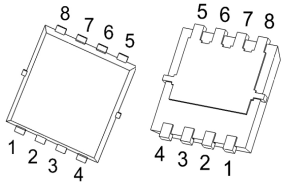
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

PDFNWB3.3×3.3-8L Plastic-Encapsulate MOSFETS

CJAB40SN10 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$TYP	I_D
100V	8.5mΩ@10V	40A
	11mΩ@4.5V	

PDFNWB3.3×3.3-8L



DESCRIPTION

The CJAB40SN10 uses SGT technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications.

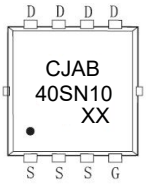
FEATURES

- Load switch
- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation

APPLICATIONS

- SMPS and general purpose applications
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

MARKING

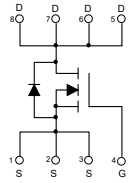


CJAB40SN10 = Part No.

Solid dot=Pin1 indicator

XX=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_D①	40	A
Pulsed Drain Current	I_{DM}②	160	A
Single Pulsed Avalanche Energy	E_{AS}③	80	mJ
Power Dissipation	P_D①	1.5	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$⑥	83.3	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 ~+150	℃
Lead Temperature for Soldering Purposes(1/8'' from case for 10s)	T_L	260	℃

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 =250μA	100			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =80V, V_{GS} =0V			1	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
On characteristics④						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.4	1.8	2.2	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =12A		8.5	13	mΩ
		V_{GS} =4.5V, I_D =9A		11	17	mΩ
Dynamic characteristics④⑤						
Input capacitance	C_{iss}	V_{DS} =50V,V_{GS} =0V, f =1MHz		1460	2920	pF
Output capacitance	C_{oss}			280	560	
Reverse transfer capacitance	C_{rss}			5.2	11	
Gate resistance	R_g	f =1MHz		1.4		Ω
Switching characteristics④⑤						
Total gate charge	Q_g	V_{DS}=50V, V_{GS}=10V, I_D=20A		25	50	nC
Gate-source charge	Q_{gs}			5.0	10	
Gate-drain charge	Q_{gd}			6.5	13	
Turn-on delay time	$t_{d(on)}$	V_{DS}=50V,I_D=20A, V_{GS}=10V,R_G=10Ω		6.5	13	ns
Turn-on rise time	t_r			4.5	9.0	
Turn-off delay time	$t_{d(off)}$			19	38	
Turn-off fall time	t_f			3.5	7.0	
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	V_{SD}④	V_{GS} =0V, I_S=12A			1.2	V
Continuous drain-source diode forward current	I_S①				40	A
Pulsed drain-source diode forward current	I_{SM}②				160	A
Reverse Recovery Time	t_{rr}④	V_R=50V, I_F=20A, dI_F/dt=500A/μs		42		ns
Reverse Recovery Charge	Q_{rr}④			160		nC

Notes:

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

2.P_W≤10μs, Duty cycle≤1%.

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

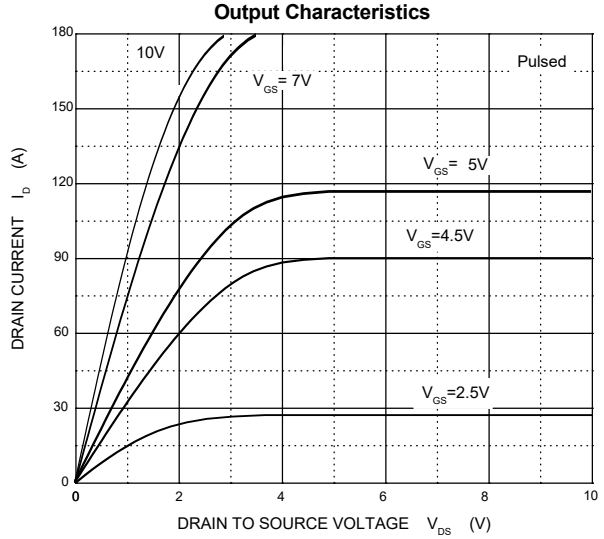
4.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

5.Guaranteed by design, not subject to production.

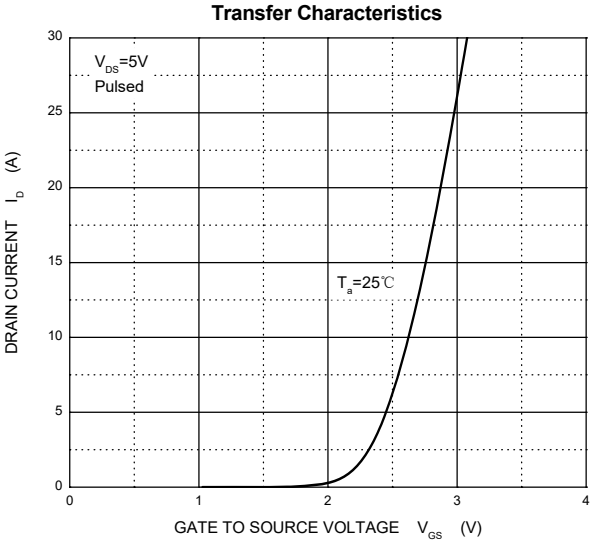
6.The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with T_a=25 ℃.

Typical Characteristics

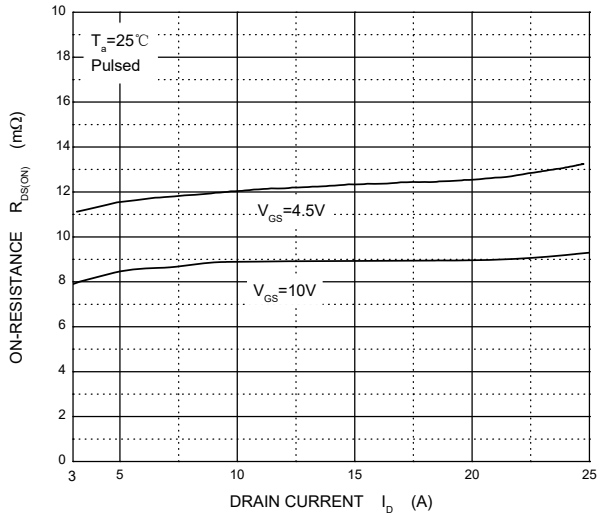
Output Characteristics



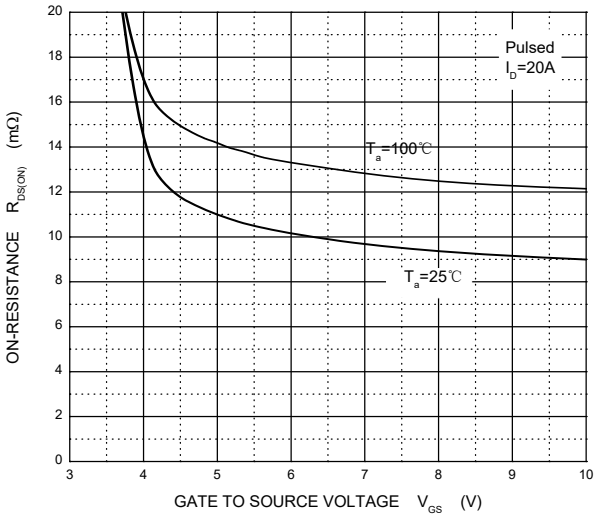
Transfer Characteristics



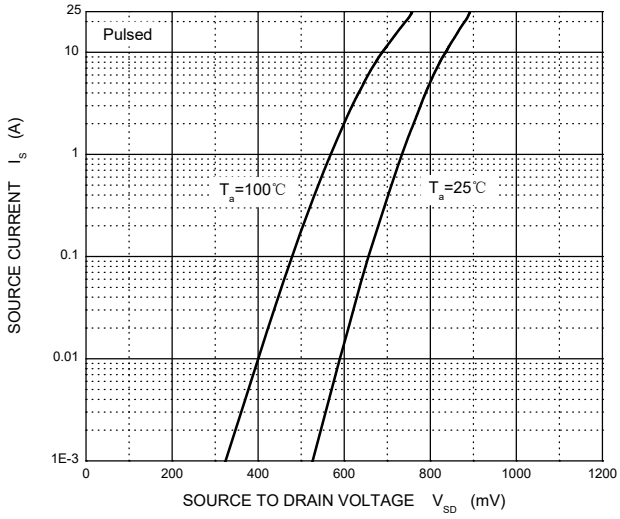
$R_{DS(ON)}$ —— I_D



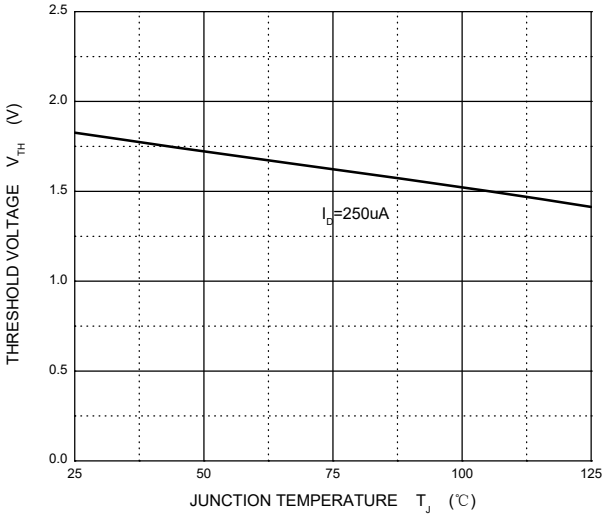
$R_{DS(ON)}$—— V_{GS}



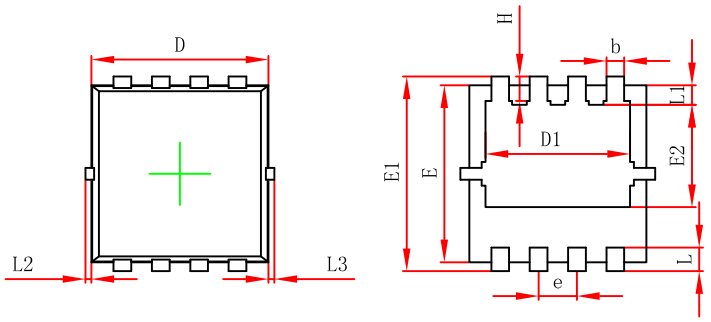
I_S —— V_{SD}



Threshold Voltage

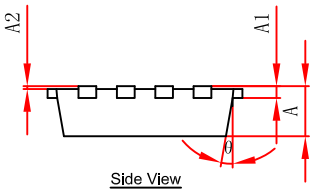


PDFNWB3.3x3.3-8L Package Outline Dimensions



Top View
[顶视图]

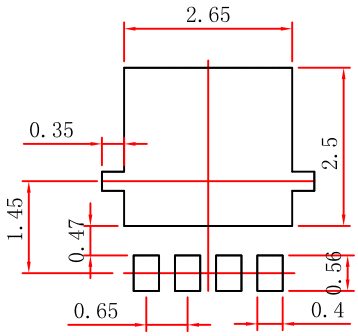
Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°

PDFNWB3.3x3.3-8L Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.