

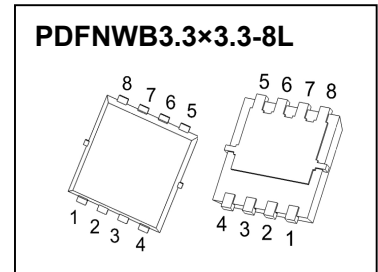


JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

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

CJAB50N03 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	4.7m Ω @10V	50A
	6.5m Ω @4.5V	



DESCRIPTION

The CJAB50N03 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

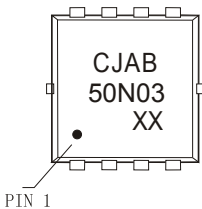
FEATURES

- Battery switch
- 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
- Special process technology for high ESD capability

APPLICATIONS

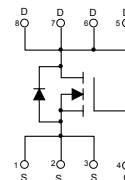
- SMPS and general purpose applications
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

MARKING



CJAB50N03 = 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	V
Continuous Drain Current	$I_D^{(1)}$	50	A
Pulsed Drain Current	$I_{DM}^{(2)}$	200	A
Single Pulsed Avalanche Energy	$E_{AS}^{(3)}$	116	mJ
Maximum Power Dissipation	$P_D^{(1)}$	59	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}^{(6)}$	83.3	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}^{(1)}$	2.11	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	$^\circ\text{C}$

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 =250μA		30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =24V,	T _J =25 ℃			1.0	μA
		V _{GS} =0V	T _J =125 ℃			100	
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	1.5	2.5	V
Static drain-source on-sate resistance	R _{DS(on)}	V _{GS} =10V, I _D =5A			4.7	6.5	mΩ
		V _{GS} =4.5V, I _D =5A			6.5	8.5	mΩ
Dynamic characteristics ④ ⑤							
Input capacitance	C _{iss}	V _{DS} =15V,V _{GS} =0V, f =1MHz			1650	3300	pF
Output capacitance	C _{oss}				230	460	
Reverse transfer capacitance	C _{rss}				210	420	
Gate resistance	R _g	f =1MHz			3.4		Ω
Switching characteristics ④ ⑤							
Total gate charge	Q _g	V _{GS} =10V, V _{DS} =20V, I _D =30A			34	68	nC
Gate-source charge	Q _{gs}				3.4	6.8	
Gate-drain charge	Q _{gd}				9.6	19	
Turn-on delay time	t _{d(on)}	V _{DD} =30V,I _D =1A, R _L =15Ω,V _{GS} =10V, R _G =6Ω			5.0		ns
Turn-on rise time	t _r				24		
Turn-off delay time	t _{d(off)}				20		
Turn-off fall time	t _f				7.5		
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					50	A
Pulsed drain-source diode forward current	I _{SM} ②					200	A

Notes:

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

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

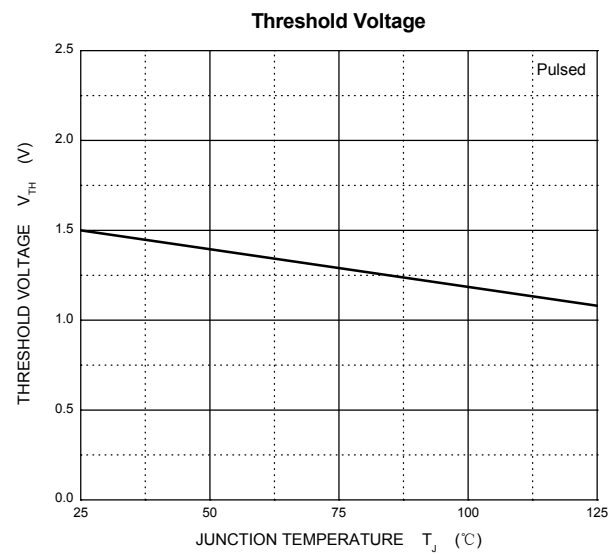
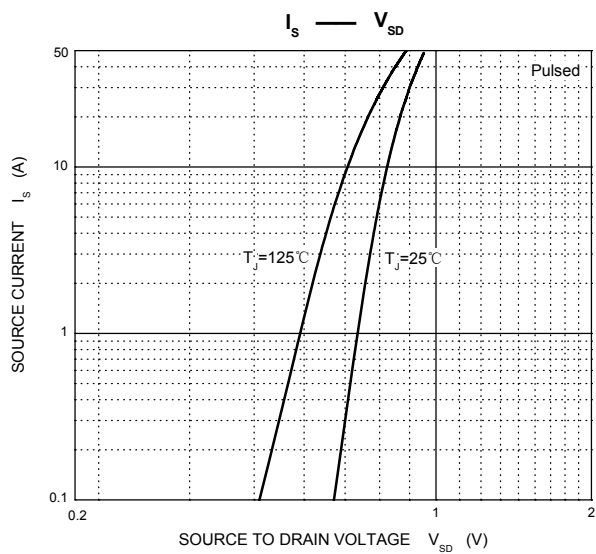
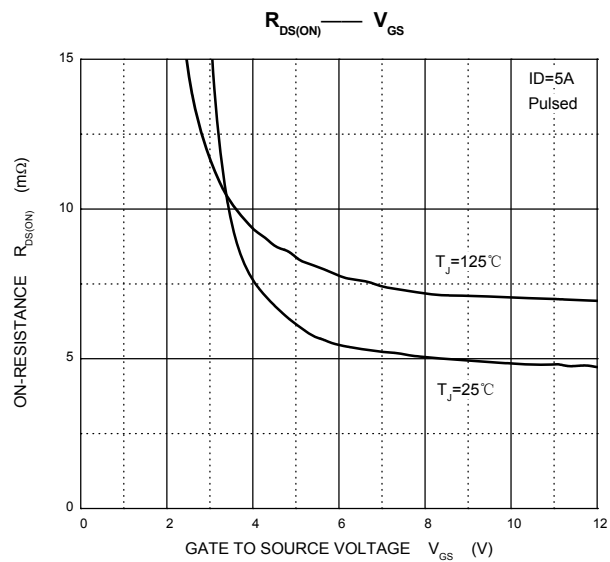
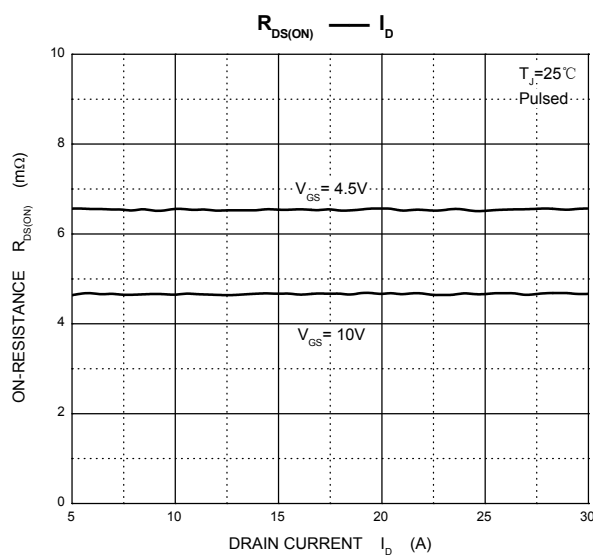
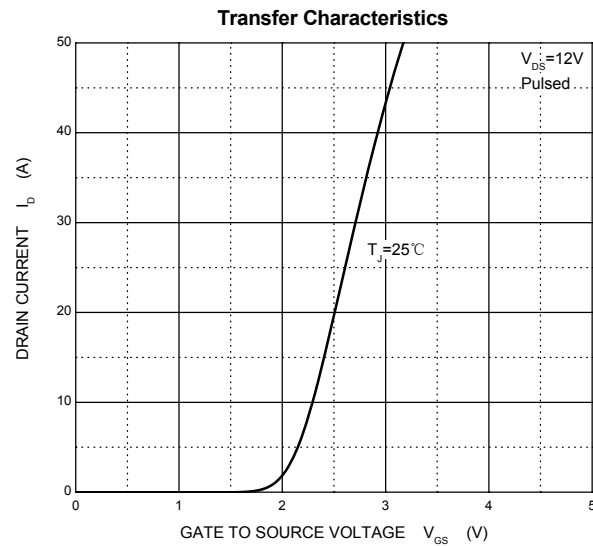
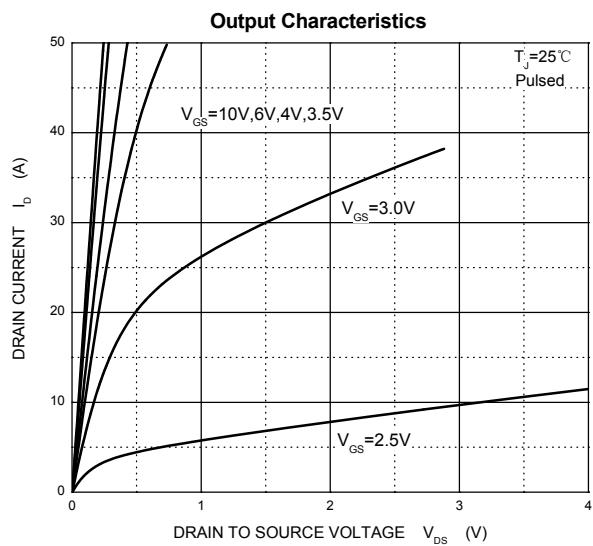
3. EAS condition: $V_{DD} = 15V, V_{GS} = 10V, L = 0.5\text{mH}, R_g = 25\Omega$ Starting $T_J = 25^{\circ}\text{C}$.

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

5. Guaranteed by design, not subject to production.

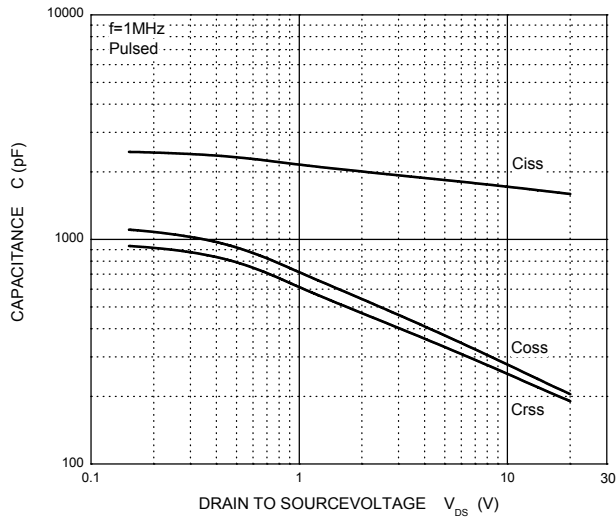
6. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_a = 25^{\circ}\text{C}$.

Typical Characteristics

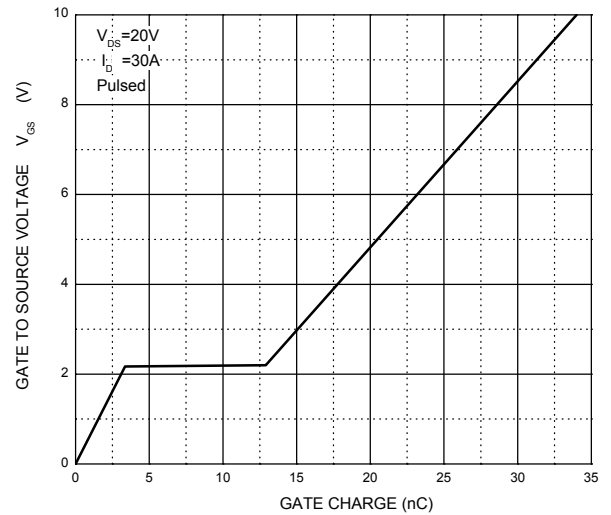


Typical Characteristics

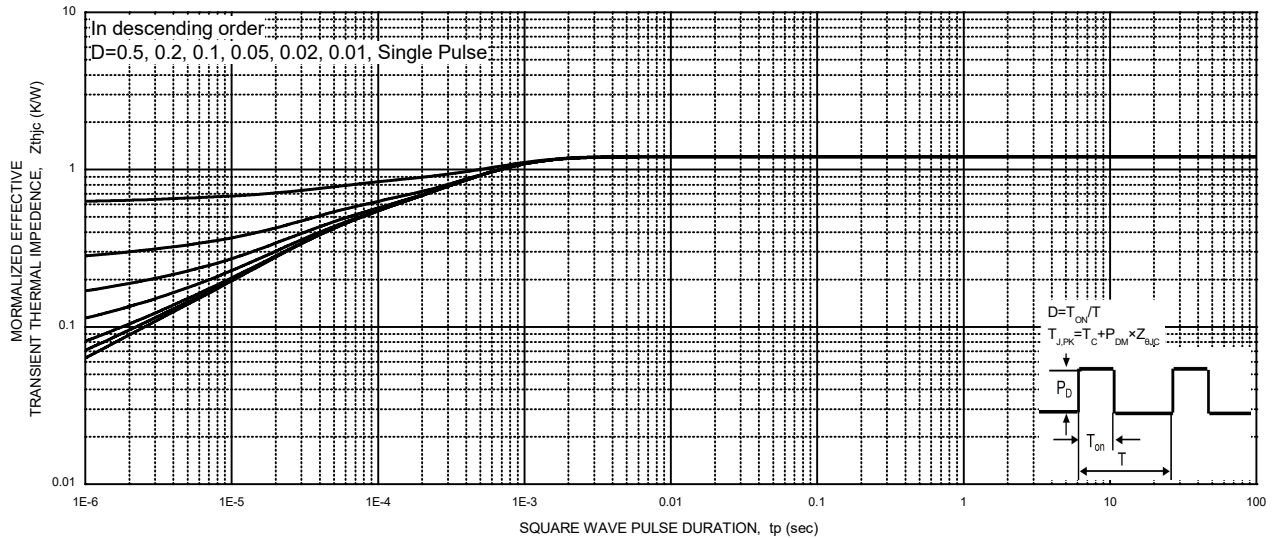
Capacitances



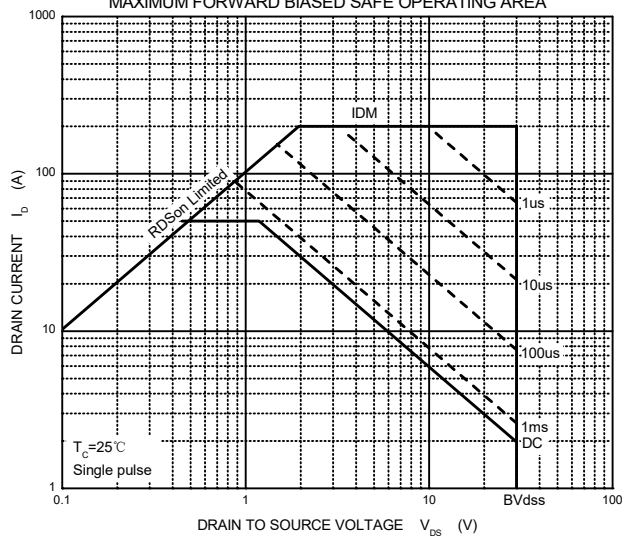
Gate Charge



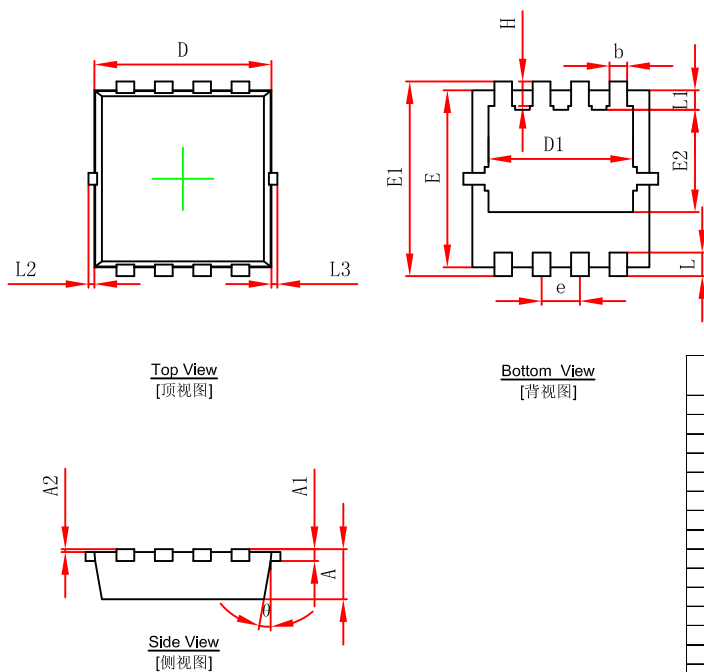
NORMALIZED TYPICAL TRANSIENT THERMAL IMPEDANCE



MAXIMUM FORWARD BIASED SAFE OPERATING AREA

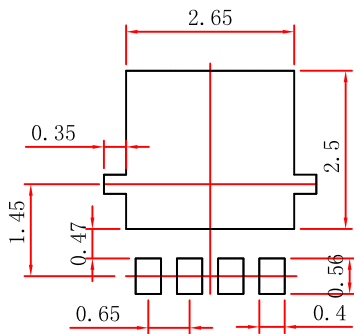


PDFNWB3.3x3.3-8L Package Outline Dimensions



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

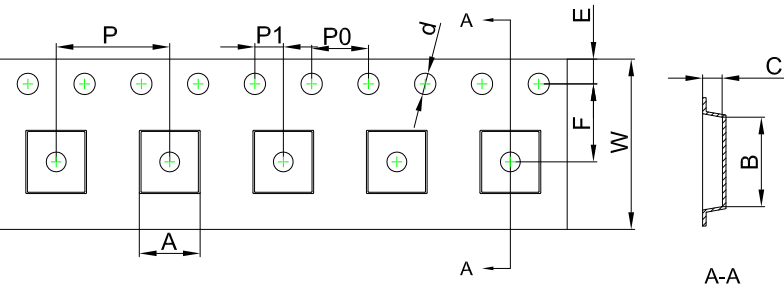


Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

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.

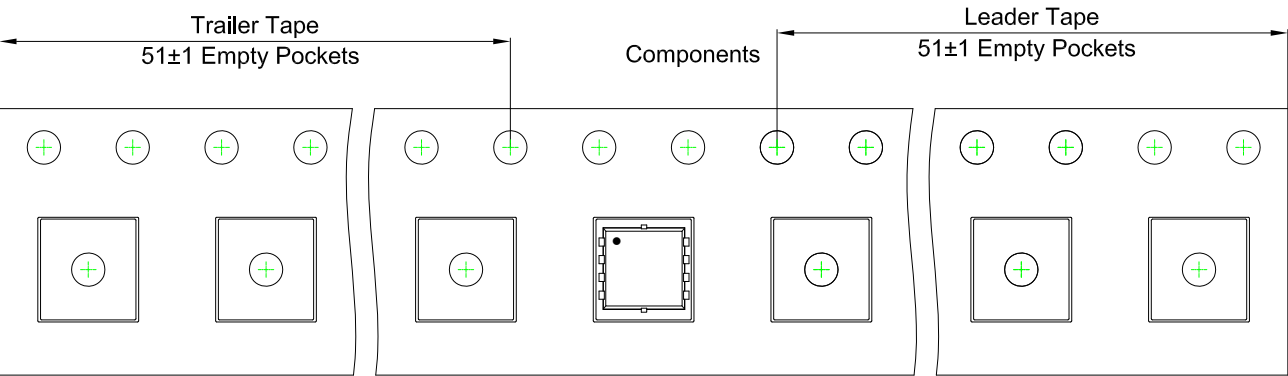
PDFNWB3.3×3.3-8L Embossed Carrier Tape



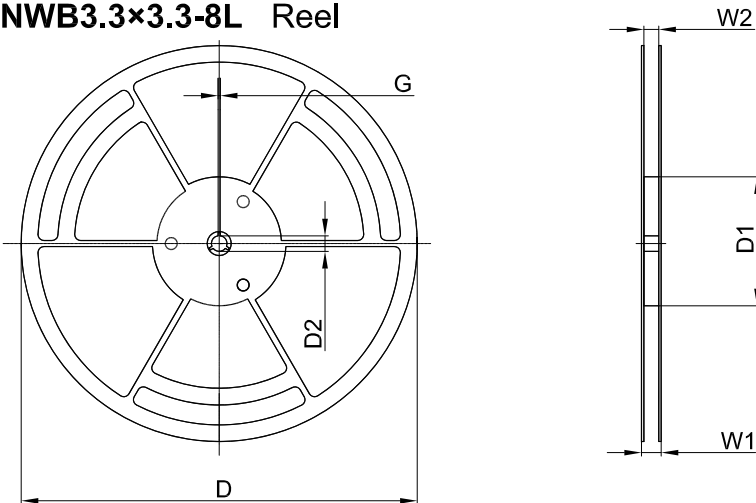
Packaging Description:
PDFNWB3.3×3.3-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed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