

TO-220F Plastic-Encapsulate MOSFETS

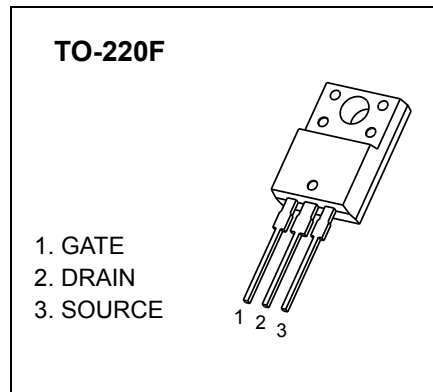
CJPF10N65

N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
650V	1.0Ω@10V	10A

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

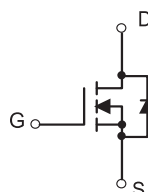
- High Current Rating
- Low Gate Charge
- Lower $R_{DS(on)}$
- Low Reverse Transfer Capacitance
- Fast Switching Capability
- Tighter V_{SD} Specifications
- Avalanche Energy Specified

MARKING



CJPF10N65= Device code
Solid dot = Green molding compound device,
if none, the normal device
XXX=Date Code

EQUIVALENT CIRCUIT



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_{GSS}	±30	
Continuous Drain Current	I_D	10	A
Pulsed Drain Current(note1)	I_{DM}	40	
Single Pulsed Avalanche Energy (note2)	E_{AS}	500	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~+150	°C
Maximum lead temperature for soldering purposes , 1/8"from case for 5 seconds	T_L	260	

MOSFET ELECTRICAL CHARACTERISTICS

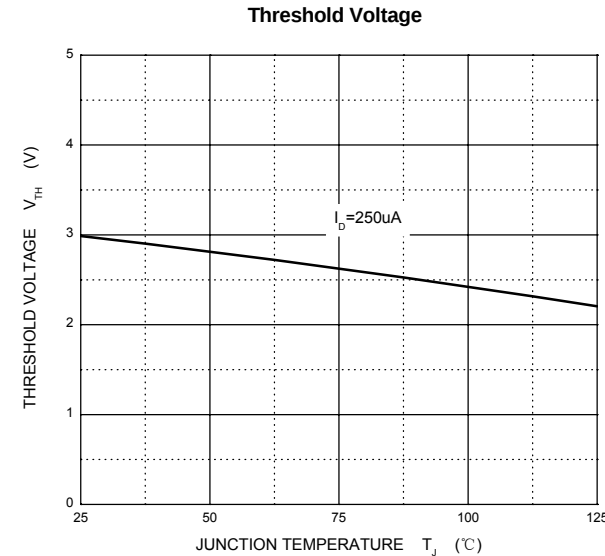
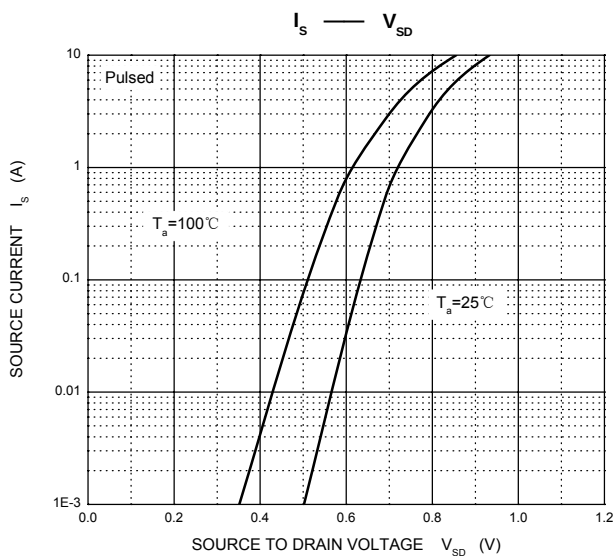
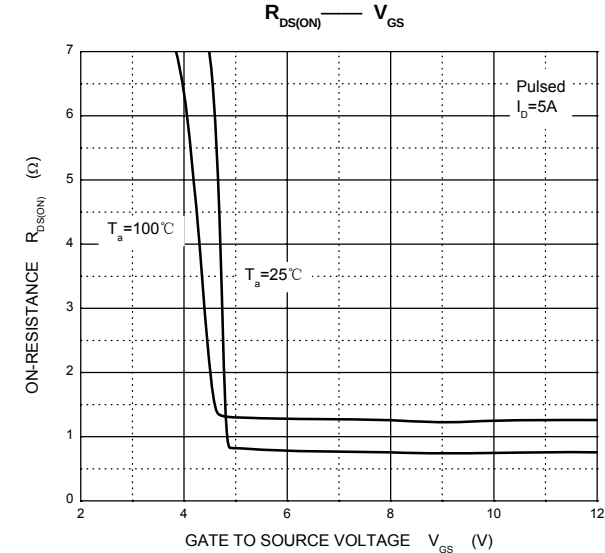
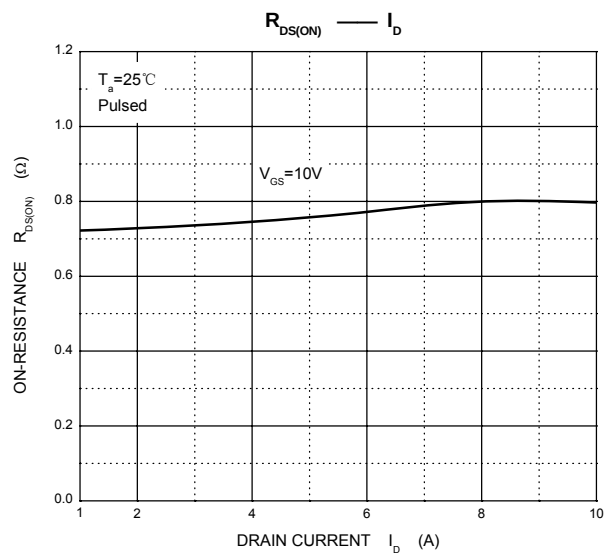
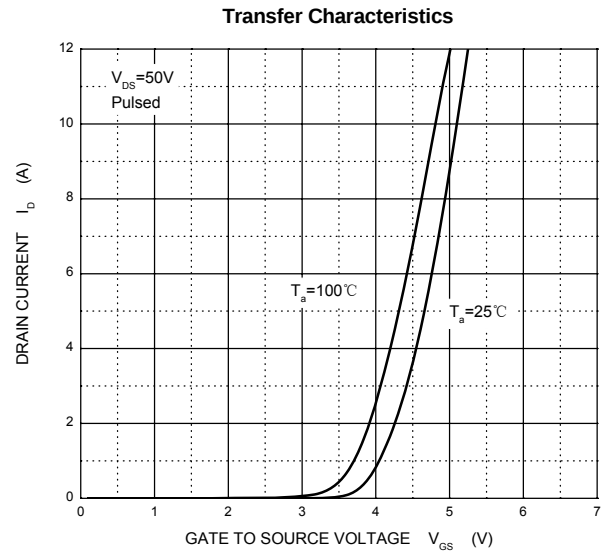
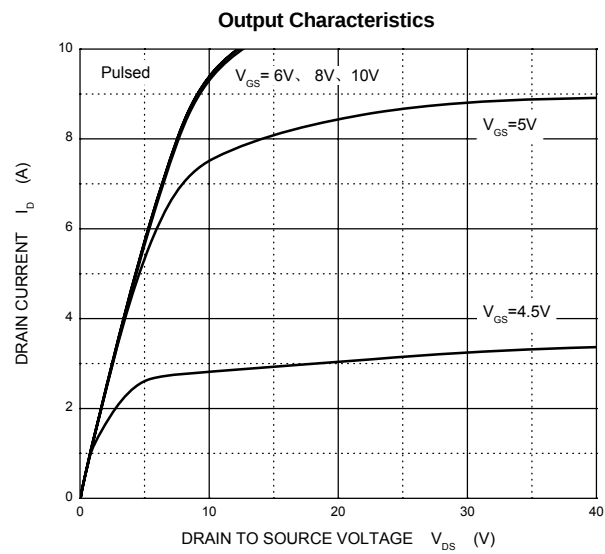
$T_a = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	650			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =650V, V _{GS} =0V			1	μA
Gate-body leakage current (note3)	I _{GSS}	V _{DS} =0V, V _{GS} =± 30V			± 100	nA
On characteristics (note3)						
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.0	3.0	4.0	V
Static drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =5A		0.75	1	Ω
Dynamic characteristics (note 4)						
Input capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f =1MHz		1570	2040	pF
Output capacitance	C _{oss}			166	215	
Reverse transfer capacitance	C _{rss}			18	24	
Switching characteristics (note3, 4)						
Total gate charge	Q _g	V _{DS} =520V, V _{GS} =10V, I _D =10A		44	57	nC
Gate-source charge	Q _{gs}			6.7		
Gate-drain charge	Q _{gd}			18.5		
Turn-on delay time	t _{d(on)}	V _{DD} =325V, V _{GS} =10V, R _G =25Ω, I _D =10A		23	55	ns
Turn-on rise time	t _r			69	150	
Turn-off delay time	t _{d(off)}			144	300	
Turn-off fall time	t _f			77	165	
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note3)	V _{SD}	V _{GS} = 0V, I _S =10A			1.4	V
Maximum continuous drain-source diode forward current	I _S				10	A
Maximum pulsed drain-source diode forward current	I _{SM}				38	A

Notes :

1. Repetitive Rating : Pulse width limited by maximum junction temperature
2. $L = 10mH, I_{AS} = 10A, V_{DD} = 50V, R_G = 25\Omega$, Starting $T_J = 25^\circ\text{C}$
3. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. These parameters have no way to verify.

Typical Characteristics



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C, May, 2016