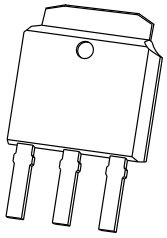
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

TO-251S Plastic-Encapsulate MOSFETS

CJD65SN10H N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$Typ	I_D
100V	11mΩ@10V	65A

TO-251S



1. GATE
2. DRAIN
3. SOURCE

DESCRIPTION

These N-Channel enhancement mode power field effect transistors are using SGT technology.This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode.These devices are well suited for high efficiency fast switching applications.

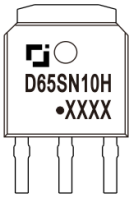
FEATURES

- Battery switch
- Load switch
- High density cell design for ultra low $R_{DS(ON)}$
- Excellent package for good heat dissipation

APPLICATIONS

- Networking
- Load Switch
- LED applications

MARKING



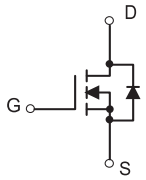
D65SN10H = Part No.

Solid dot=Green molding compound device.

if none, the normal device.

XXXX=Code.

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D ①	65	A
Pulsed Drain Current	I_{DM} ②	200	A
Single Pulsed Avalanche Energy	E_{AS} ③	100	mJ
Power Dissipation	P_D ①	100	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$ ⑥	100	℃/W
Thermal Resistance from Junction to Case	$R_{\theta JC}$ ①	1.25	℃/W
Operating Junction and Storage Temperature Range	T_J ,T_{stg}	-55~+150	℃

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ 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 =1mA		100			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =80V, V_{GS} =0V	T_J =25℃			1.0	μA
			T_J =125℃			100	
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 =250μA		2.0	3.0	4.0	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =10A			11	13.6	mΩ
Dynamic characteristics ④⑤							
Input capacitance	C_{iss}	V_{DS} =50V,V_{GS} =0V, f =1MHz			1480		pF
Output capacitance	C_{oss}				220		
Reverse transfer capacitance	C_{rss}				1.3		
Gate resistance	R_g	f =1MHz			2.5		Ω
Switching characteristics ④⑤							
Total gate charge	Q_g	V_{GS}=10V, V_{DS}=50V, I_D=24A			23		nC
Gate-source charge	Q_{gs}				5.0		
Gate-drain charge	Q_{gd}				4.5		
Turn-on delay time	$t_{d(on)}$	V_{DD}=50V,R_L=2.5Ω, V_{GS}=10V,R_{GEN}=10Ω			53		ns
Turn-on rise time	t_r				34		
Turn-off delay time	$t_{d(off)}$				38		
Turn-off fall time	t_f				56		
Drain-Source Diode Characteristics							
Drain-source diode forward voltage	V_{SD} ④	V_{GS} =0V, I_S=20A				1.2	V
Continuous drain-source diode forward current	I_S ①					65	A
Pulsed drain-source diode forward current	I_{SM} ②					200	A

Notes:

1.T_C=25℃ Limited only by maximum temperature allowed.

2.PW≤10μs, Duty cycle≤1%.

3.EAS condition: V_{DD}=50V,V_{GS}=10V, L=0.1mH, R_g=25Ω Starting T_J = 25℃.

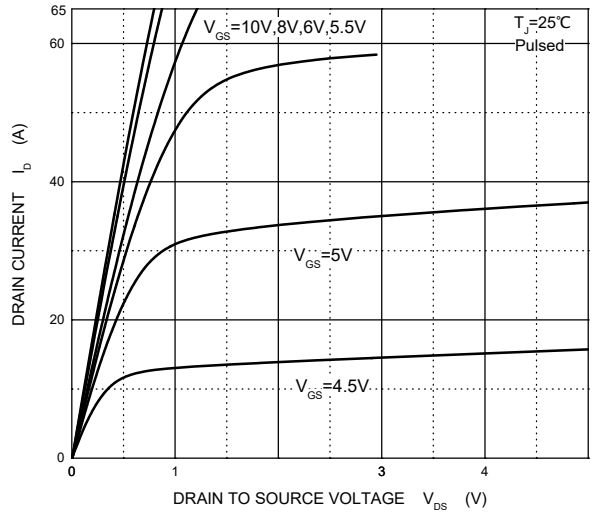
4.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

5.Guaranteed by design, not subject to production.

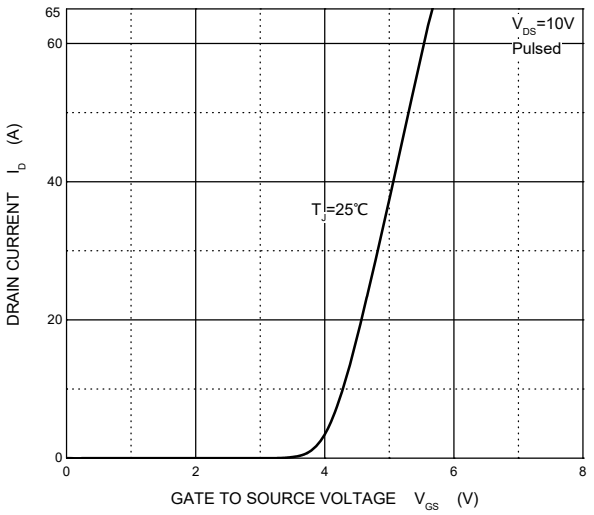
6.The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with T_a=25 ℃.

Typical Characteristics

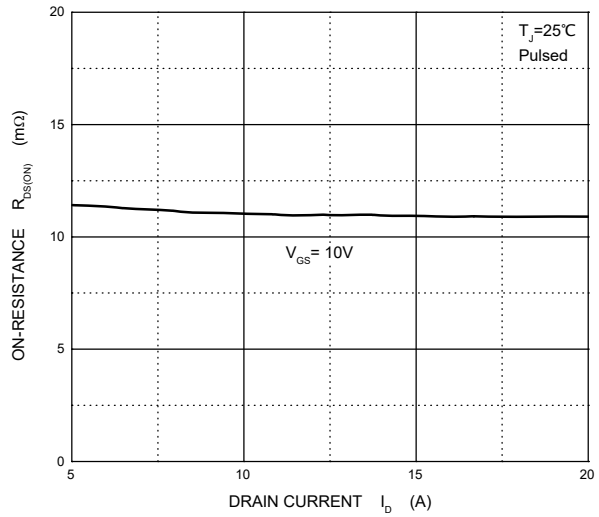
Output Characteristics



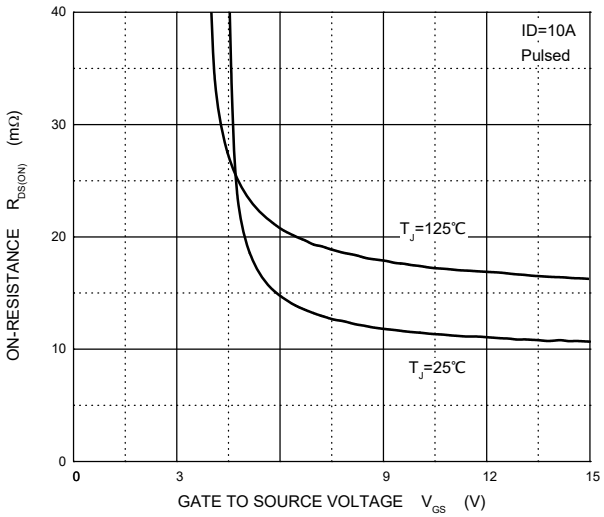
Transfer Characteristics



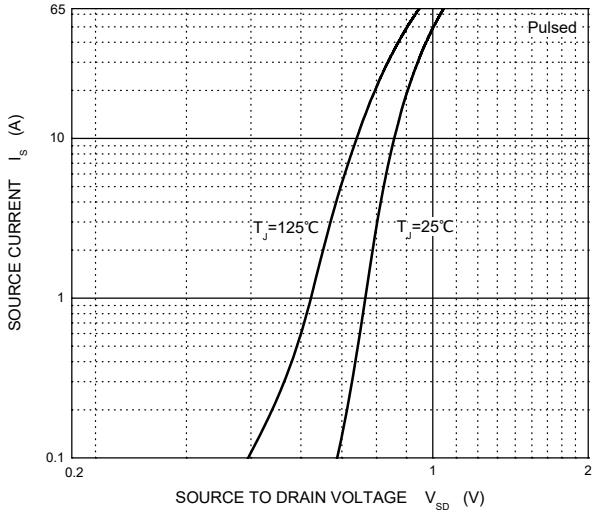
$R_{DS(ON)}$ —— I_D



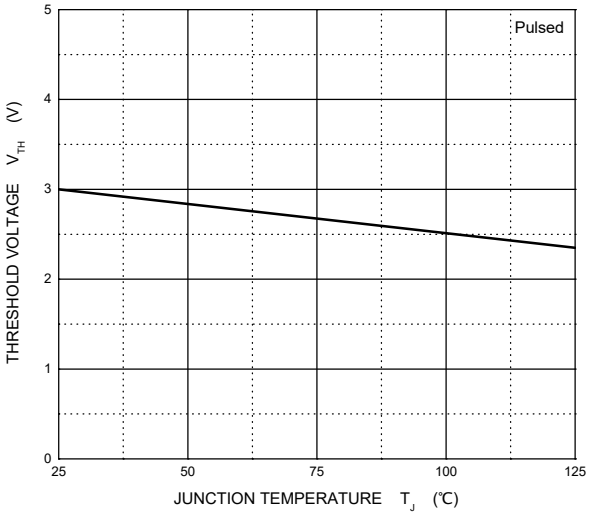
$R_{DS(ON)}$—— V_{GS}



I_S —— V_{SD}

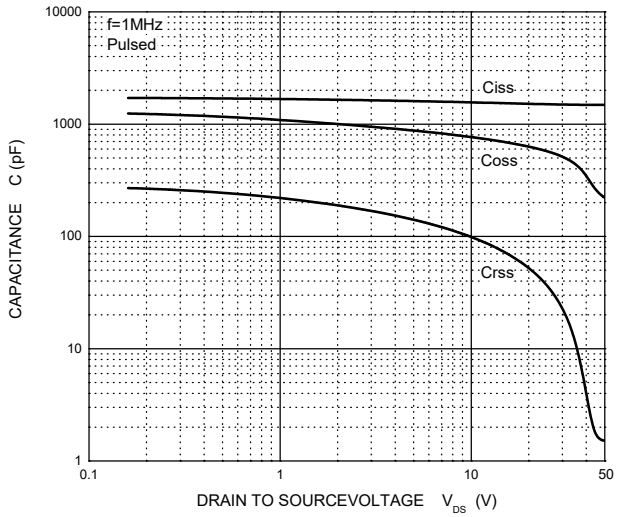


Threshold Voltage

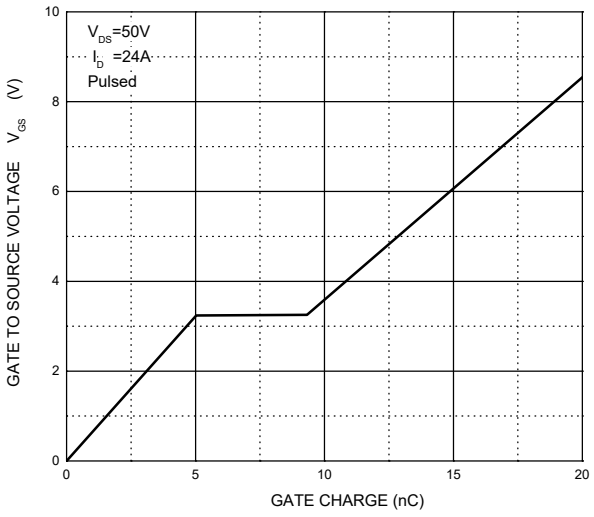


Typical Characteristics

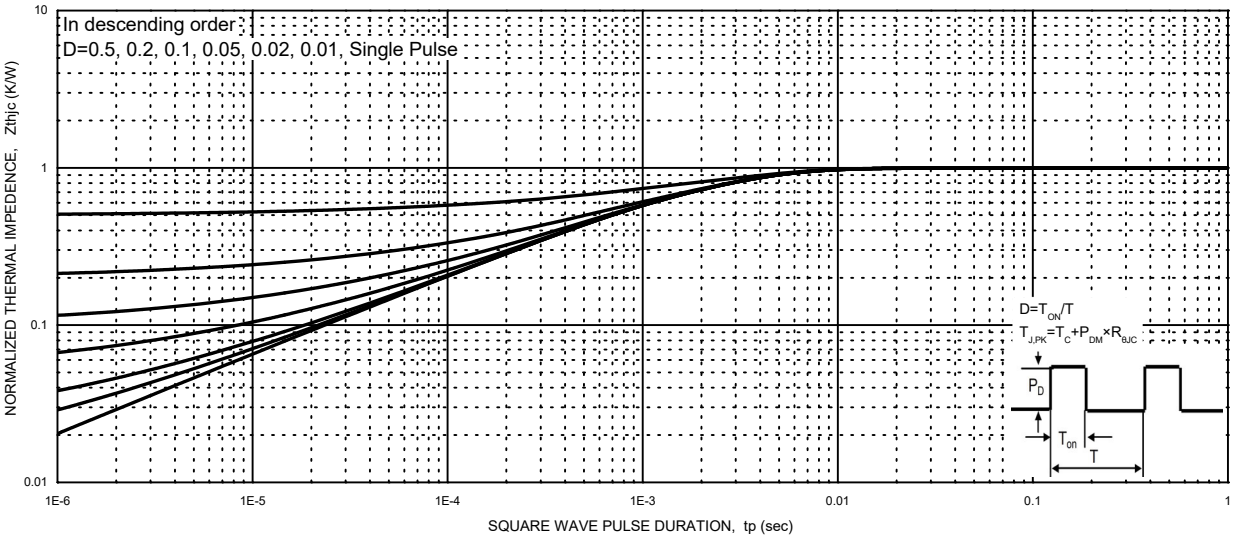
Capacitances



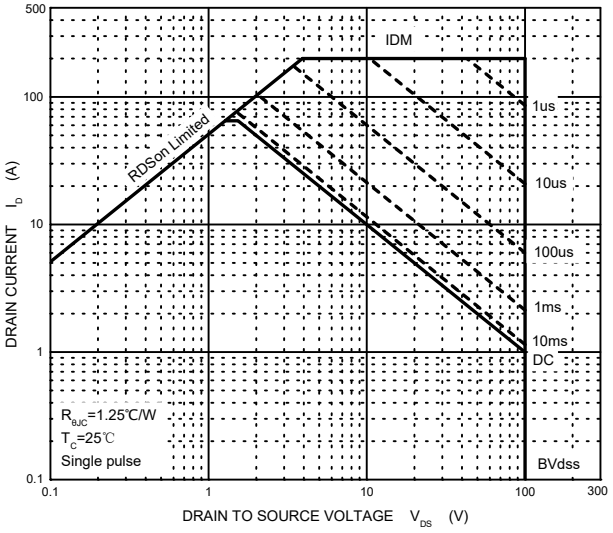
Gate Charge



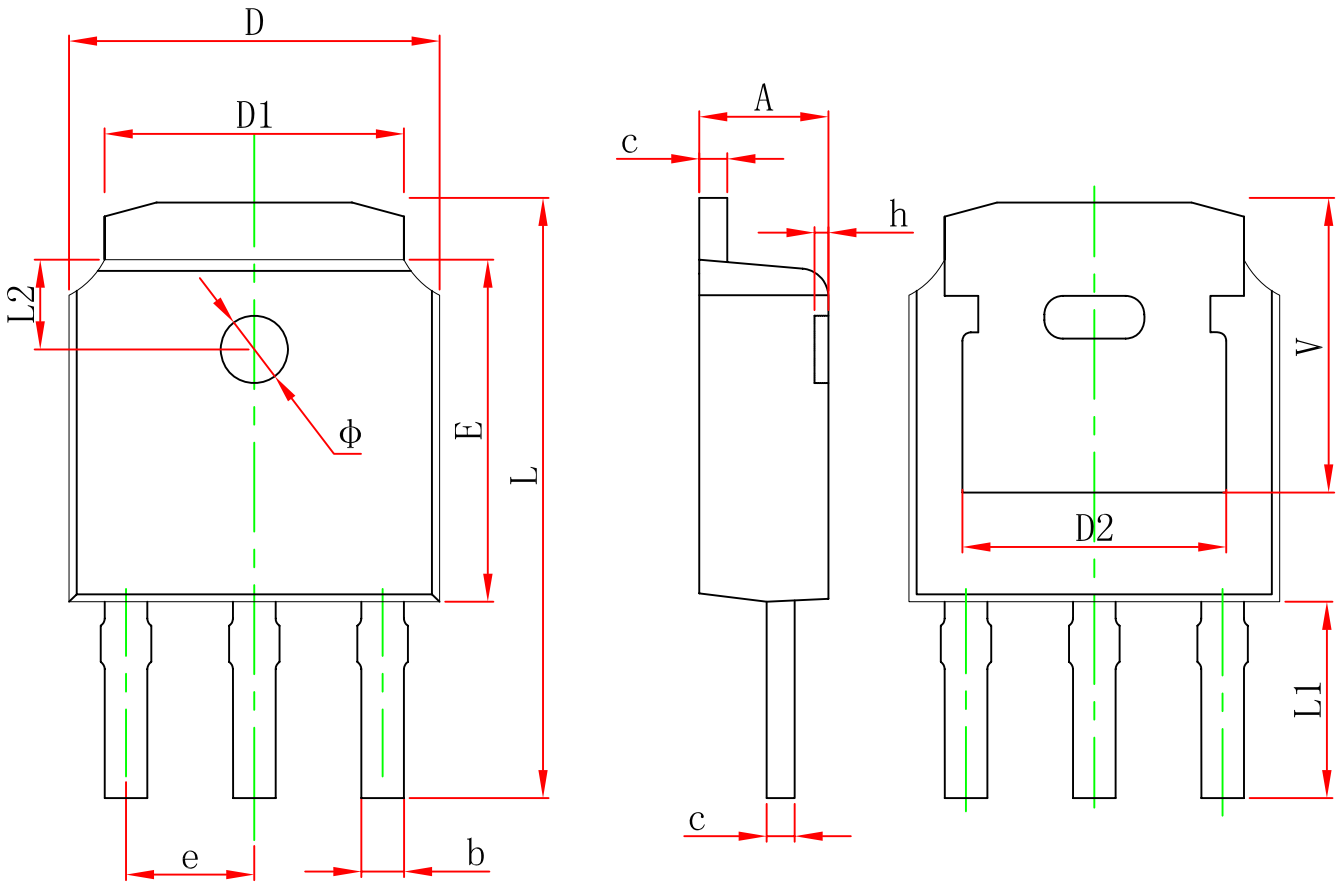
NORMALIZED TRAISIENT THERMAL IMPENDANCE



MAXIMUM FORWARD BIASED SAFE OPERATING AREA



TO-251S Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	10.312	10.912	0.406	0.430
L1	3.300	3.700	0.130	0.146
L2	1.600 REF.		0.063 REF.	
Φ	1.100	1.300	0.043	0.051
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	