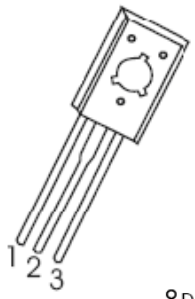
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

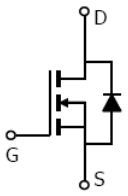
TO-126 Plastic-Encapsulate MOSFETS

CJI02N60 N-Channel Power MOSFET

TO-126



1. GATE
2. DRAIN
3. SOURCE



General Description

The high voltage MOSFET uses an advanced termination scheme to provide enhanced voltage-blocking capability without degrading performance over time. In addition , this advanced MOSFET is designed to withstand high energy in avalanche and commutation modes . The new energy efficient design also offers a drain-to-source diode with a fast recovery time. Designed for high voltage, high speed switching applications in power suppliers, converters and PWM motor controls , these devices are particularly well suited for bridge circuits where diode speed and commutating safe operating areas are critical and offer additional and safety margin against unexpected voltage transients.

FEATURES

- Robust High Voltage Termination
- Avalanche Energy Specified
- Diode is Characterized for Use in Bridge Circuits

Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	2	A
Pulsed Drain Current	I_{DM}	8	
Power Dissipation	P_D	1.25	W
Single Pulsed Avalanche Energy*	E_{AS}	128	mJ
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	100	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-50 ~+150	
Maximum lead temperure for soldering purposes , 1/8"from case for 5 seconds	T_L	260	℃

*E_{AS} condition: T_j=25℃,V_{DD}=50V,L=64mH,I_{AS}=2A,R_G=25Ω

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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	600			V
Drain-source diode forward voltage(note2)	V_{SD}	V_{GS} = 0V, I_S =2A			1.6	
Zero gate voltage drain current	I_{DSS}	V_{DS} =600V, V_{GS} =0V			25	μA
Gate-body leakage current	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 =1A			4.4	Ω
Forward Transconductance (note1)	g_{FS}	V_{DS} =50V, I_D =1A	1			S
Dynamic characteristics (note 3)						
Input capacitance	C_{iss}	V_{DS} =25V,V_{GS} =0V,f =1MHz		435		pF
Output capacitance	C_{oss}			56		
Reverse transfer capacitance	C_{rss}			9.2		
Switching characteristics (note 3)						
Turn-on delay time	$t_{d(on)}$	V_{DD}=300V, V_{GS}=10V, R_G=18Ω, I_D =2A		12		ns
Turn-on rise time	t_r			21		
Turn-off delay time	$t_{d(off)}$			30		
Turn-off fall time	t_f			24		

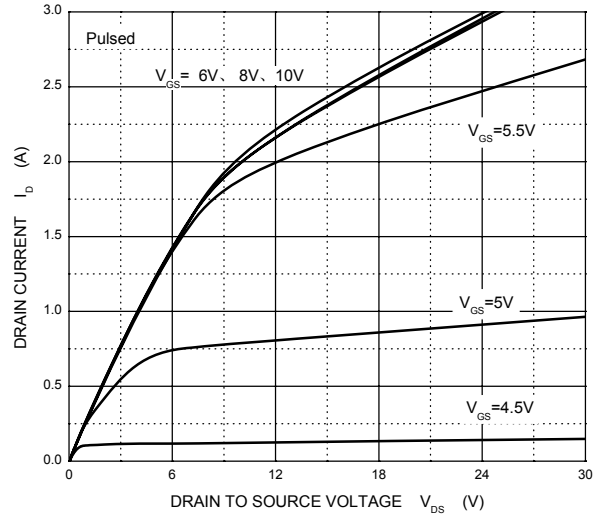
Notes :

1. L=16mH, I_L=5A, V_{DD}=50V,,R_G=25Ω,Starting T_J=25℃.
2. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.
3. These parameters have no way to verify.

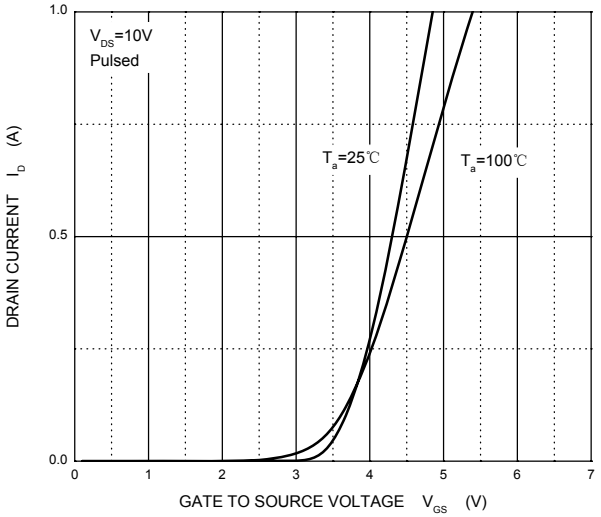
Typical Characteristics

CJI02N60

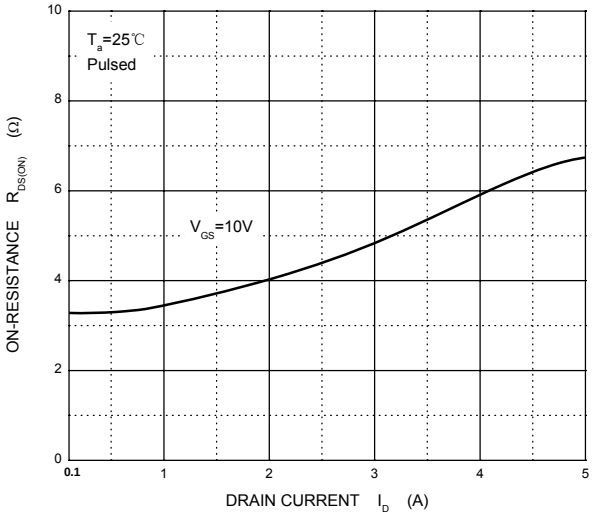
Output Characteristics



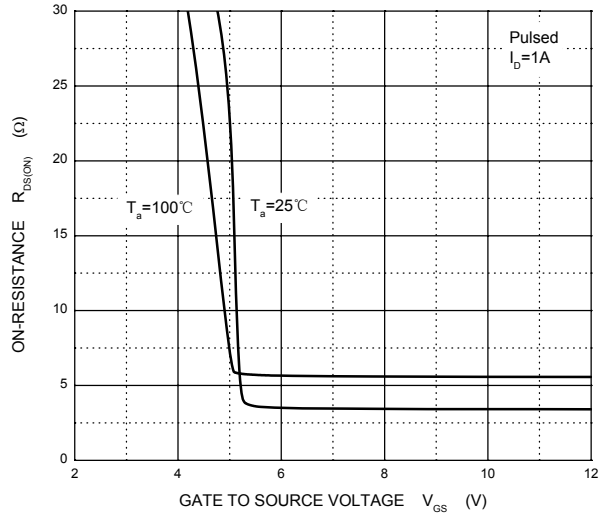
Transfer Characteristics



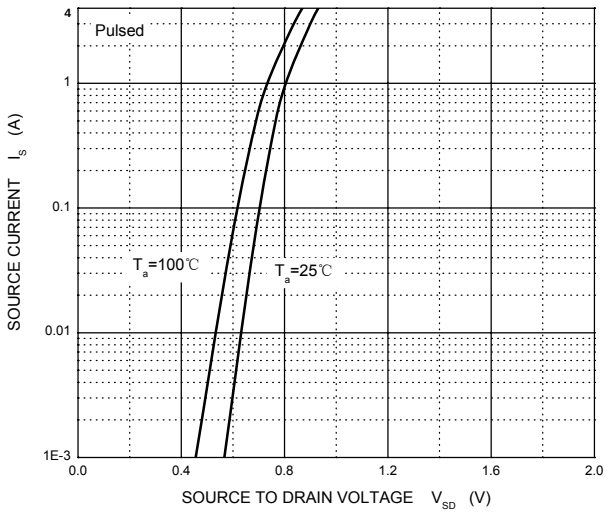
$R_{DS(ON)}$ —— I_D



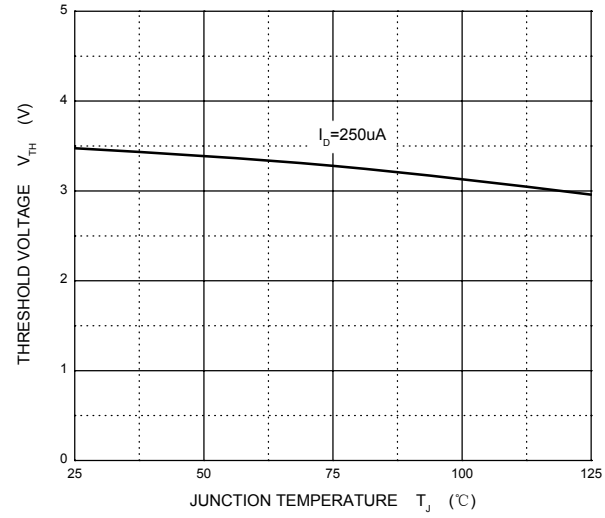
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}



Threshold Voltage



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