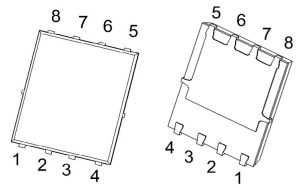
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

PDFNWB5×6-8L-D Plastic-EncapsulateMOSFETS

CJAC75SN10 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$TYP	I_D
100V	8.0mΩ@10V	75A
	10.5mΩ@4.5V	

PDFNWB5×6-8L



DESCRIPTION

The CJAC75SN10 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

- High Power and current handing capability
- Load switch
- High density cell design for ultra low $R_{DS(ON)}$
- Lead free product is acquired
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation

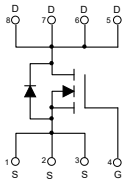
APPLICATIONS

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

MARKING

CJAC75SN10 = Part No. Solid dot=Pin1 indicator XX=Code

EQUIVALENT CIRCUIT



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D①	75	A
Pulsed Drain Current	I_{DM}②	260	
Maximum Power Dissipation	P_D①	138.9	W
Avalanche energy*	E_{AS}③	100	mJ
Thermal Resistance from Junction to Case	$R_{\theta JC}$⑥	0.9	℃/W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$⑥	62	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics④						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	100			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =100V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.0	1.7	2.5	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =10A		8.0	10	mΩ
		V_{GS} =4.5V, I_D =10A		10.5	16	
Dynamic characteristics④⑤						
Total gate charge	Q_g	V_{DS} =50V,V_{GS} =10V,I_D =20A		40	80	nC
Gate-source charge	Q_{gs}			8	16	
Gate-drain charge	Q_{gd}			6	12	
Input Capacitance	C_{iss}	V_{DS} =50V,V_{GS} =0V,f =100kHz		1830	3660	pF
Output Capacitance	C_{oss}			357	720	
Reverse Transfer Capacitance	C_{rss}			7.15	15	
Gate resistance	R_g	f =1MHz		1.3		Ω
SWITCHING PARAMETERS④⑤						
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V, V_{DS}=50V, R_G=10Ω, I_D=20A		8.0	16	ns
Turn-on rise time	t_r			5.2	11	
Turn-off delay time	$t_{d(off)}$			44.8	90	
Turn-off fall time	t_f			5.6	13	
Source-Drain Diode characteristics						
Body diode voltage	V_{SD}④	I_S=20A,V_{GS}=0V			1.2	V
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			165		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°℃.

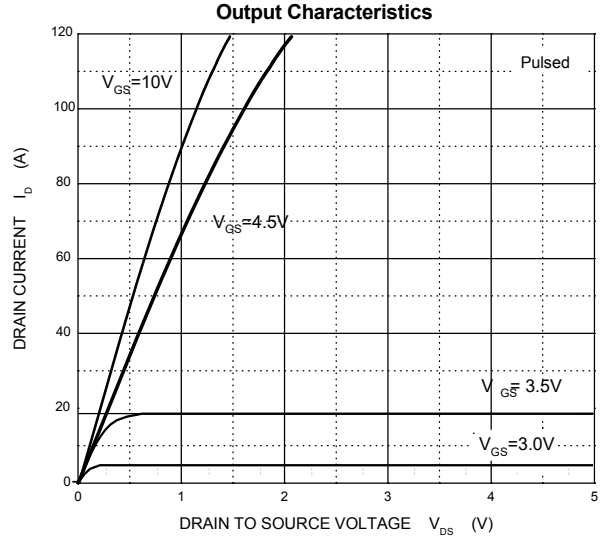
4.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

5.Guaranteed by design, not subject to production.

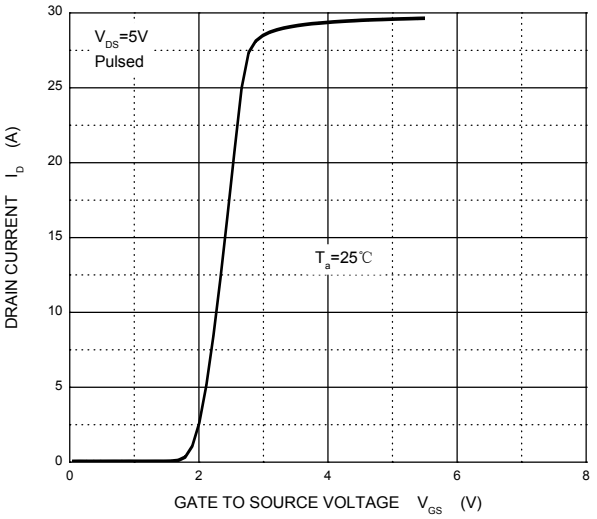
6.The value of $R_{\theta JA}$,RθJC is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with T_a=25 ℃.

Typical Characteristics

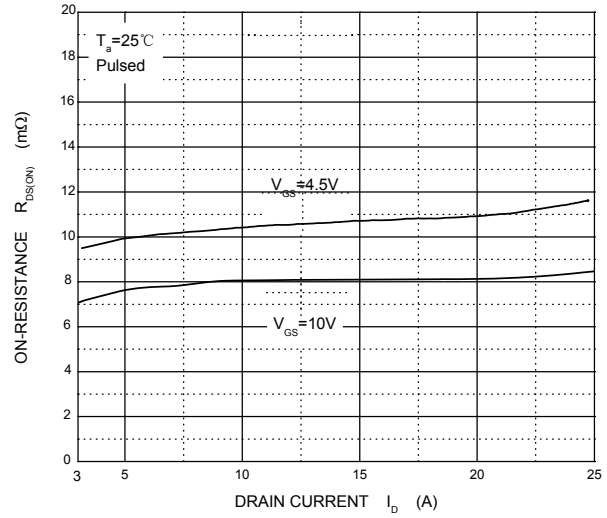
Output Characteristics



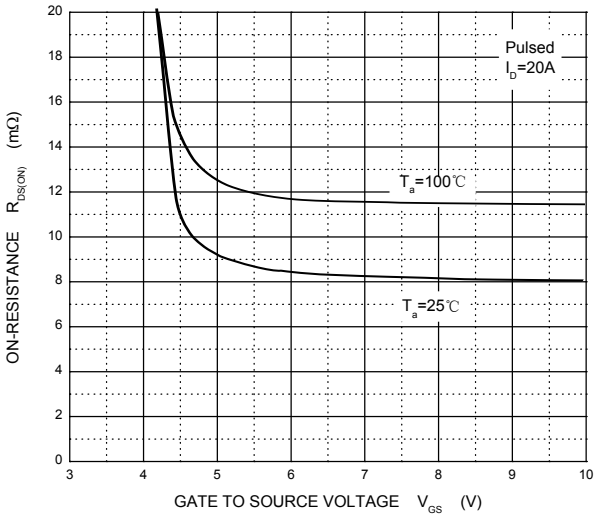
Transfer Characteristics



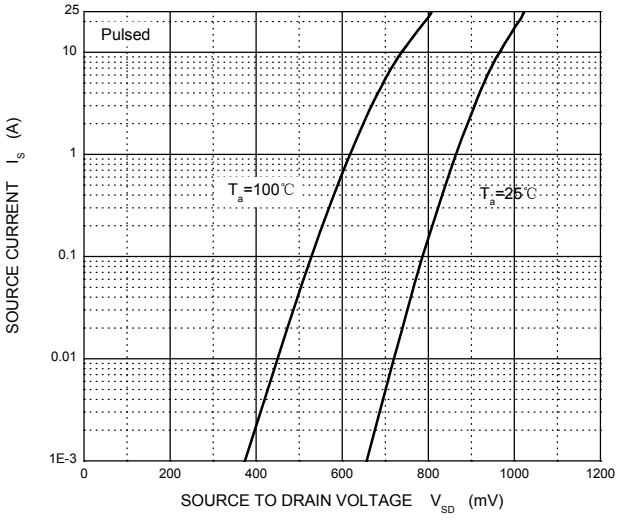
$R_{DS(ON)}$ —— I_D



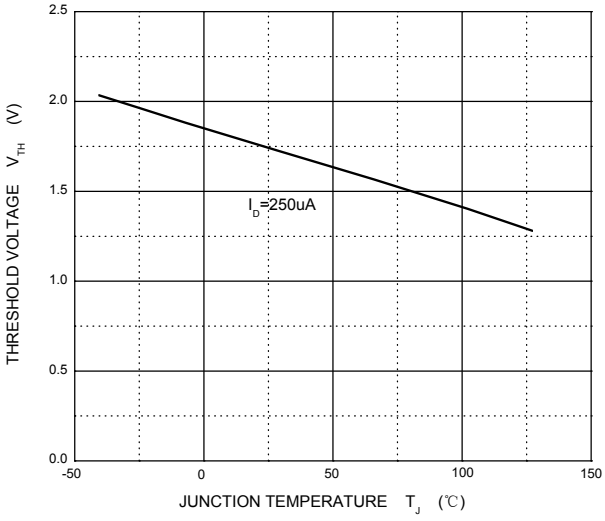
$R_{DS(ON)}$—— V_{GS}



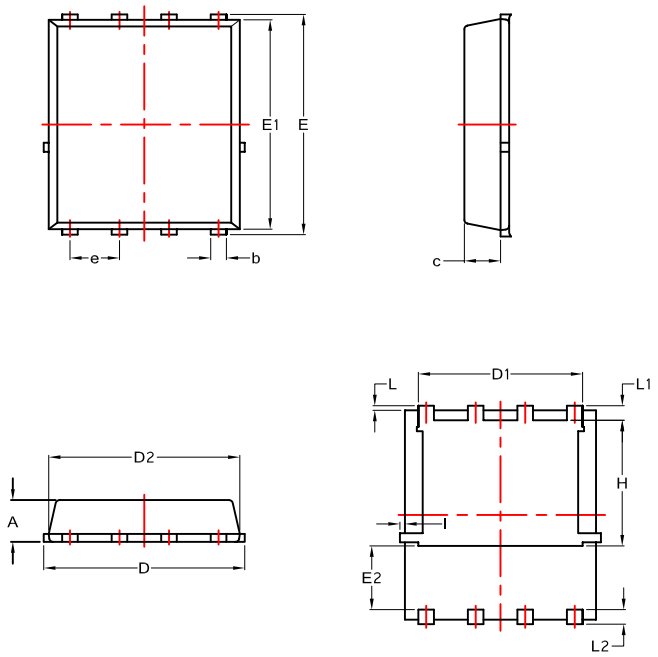
I_S —— V_{SD}



Threshold Voltage

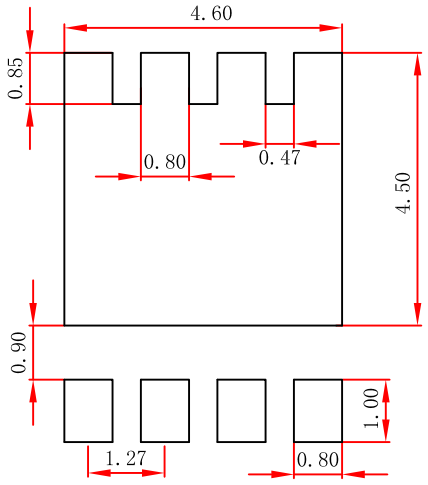


PDFNWB5×6-8L-D Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.03	1.17	0.0406	0.0461
b	0.34	0.48	0.0134	0.0189
c	0.824	0.970	0.0324	0.0382
D	4.80	5.40	0.1890	0.2126
D1	4.11	4.31	0.1618	0.1697
D2	4.80	5.00	0.1890	0.1969
E	5.95	6.15	0.2343	0.2421
E1	5.65	5.85	0.2224	0.2303
E2	1.60	-	0.0630	-
e	1.270 BSC		0.050 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.38	0.50	0.0150	0.0197
L2	0.38	0.50	0.0150	0.0197
H	3.30	3.50	0.1299	0.1378
I	-	0.18	-	0.0070

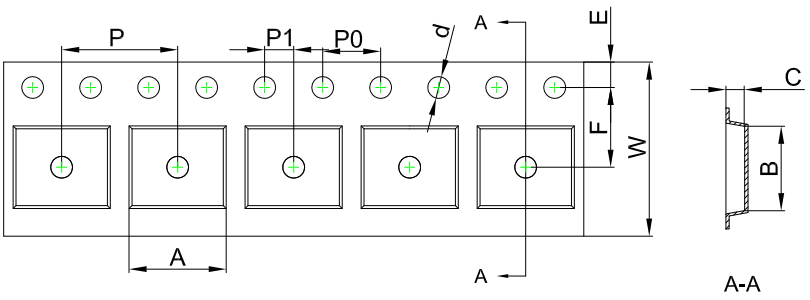
PDFNWB5×6-8L-D Suggested Pad Layout



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

PDFNWB5×6 Tape and Reel

PDFNWB5×6-8L Embossed Carrier Tape

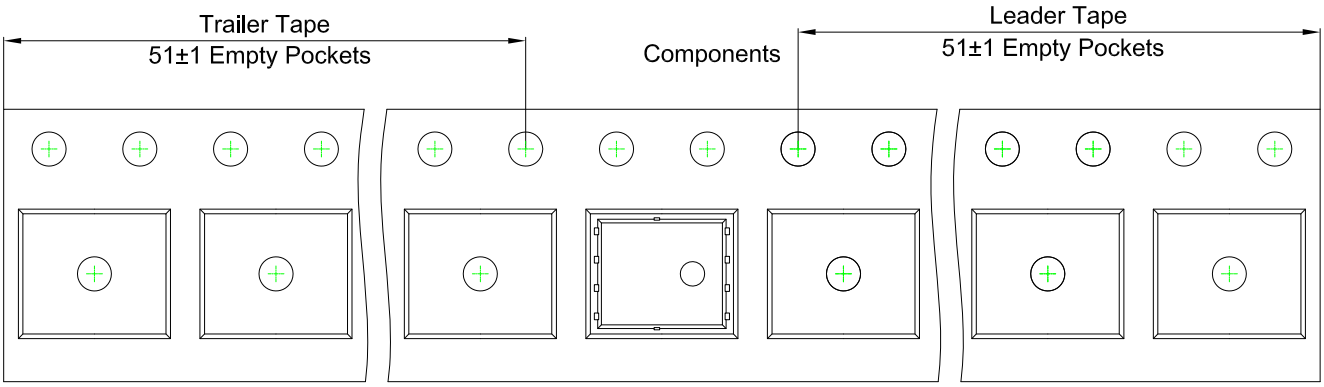


Packaging Description:

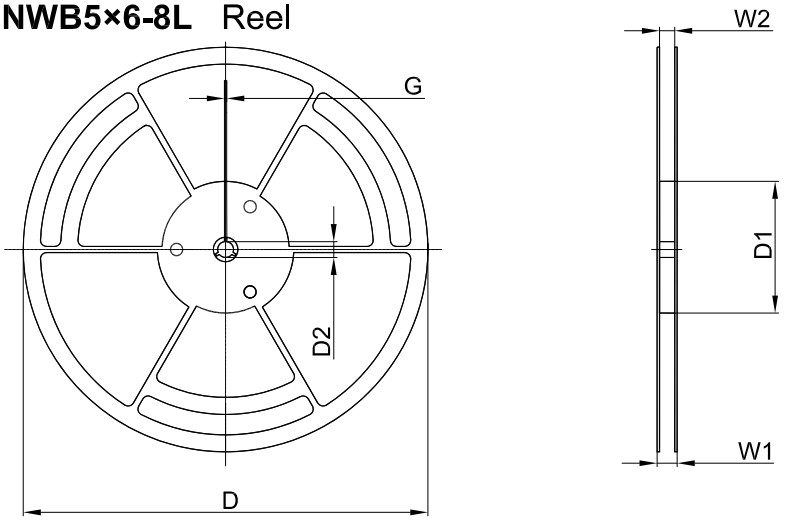
PDFNWB5×6-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 5,000 units per 13" or 33.0 cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
PDFNWB5×6-8L	6.30	5.30	1.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

PDFNWB5×6-8L Tape Leader and Trailer



PDFNWB5×6-8L Reel



Dimensions are in millimeter						
Reel Option	D	D1	D2	G	W1	W2
13"Dia	Ø330.00	100.00	13.00	1.90	17.60	12.40

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)
5,000 pcs	13 inch	5,000 pcs	340×336×29	50,000 pcs	353×346×365