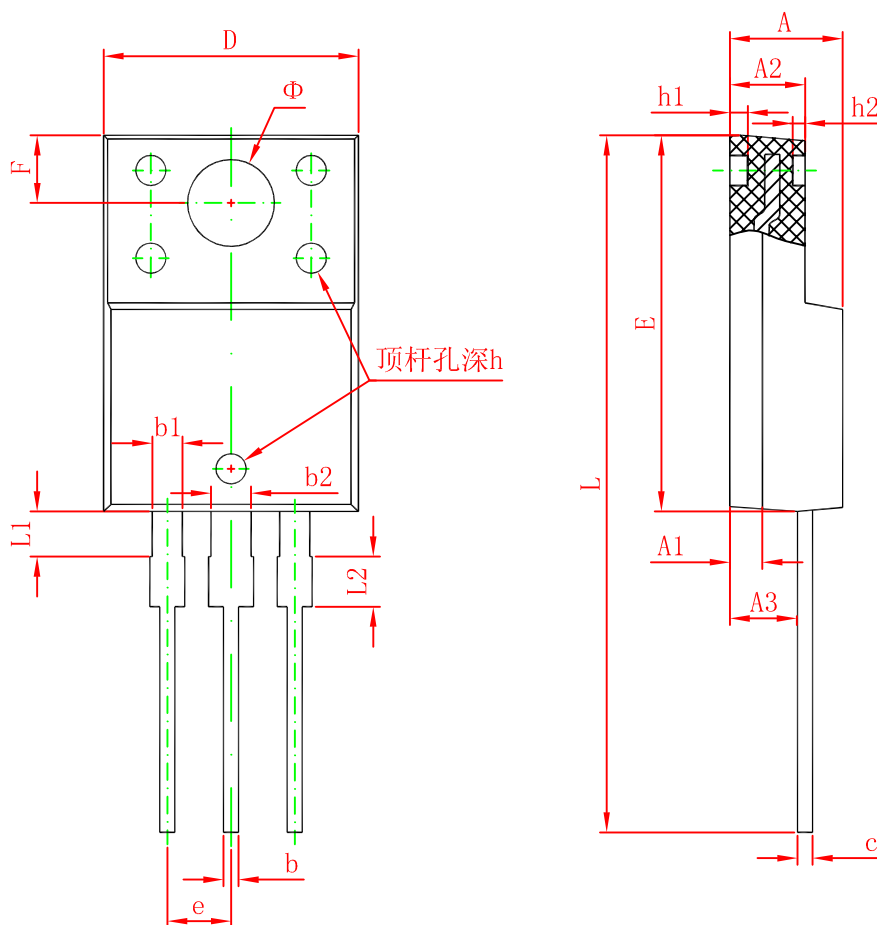
Typical Characteristics



Typical Characteristics



TO-220F Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.300	4.700	0.169	0.185
A1	1.300 REF.		0.051 REF.	
A2	2.800	3.200	0.110	0.126
A3	2.500	2.900	0.098	0.114
b	0.500	0.750	0.020	0.030
b1	1.100	1.350	0.043	0.053
b2	1.500	1.750	0.059	0.069
c	0.500	0.750	0.020	0.030
D	9.960	10.360	0.392	0.408
E	14.800	15.200	0.583	0.598
e	2.540 TYP.		0.100 TYP.	
F	2.700 REF.		0.106 REF.	
Φ	3.500 REF.		0.138 REF.	
h	0.000	0.300	0.000	0.012
h1	0.800 REF.		0.031 REF.	
h2	0.500 REF.		0.020 REF.	
L	28.000	28.400	1.102	1.118
L1	1.700	1.900	0.067	0.075
L2	1.900	2.100	0.075	0.083