

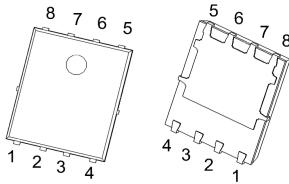


JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

PDFNWB5×6-8L Plastic-Encapsulate MOSFETS

CJAC90SN12 N-Channel Power MOSFET

V _{(BR)DSS}	R _{DS(on)MAX}	I _D
120V	6.8mΩ@10V	90A

PDFNWB5×6-8L

DESCRIPTION

The CJAC90SN12 uses shielded gate trench 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

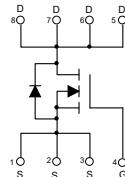


CJAC90SN12 = Part No.

Solid dot=Pin1 indicator

XX=Code

EQUIVALENT CIRCUIT



ABSOLUTE MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	120	V
Gate-Source Voltage	V _{GS}	±20	
Continuous Drain Current	I _D	90	A
Pulsed Drain Current ⁽¹⁾	I _{DM}	360	
Maximum Power Dissipation ⁽²⁾	P _D	2	W
Avalanche energy*	E _{AS}	500	mJ
Thermal Resistance from Junction to Case	R _{θJC}	0.85	°C/W
Thermal Resistance from Junction to Ambient ⁽³⁾	R _{θJA}	62.5	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55~+150	

* EAS test condition V_{DD}=50V, V_{GS}=10V, RG=25 Ω, L=0.5 mH, starting T_j=25 °C.

MOSFET ELECTRICAL CHARACTERISTICS

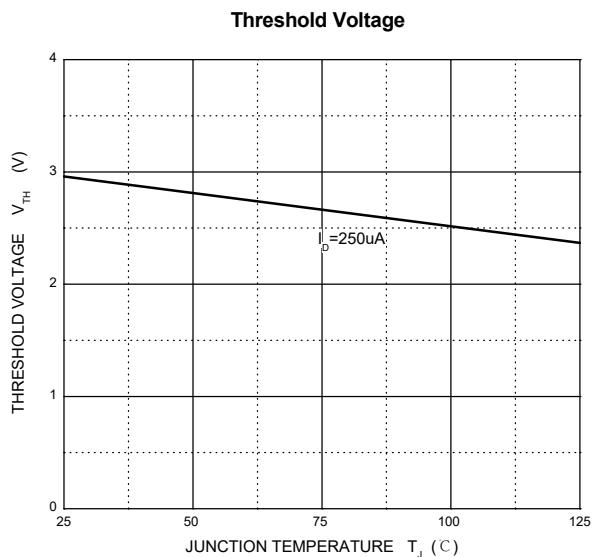
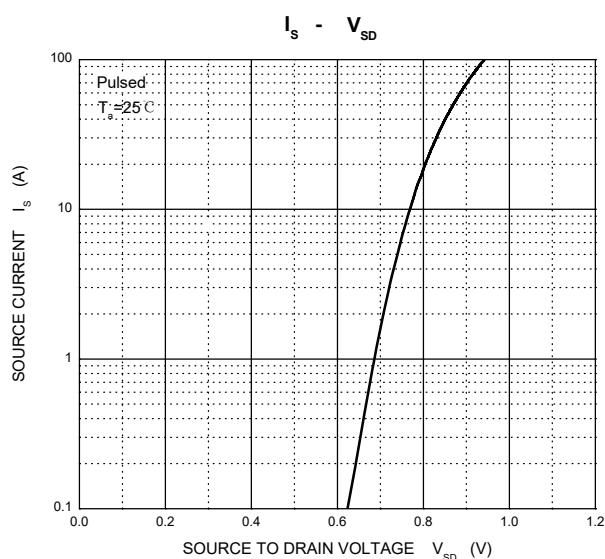
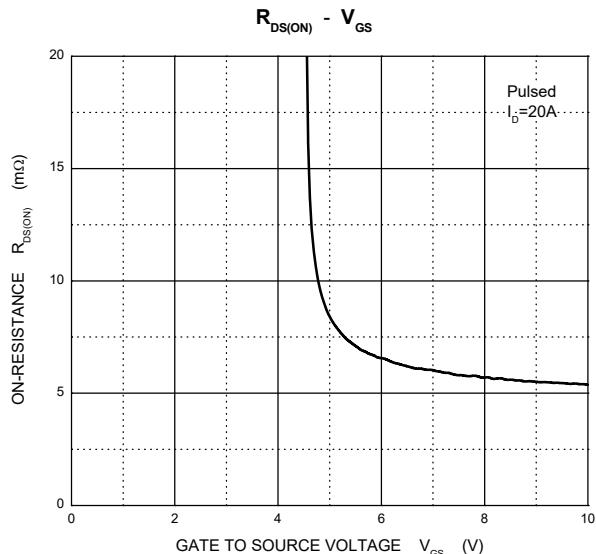
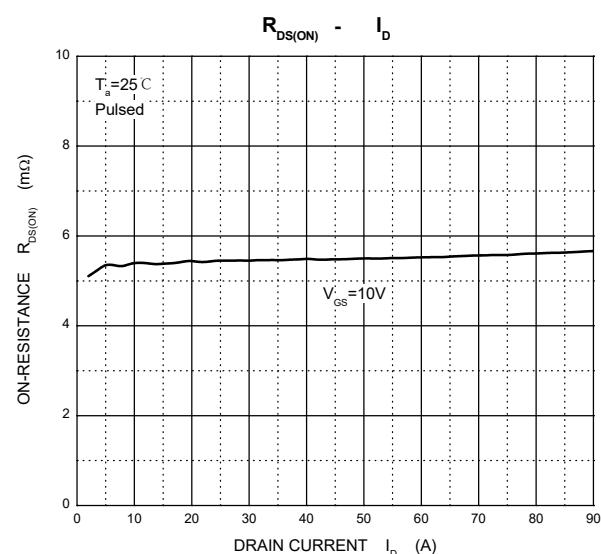
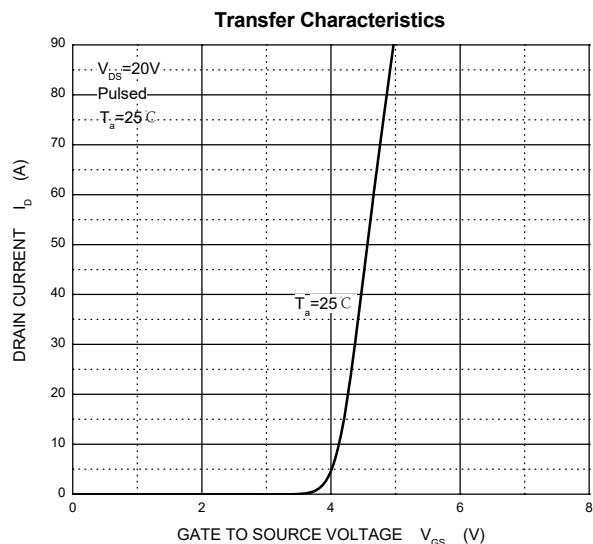
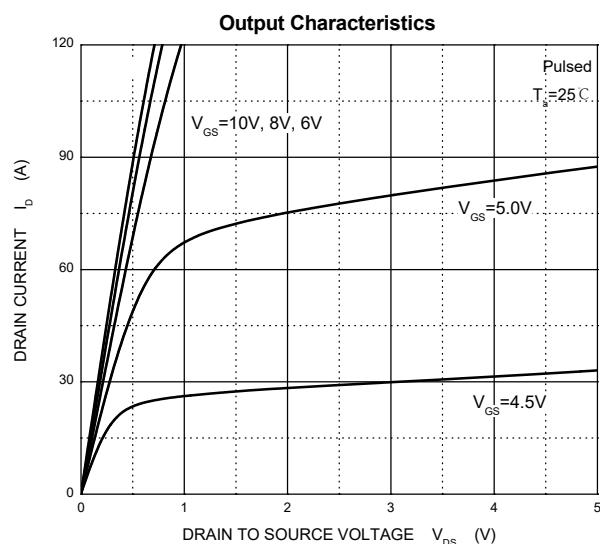
T_a=25 °C unless otherwise specified

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250µA	120			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 120V, V _{GS} = 0V			1	µA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage ⁽¹⁾	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250µA	2.0	3.0	4.0	V
Drain-source on-resistance ⁽¹⁾	R _{DS(on)}	V _{GS} = 10V, I _D = 20A		5.4	6.8	mΩ
Gate resistance	R _G			3.2		Ω
Dynamic characteristics⁽⁴⁾						
Total gate charge	Q _g	V _{DS} = 60V, V _{GS} = 10V, I _D = 20A		45.2		nC
Gate-source charge	Q _{gs}			13.5		
Gate-drain charge	Q _{gd}			6.7		
Input Capacitance	C _{iss}	V _{DS} = 60V, V _{GS} = 0V, f = 1MHz		3670		pF
Output Capacitance	C _{oss}			472		
Reverse Transfer Capacitance	C _{rss}			7.6		
SWITCHING PARAMETERS⁽⁴⁾						
Turn-on delay time	t _{d(on)}	V _{GS} = 10V, V _{DS} = 60V, R _G = 10Ω, I _D = 20A		16		ns
Turn-on rise time	t _r			9		
Turn-off delay time	t _{d(off)}			27		
Turn-off fall time	t _f			12		
Source-Drain Diode characteristics⁽¹⁾						
Body diode voltage	V _{SD}	I _S = 10A, V _{GS} = 0V			1.2	V
Reverse recovery time	T _{rr}	V _R = 60V, I _F = 20A, dI _F /dt = 500 A/µs		50		ns
Reverse recovery charge	Q _{rr}			300		nC

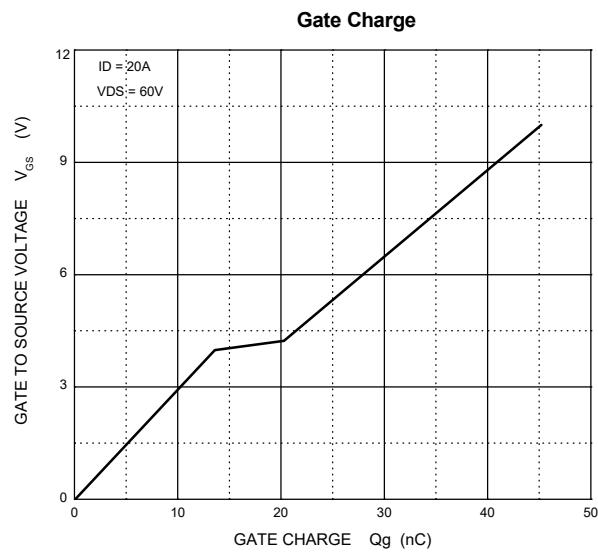
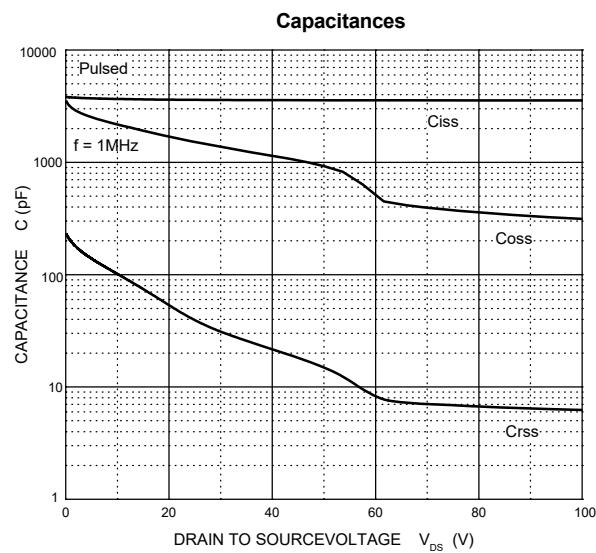
Notes:

1. Pulse Test : Pulse width≤300µs, duty cycle≤0.5%.
2. Mounted on a glass epoxy board of 25.4mm x 25.4mm x 0.8mm.
3. The value of R_{θJA} 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 °C.
4. Guaranteed by design, not subject to production testing.

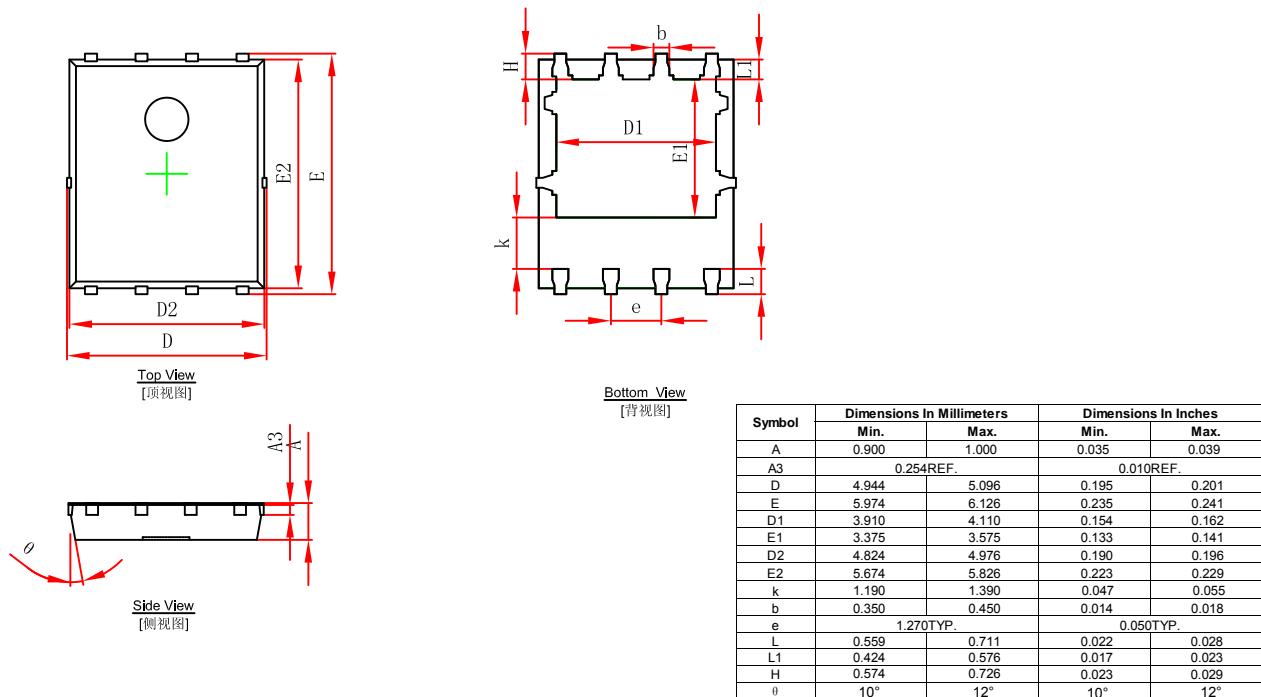
Typical Characteristics



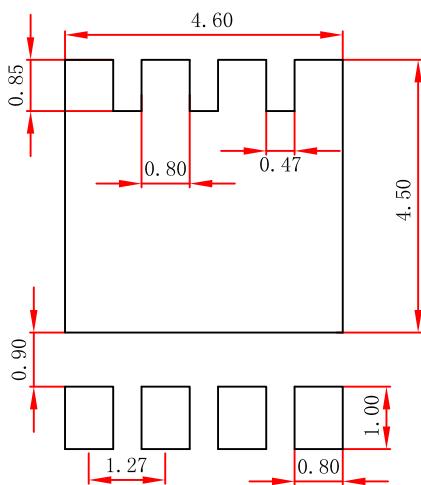
Typical Characteristics



PDFNWB5x6-8L Package Outline Dimensions



PDFNWB5x6-8L Suggested Pad Layout



Note:

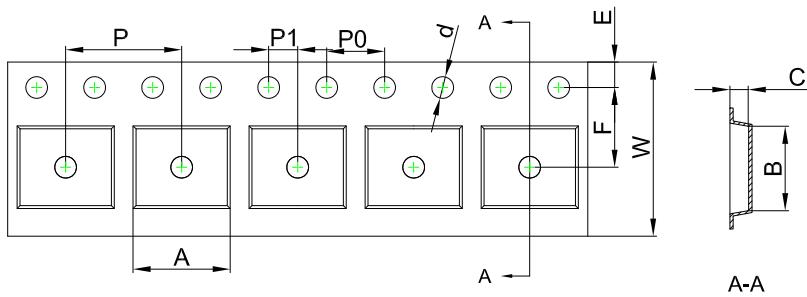
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

JSCJ reserves the right to make modifications,enhancements,improvements,corrections or other changes without further notice to any product herein. JSCJ does not assume any liability arising out of the application or use of any product described herein.

PDFNWB5×6 Tape and Reel

PDFNWB5×6-8L Embossed Carrier Tape

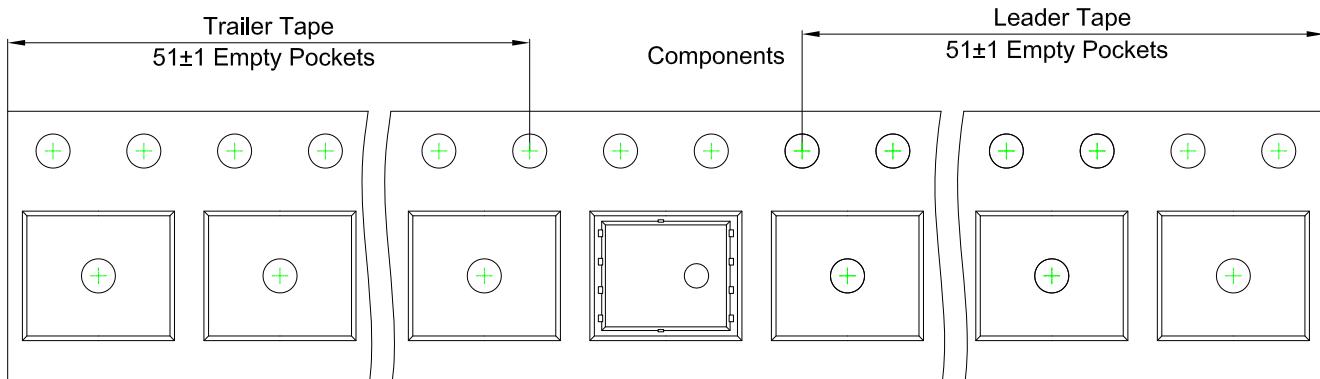


Packaging Description:

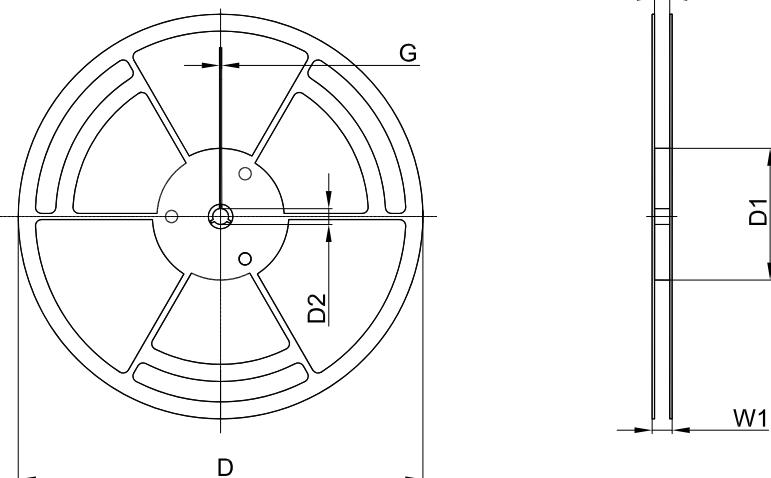
PDFNWB5×6-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts 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