

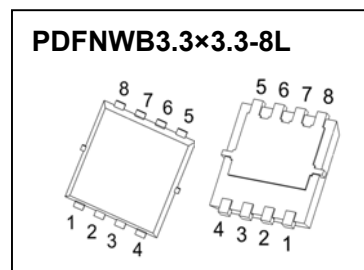


JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

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

CJAB55N03S N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	3.8mΩ@10V	55A
	5.9mΩ@4.5V	



DESCRIPTION

The CJAB55N03S uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications

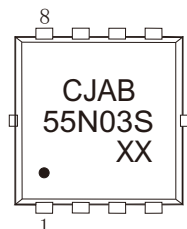
FEATURES

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

APPLICATIONS

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

MARKING

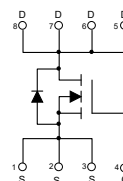


CJAB55N03S = Part No.

Solid dot = Pin1 indicator

XX = Code

EQUIVALENT CIRCUIT



ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	$I_D^{①}$	55	A
Pulsed Drain Current	$I_{DM}^{②}$	220	
Maximum Power Dissipation	$P_D^{⑥}$	40	W
Single Pulsed Avalanche Energy	$E_{AS}^{③}$	120	mJ
Thermal Resistance from Junction to Case	$R_{\theta JC}^{⑥}$	3.1	°C/W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}^{⑥}$	83.3	°C/W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	°C

MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25^{\circ}\text{C}$ 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 =250uA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1.0	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 =250uA	1.0	1.7	2.5	V
Static drain-source on-sate resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A		3.8	5.5	mΩ
		V _{GS} =4.5V, I _D =20A		5.9	8	mΩ
Forward transconductance	g _{FS}	V _{DS} =10V, I _D =20A		10		S
Dynamic characteristics ④ ⑤						
Input capacitance	C _{iss}	V _{DS} =15V,V _{GS} =0V, f =1MHz		2800		pF
Output capacitance	C _{oss}			295		
Reverse transfer capacitance	C _{rss}			240		
Gate resistance	R _g	f=1MHZ		2.7		Ω
Switching characteristics ④ ⑤						
Total gate charge	Q _g	V _{GS} =10V, V _{DS} =25V, I _D =14A		50		nC
Gate-source charge	Q _{gs}			6.2		
Gate-drain charge	Q _{gd}			11		
Turn-on delay time	t _{d(on)}	V _{DS} =15V,R _L =0.75Ω, V _{GS} =10V,R _G =3Ω		12		ns
Turn-on rise time	t _r			36		
Turn-off delay time	t _{d(off)}			49		
Turn-off fall time	t _f			12		
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				55	A
Pulsed drain-source diode forward current	I _{SM} ②				220	A

Notes:

1. $T_C = 25^{\circ}\text{C}$ Limited only by maximum temperature allowed.

2. $P_W \leq 10\mu s$, Duty cycles $\leq 1\%$.

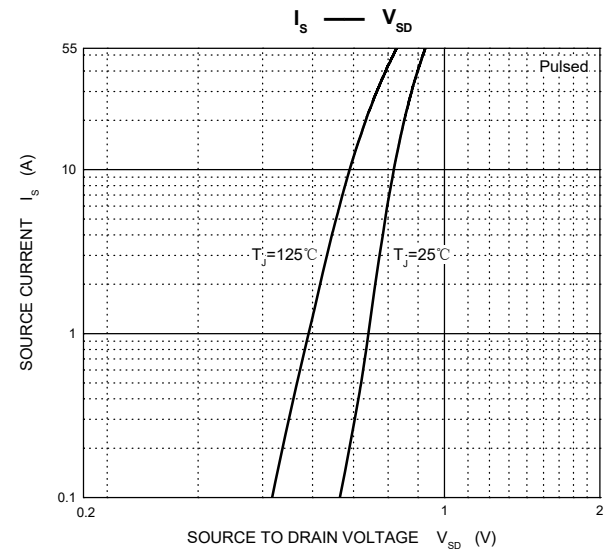
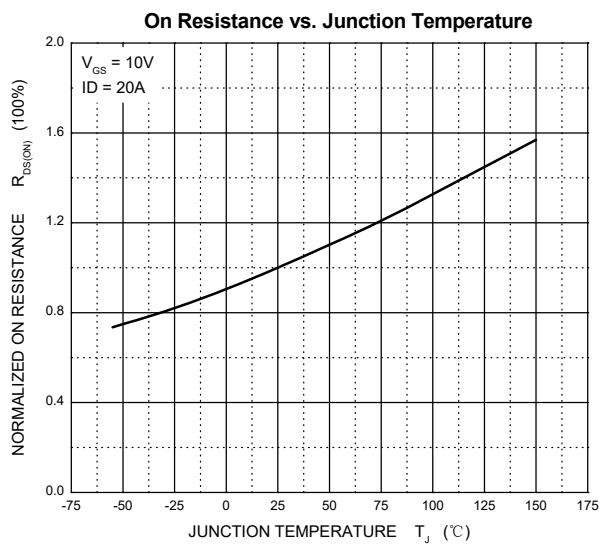
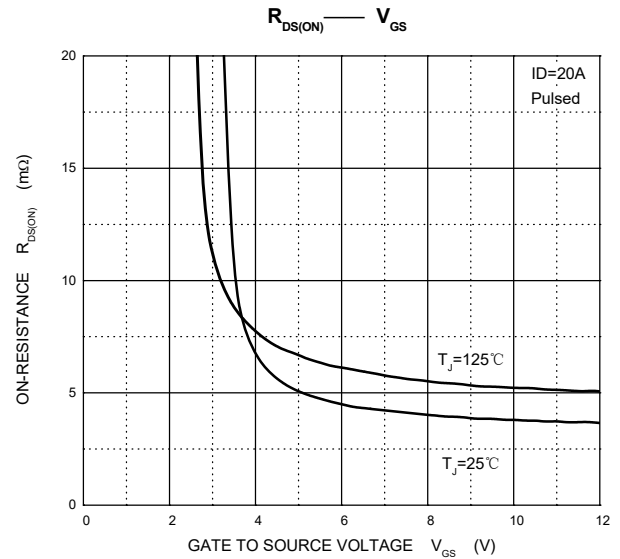
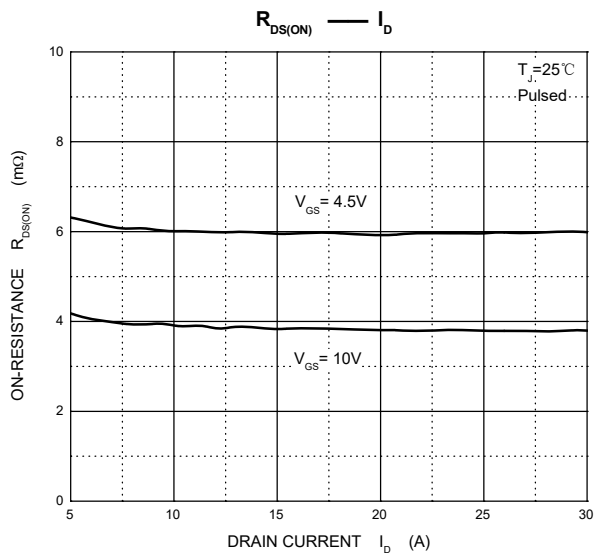
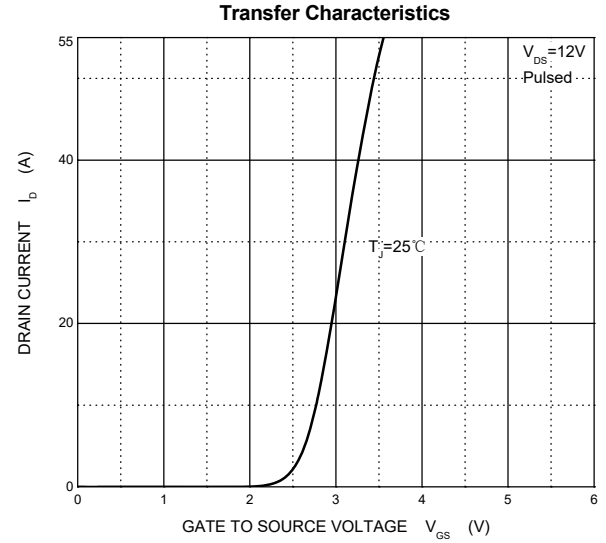
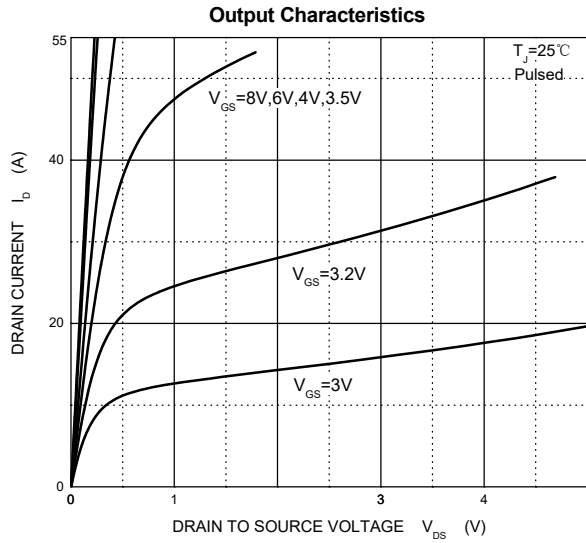
3. EAS condition: $V_{DD} = 20V, V_{GS} = 10V, L = 0.5mH, R_g = 25\Omega$ Starting $T_J = 25^{\circ}\text{C}$.

4. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.

5. Guaranteed by design, not subject to production.

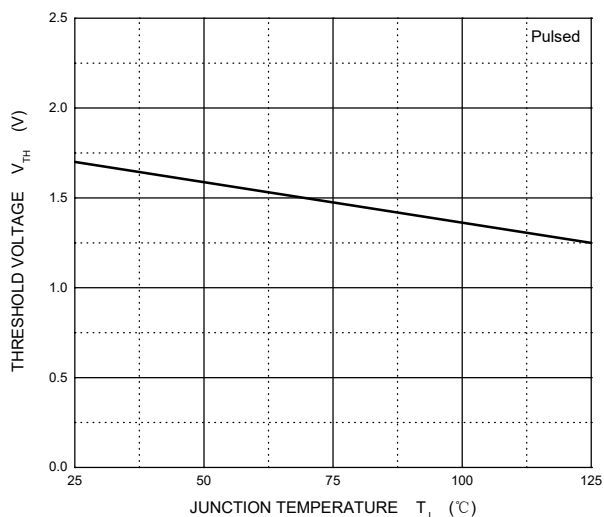
6. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_a = 25^{\circ}\text{C}$.

Typical Characteristics

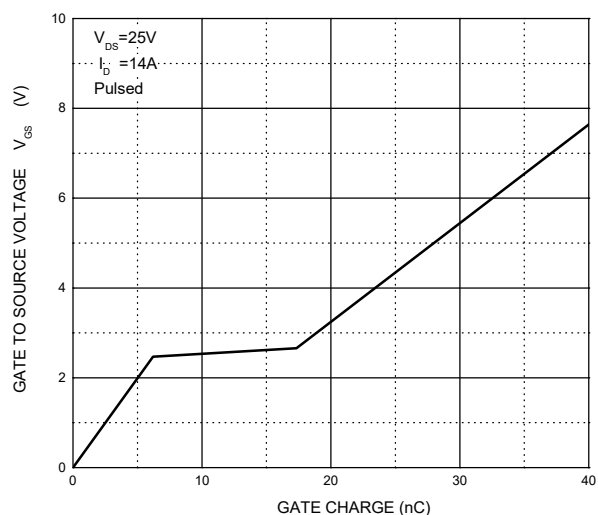


Typical Characteristics

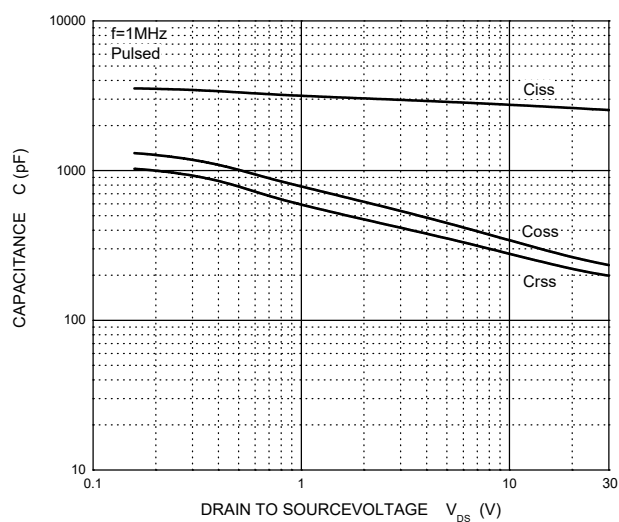
Threshold Voltage



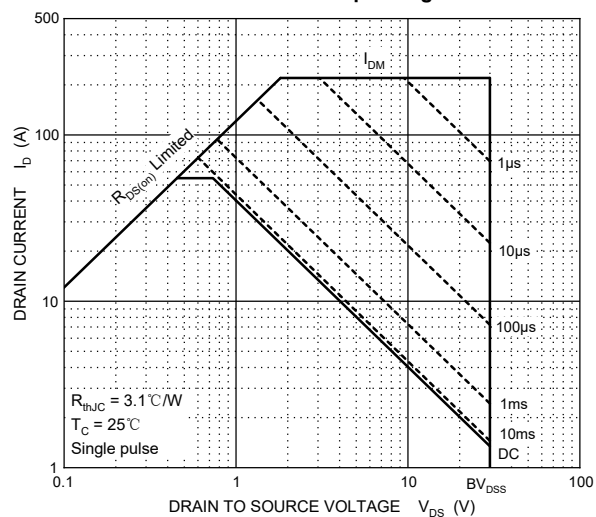
Gate Charge



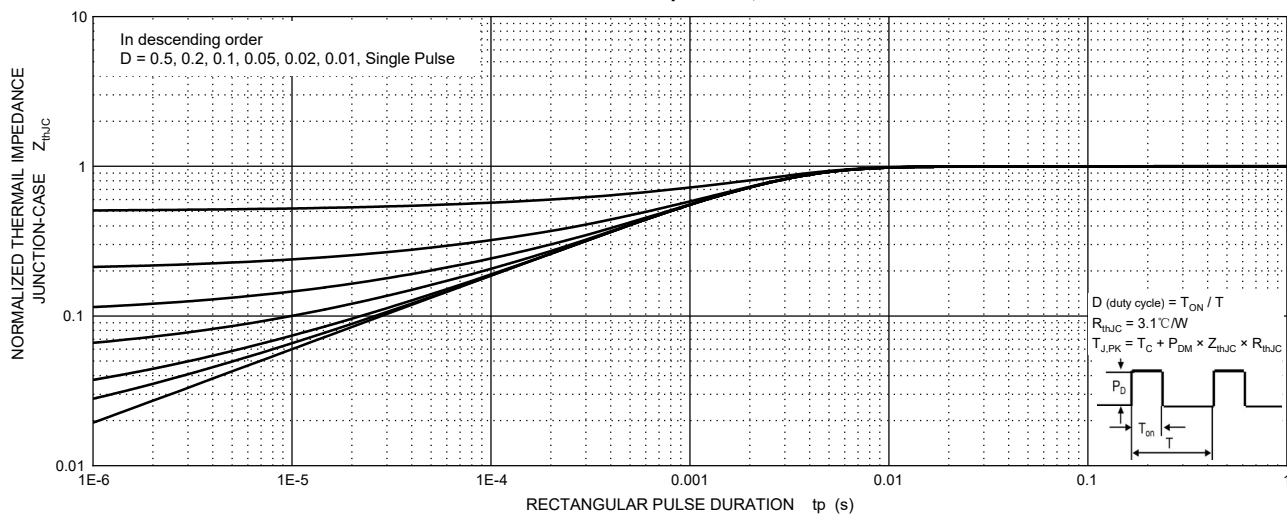
Capacitances



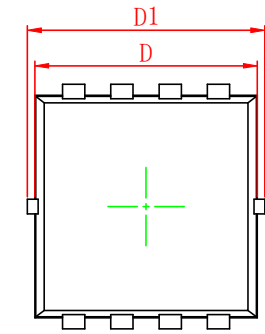
Maximum Safe Operating Area



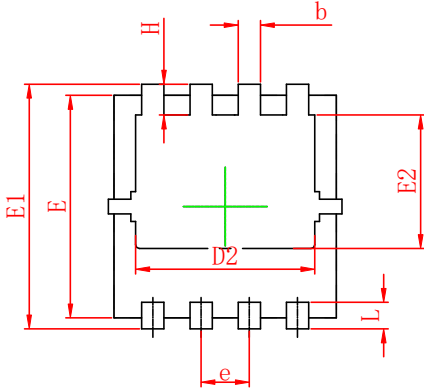
Transient Thermal Impedance, Junction-Case



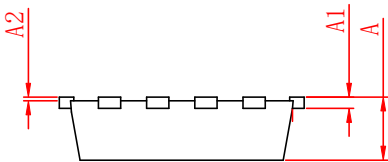
PDFNWB3.3×3.3-8L PACKAGE OUTLINE DIMENSIONS



Top View
[顶视图]



Bottom View
[背视图]

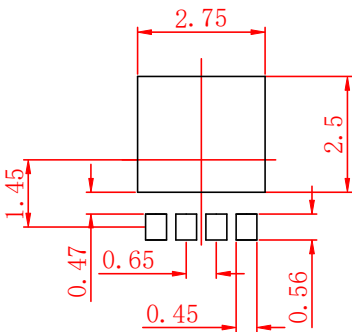


Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.65	0.90	0.026	0.035
A1	0.15 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.90	3.20	0.114	0.126
D1	3.00	3.40	0.118	0.134
D2	2.30	2.70	0.091	0.106
E	2.90	3.20	0.114	0.126
E1	3.00	3.40	0.118	0.134
E2	1.60	1.90	0.063	0.075
b	0.20	0.42	0.008	0.017
e	0.65 BSC.		0.026 BSC.	
L	0.20	0.50	0.008	0.020
H	0.32	0.52	0.012	0.020

- Notes:
- 1 Dimensions exclusive of mold gate burrs.
 - 2 Dimensions exclusive of mold flash and cutting burrs.

PDFNWB3.3×3.3-8L Suggested Pad Layout

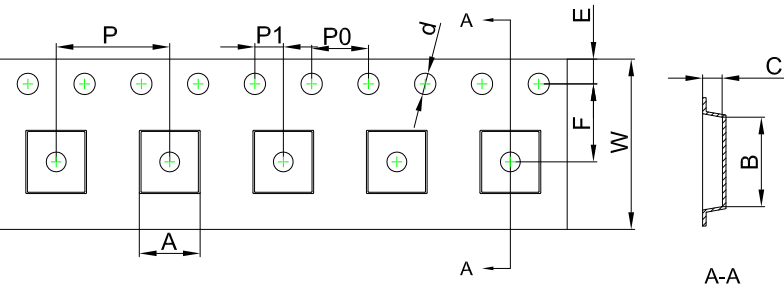


- Notes:
- 1 Controlling dimension: in millimeters.
 - 2 General tolerance:±0.05mm.
 - 2 The pad layout is for reference purpose only.

NOTICE

JSCJ reservesthe 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.

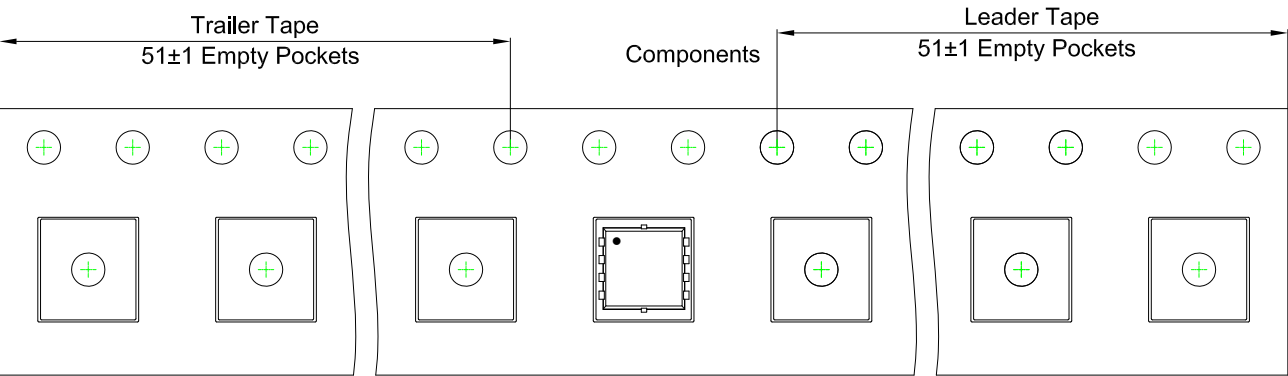
PDFNWB3.3×3.3-8L Embossed Carrier Tape



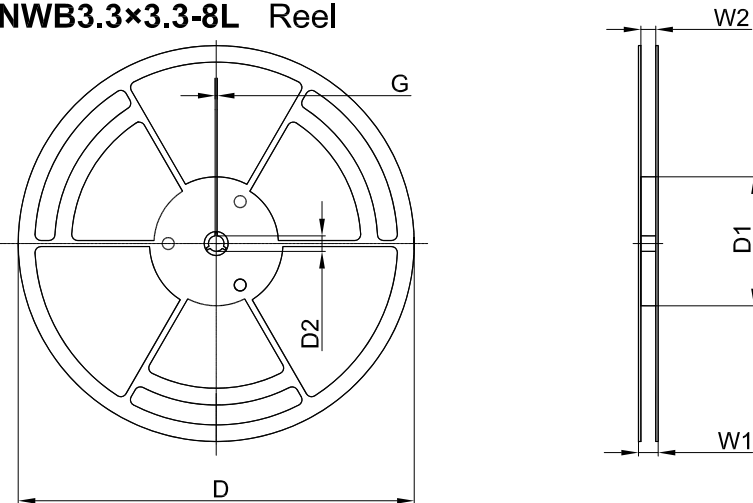
Packaging Description:
PDFNWB3.3×3.3-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed 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
PDFNWB3.3×3.3-8L	3.55	3.55	1.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

PDFNWB3.3×3.3-8L Tape Leader and Trailer



PDFNWB3.3×3.3-8L 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