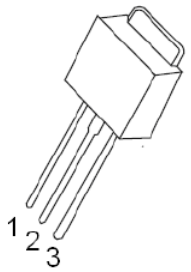
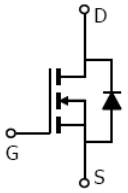
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

TO-251-3L Plastic-Encapsulate MOSFETS

CJD01N65B N-Channel Power MOSFET

TO-251-3L





1. GATE
2. DRAIN
3. SOURCE

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. Desighed for high voltage, high speed switching 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℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	650	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	1	A
Pulsed Drain Current	I_{DM}	4	
Single Pulsed Avalanche Energy (note1)	E_{AS}	5	mJ
Power Dissipation	P_D	1.25	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	100	℃/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 ~+150	℃
Maximum lead temperure for soldering purposes , 1/8”from case for 5 seconds	T_L	260	

Electrical characteristics (T_a=25℃ unless otherwise noted)

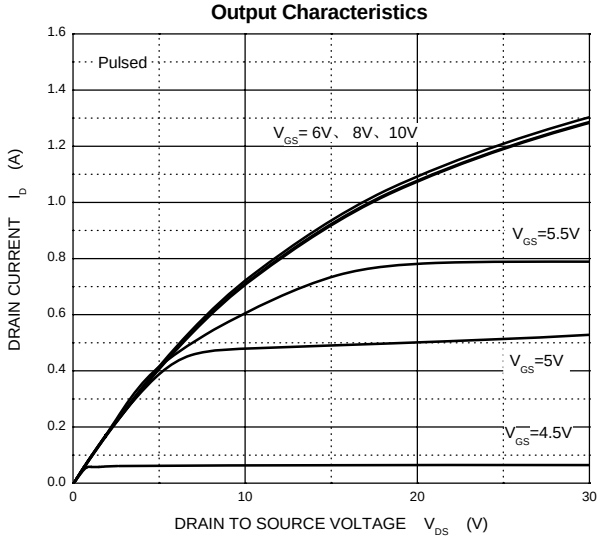
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	650			V
Drain-source diode forward voltage(note2)	V_{SD}	V_{GS} = 0V, I_S =1A			1.5	
Zero gate voltage drain current	I_{DSS}	V_{DS} =600V, V_{GS} =0V			100	μA
Gate-body leakage curren (note2)	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±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	$R_{DS(on)}$	V_{GS} =10V, I_D =0.6A			14	Ω
Dynamic characteristics (note 3)						
Input capacitance	C_{iss}	V_{DS} =25V,V_{GS} =0V,f =1MHz		210		pF
Output capacitance	C_{oss}			28		
Reverse transfer capacitance	C_{rss}			4.2		
Switching characteristics (note 3)						
Total gate charge	Q_g	V_{DS} =480V,V_{GS} =10V,I_D =4.0A		5.0	10	nC
Gate-source charge	Q_{gs}			2.7		
Gate-drain charge	Q_{gd}			2.0		
Turn-on delay time (note3)	$t_{d(on)}$	V_{DD}=300V, V_{GS}=10V, R_G=18Ω, I_D =1A		8		ns
Turn-on rise time (note3)	t_r			21		
Turn-off delay time (note3)	$t_{d(off)}$			18		
Turn-off fall time (note3)	t_f			24		

Notes :

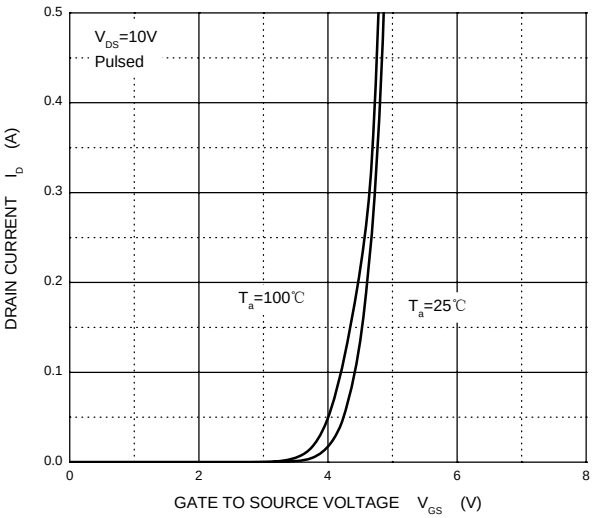
1. L=10mH, I_L=1 A, V_{DD}=50V, V_{GS}=10V,R_G=25Ω,Starting T_J=25℃.
2. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.
3. These parameters have no way to verify.

Typical Characteristics CJD01N65B

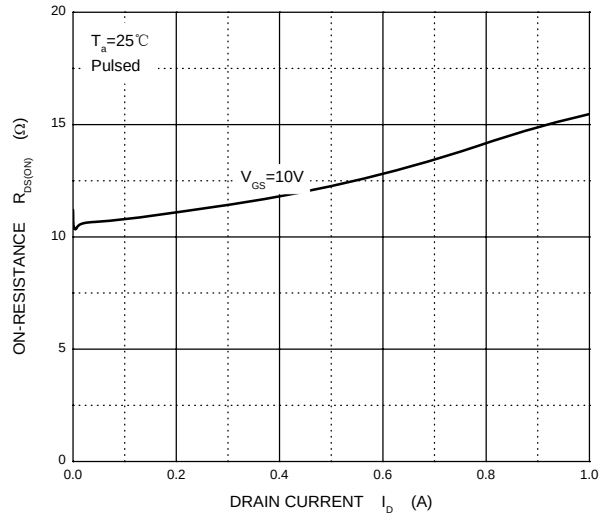
Output Characteristics



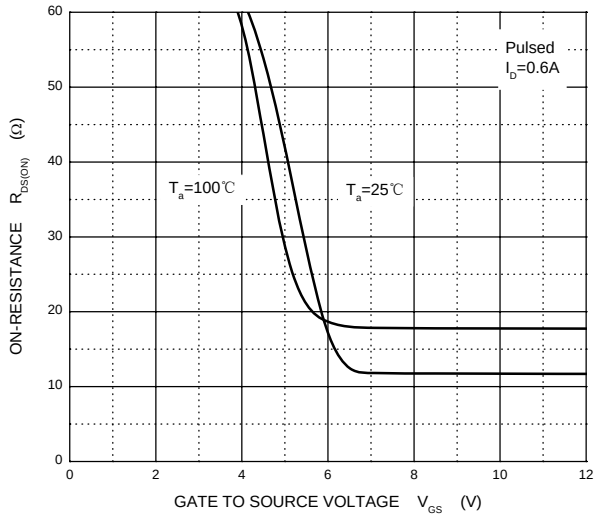
Transfer Characteristics



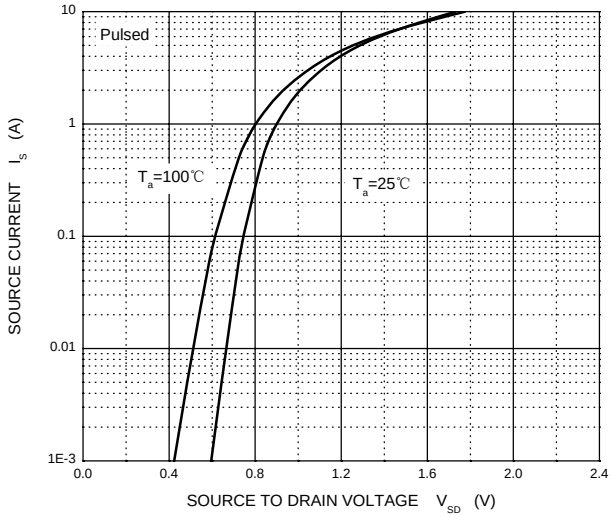
$R_{DS(ON)}$ —— I_D



$R_{DS(ON)}$—— V_{GS}



I_S —— V_{SD}



Threshold Voltage