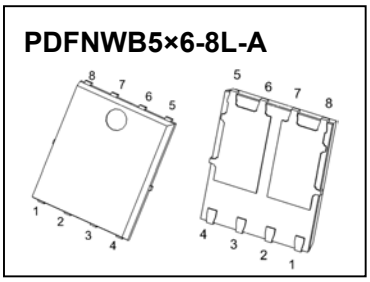
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

PDFNWB5×6-8L-A Plastic-Encapsulate MOSFETS

CJAC20N06D Dual N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$ TYP	I_D
60V	17mΩ @10V	20A
	22mΩ @4.5V	



DESCRIPTION

The CJAC20N06D provides excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications

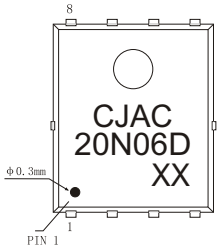
FEATURES

- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation

APPLICATIONS

- DC/DC converter
- High-frequency switching and synchronous rectification

MARKING

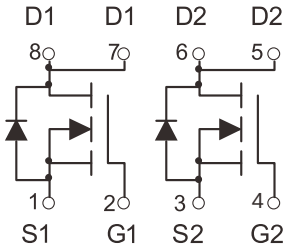


CJAC20N06D = Part No.

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}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D ①	20	A
Pulsed Drain Current	I_{DM} ②	80	A
Single Pulsed Avalanche Energy	E_{AS} ③	19	mJ
Power Dissipation	P_D ⑥	87.4	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$ ⑥	103.2	℃/W
Thermal Resistance from Junction to Case	$R_{\theta JC}$ ⑦	1.43	℃/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, ID =250μA	60			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =60V, V_{GS} =0V			1	μA
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	1.0	1.7	2.5	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =10A		17	25	mΩ
		V_{GS} =4.5V, I_D =10A		22	35	mΩ
Dynamic characteristics ⑤						
Input capacitance	C_{iss}	V_{DS} =30V,V_{GS} =0V, f =1MHz		1970	2561	pF
Output capacitance	C_{oss}			97.4	126.6	
Reverse transfer capacitance	C_{rss}			94	122	
Switching characteristics ⑤						
Total gate charge	Q_g	V_{DS}=48V, V_{GS}=10V, I_D=20A		42.8		nC
Gate-source charge	Q_{gs}			4.3		
Gate-drain charge	Q_{gd}			13.6		
Turn-on delay time	$t_{d(on)}$	V_{DD}=30V,I_D=20A, V_{GS}=10V,R_G=11Ω		5		ns
Turn-on rise time	t_r			1.5		
Turn-off delay time	$t_{d(off)}$			18		
Turn-off fall time	t_f			10		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	V_{SD} ④	V_{GS} =0V, I_S=10A			1.2	V
Continuous drain-source diode forward current	I_S ①				20	A
Pulsed drain-source diode forward current	I_{SM} ②				80	A

Notes:

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

2.P_W≤10μs, Duty cycle≤1%.

3.EAS condition: V_{DD}=30V,V_{GS}=10V, L=0.1mH, Rg=25Ω Starting T_J = 25°℃.

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

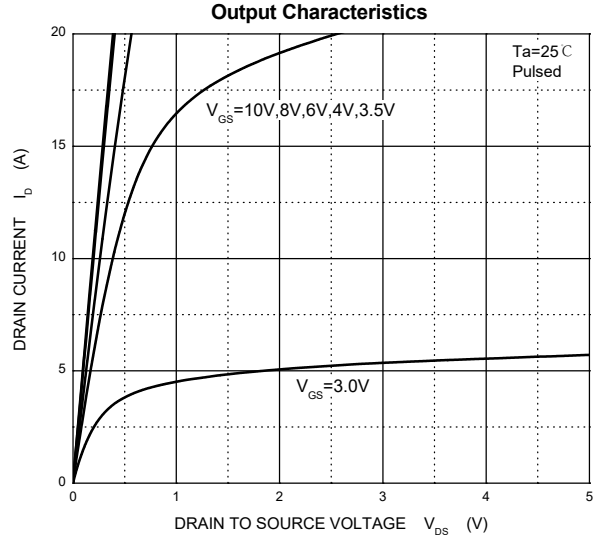
5.Guaranteed by design, not subject to production.

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℃ .Single-side active.

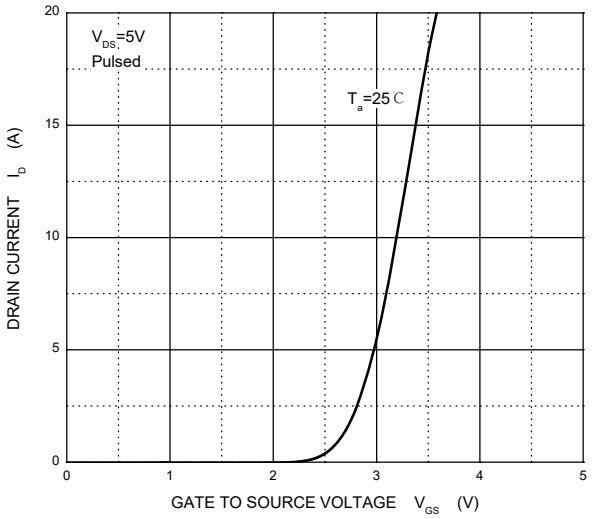
7.Single-side active.T_C=25℃ .

Typical Characteristics

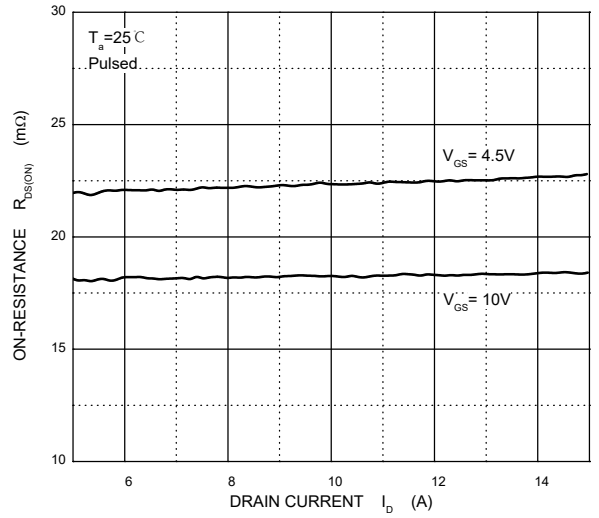
Output Characteristics



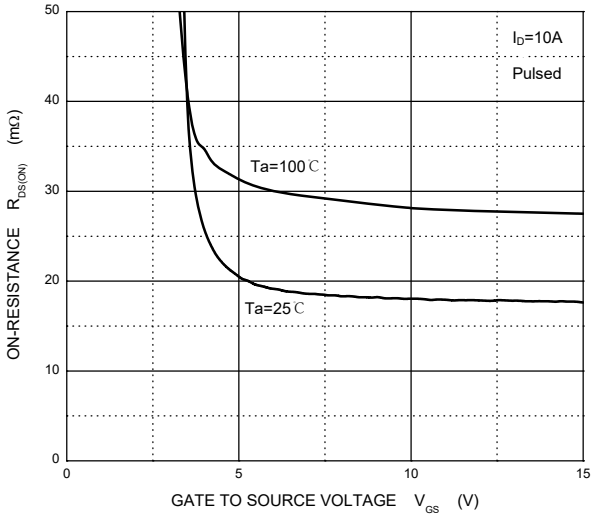
Transfer Characteristics



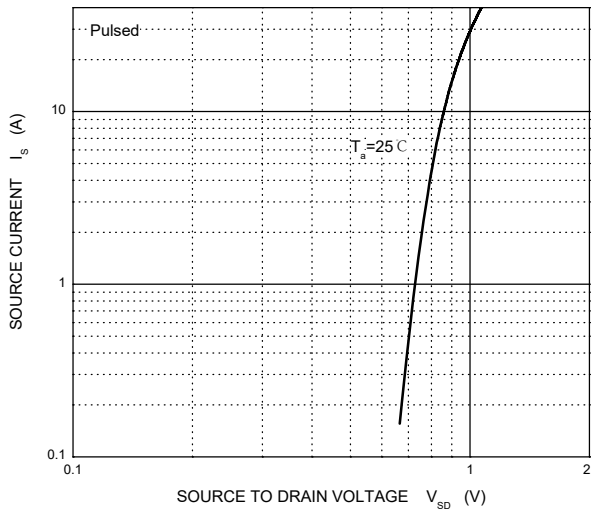
$R_{DS(ON)}$ — I_D



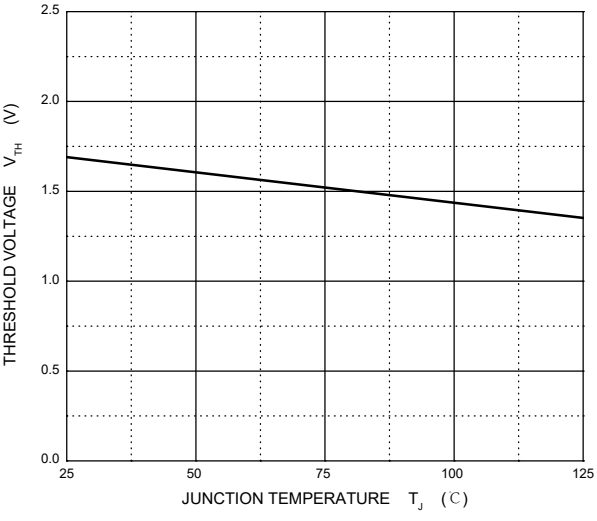
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}

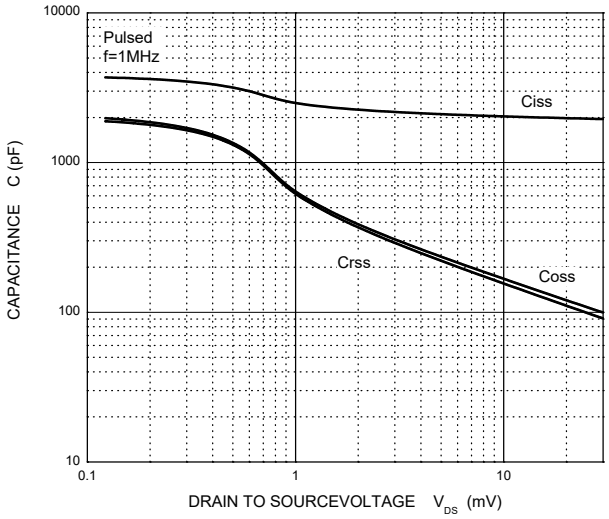


Threshold Voltage

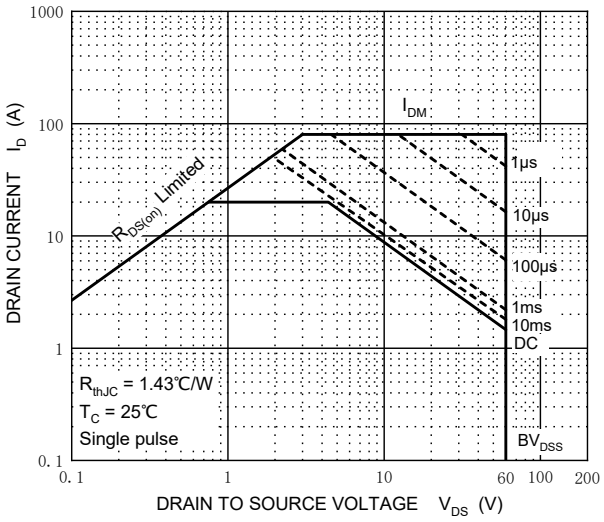


Typical Characteristics

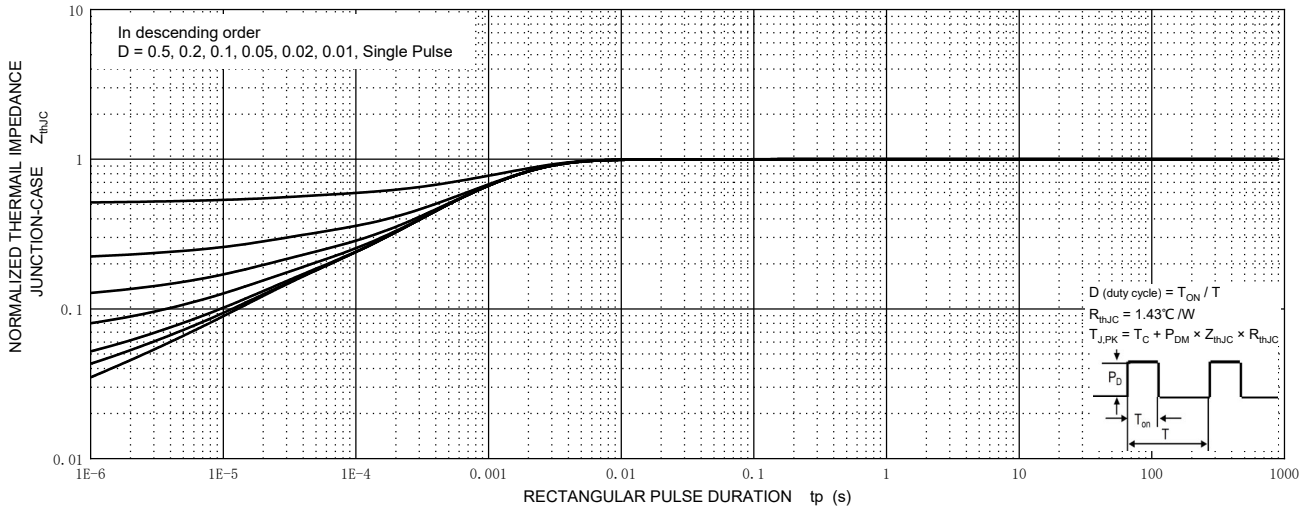
Capacitances



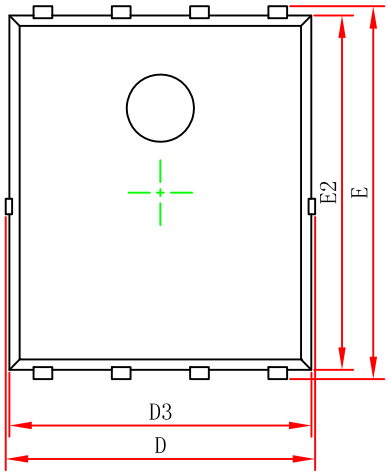
Maximum Safe Operating Area（Single-side active）



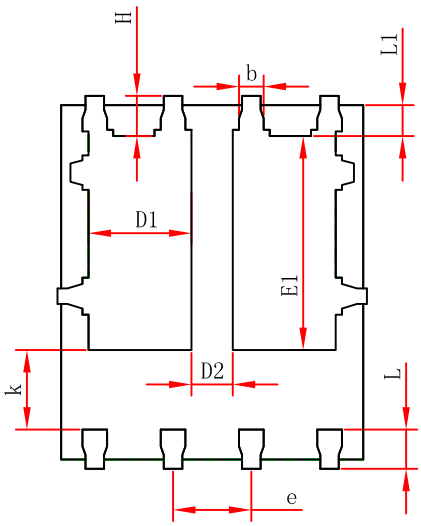
Transient Thermal Impedance, Junction-Case（Single-side active）



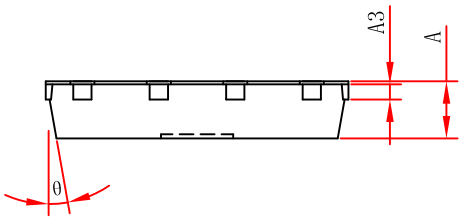
PDFNWB5×6-8L-A Package Outline Dimensions



Top View
[顶视图]



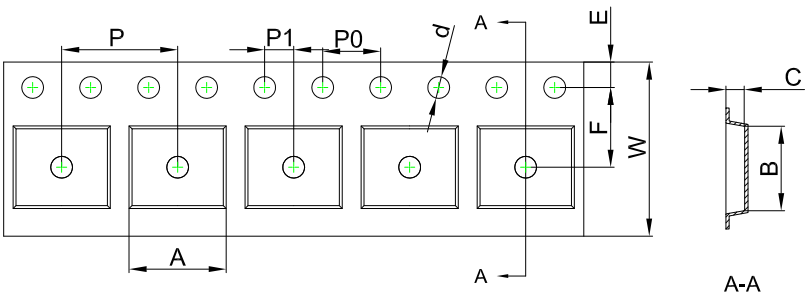
Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254 REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	1.470	1.870	0.058	0.074
D2	0.470	0.870	0.019	0.034
E1	3.375	3.575	0.133	0.141
D3	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°

PDFNWB5×6-8L-A Embossed Carrier Tape

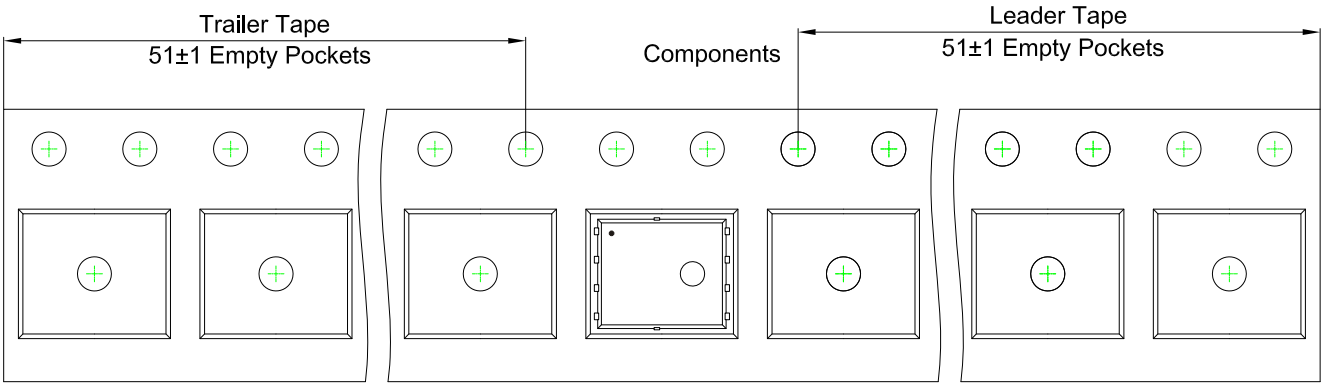


Packaging Description:

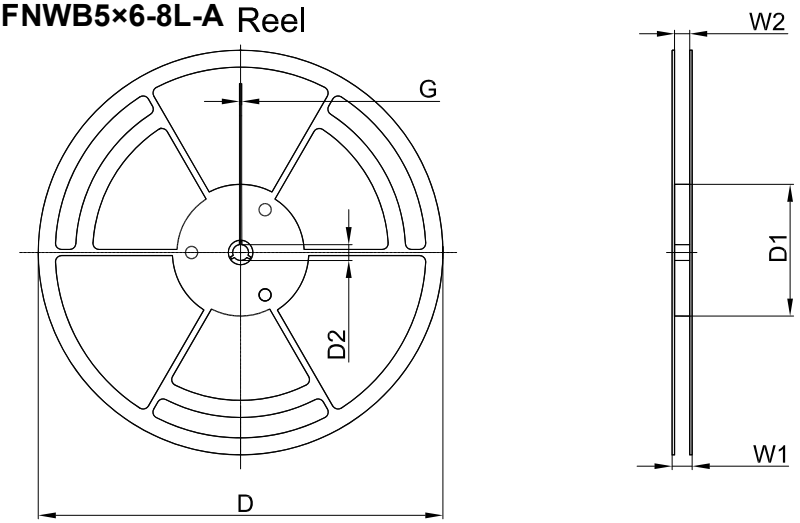
PDFNWB5×6-8L-A parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled 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-A	6.30	5.30	1.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

PDFNWB5×6-8L-A Tape Leader and Trailer



PDFNWB5×6-8L-A 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