



**Product Summary**

V <sub>(BR)DSS</sub>	R <sub>DS(on)</sub> TYP	I <sub>D</sub> @T <sub>C</sub> =25°C
-30V	12mΩ@-10V	-30A
	17mΩ@-4.5V	
30V	10mΩ@10V	31A
	17mΩ@4.5V	

**Feature**

- Low drain-source ON-resistance
- High forward transfer admittance
- Low leakage current

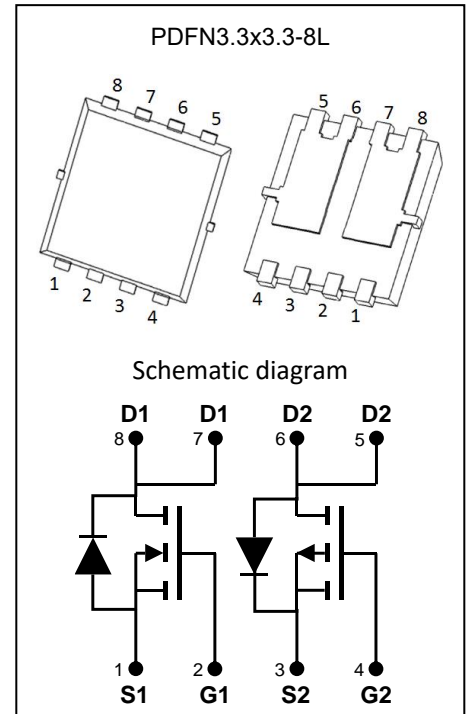
**Application**

- Low voltage applications

**MARKING:**



30NP16 = Device Code  
XX = Date Code  
Solid dot = Green Device



**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit	Test Condition
<b>P-MOSFET</b>				
Drain-Source Voltage	V <sub>DS</sub>	-30	V	
Gate-Source Voltage	V <sub>GS</sub>	±20	V	
Continuous Drain Current <sup>(1)</sup>	I <sub>D</sub>	-14	A	T <sub>A</sub> =25°C
		-30		T <sub>C</sub> =25°C
Pulsed Drain Current	I <sub>DM</sub>	-120	A	
<b>N-MOSFET</b>				
Drain-Source Voltage	V <sub>DS</sub>	30	V	
Gate-Source Voltage	V <sub>GS</sub>	±20	V	
Continuous Drain Current	I <sub>D</sub>	14	A	T <sub>A</sub> =25°C
		31		T <sub>C</sub> =25°C
Pulsed Drain Current <sup>(1)</sup>	I <sub>DM</sub>	120	A	
<b>Temperature and Thermal Resistance</b>				
Thermal Resistance <sup>(2)</sup>	R <sub>θJA</sub>	44.6	°C/W	from Junction to Ambient
	R <sub>θJC</sub>	9.2	°C/W	from Junction to Case
Power Dissipation	P <sub>D</sub>	2.8	W	T <sub>A</sub> =25°C
		13.6		T <sub>C</sub> =25°C
Junction Temperature	T <sub>J</sub>	150	°C	
Storage Temperature	T <sub>STG</sub>	-55~ +150	°C	

## P-channel MOSFET ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-30			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = -24V, V <sub>GS</sub> = 0V			-1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±100	nA
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-1.0	-1.4	-3.0	V
Drain-source on-resistance <sup>(3)</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -5A		12	16	mΩ
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -5A		17	26	
Forward transconductance	g <sub>FS</sub>	V <sub>DS</sub> = -10V, I <sub>D</sub> = -10A	5	16		S
Diode forward voltage <sup>(3)</sup>	V <sub>DS</sub>	I <sub>S</sub> = -5A, V <sub>GS</sub> = 0V			-1.2	V
<b>Dynamic characteristics<sup>(4)</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, F = 1.0MHz		1350		pF
Output Capacitance	C <sub>oss</sub>			215		
Reverse Transfer Capacitance	C <sub>rss</sub>			185		
Total gate charge	Q <sub>g</sub>	V <sub>DS</sub> = -15V, I <sub>D</sub> = -9.1A, V <sub>GS</sub> = -4.5V		15		nC
Gate-source charge	Q <sub>gs</sub>			4		
Gate-drain charge	Q <sub>gd</sub>			7.5		
<b>Switching Characteristics<sup>(4)</sup></b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> = -15V, I <sub>D</sub> = -1A V <sub>GS</sub> = -10V, R <sub>GEN</sub> = 1Ω R <sub>L</sub> = 15Ω			15	nS
Turn-on rise time	t <sub>r</sub>				15	
Turn-off delay time	t <sub>d(off)</sub>				70	
Turn-off fall time	t <sub>f</sub>				25	

## N-channel MOSFET ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless otherwise noted)

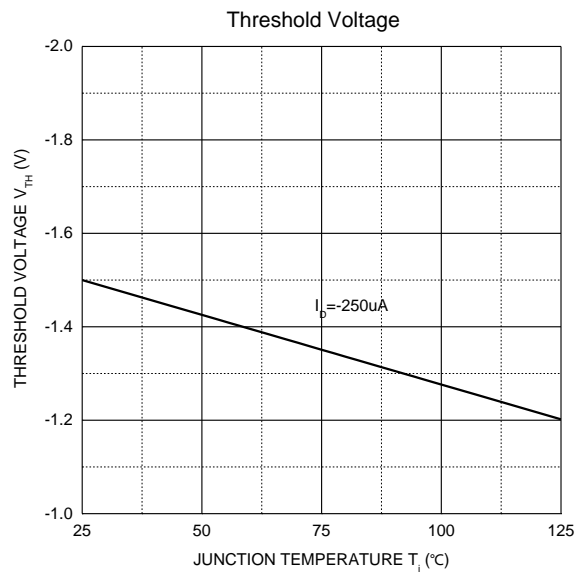
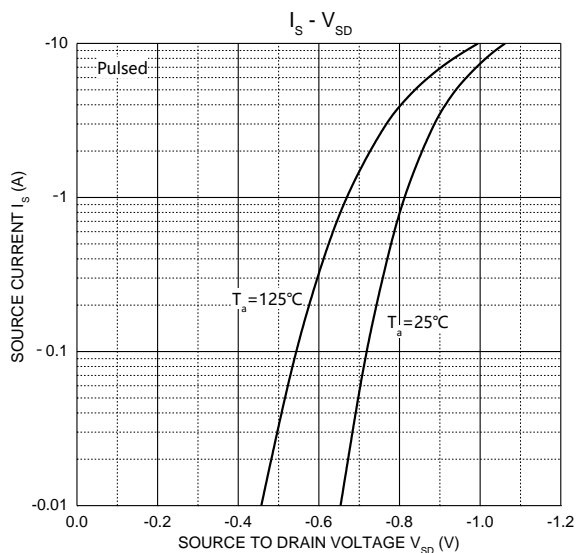
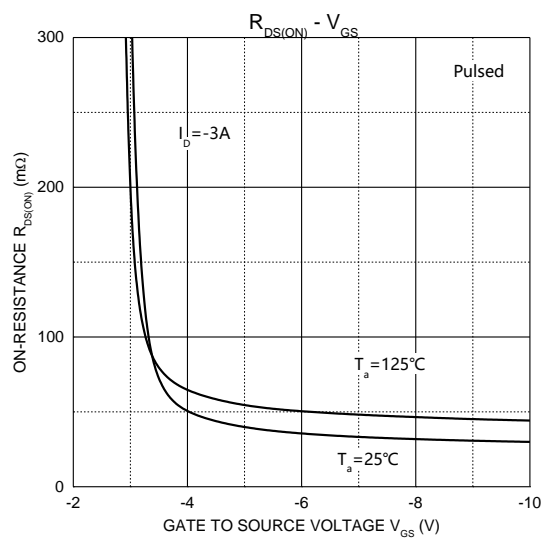
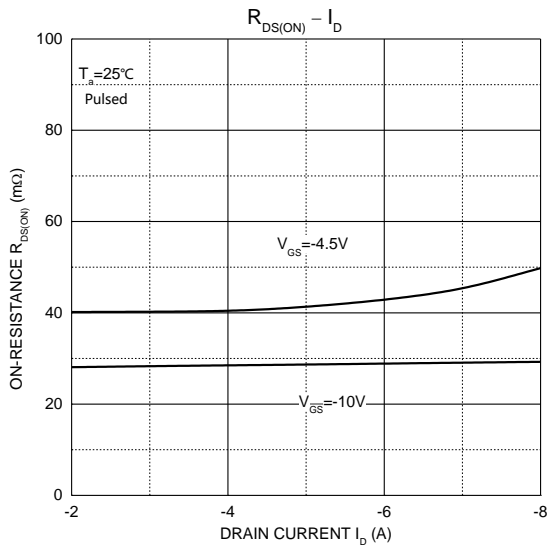
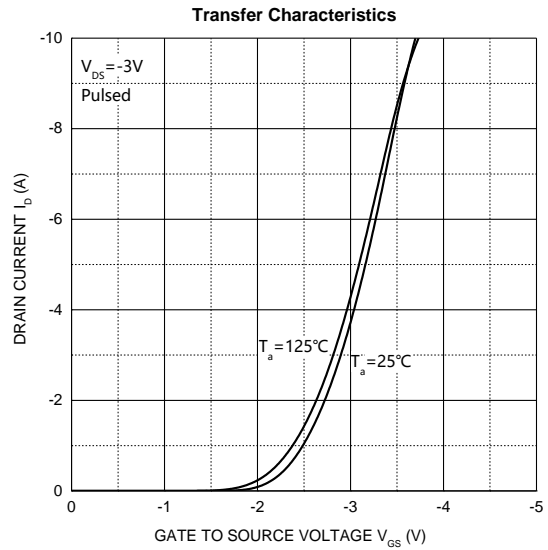
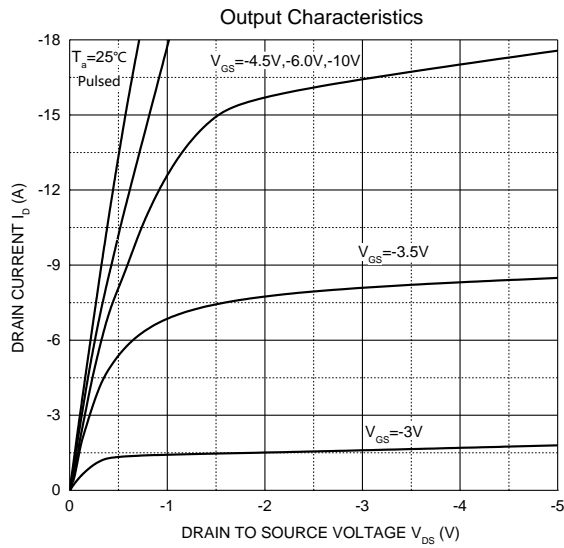
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 24V, V_{GS} = 0V$			1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 100$	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.5	2.5	V
Drain-source on-resistance <sup>(3)</sup>	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5A$		10	14	m $\Omega$
		$V_{GS} = 4.5V, I_D = 5A$		17	26	
Forward transconductance	$g_{FS}$	$V_{DS} = 5V, I_D = 10A$	10	43		S
Diode Forward voltage <sup>(3)</sup>	$V_{DS}$	$I_S = 5A, V_{GS} = 0V$			1.2	V
<b>Dynamic characteristics<sup>(4)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0V, F = 1.0MHz$		968		pF
Output Capacitance	$C_{oss}$			146		
Reverse Transfer Capacitance	$C_{rss}$			136		
Total gate charge	$Q_g$	$V_{DS} = 15V, I_D = 10A, V_{GS} = 10V$		13		nC
Gate-source charge	$Q_{gs}$			3		
Gate-drain charge	$Q_{gd}$			4.5		
<b>Switching Characteristics<sup>(4)</sup></b>						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 15V, R_L = 1.8\Omega$ $V_{GS} = 10V, R_{GEN} = 1.8\Omega$			10	ns
Turn-on rise time	$t_r$				8	
Turn-off delay time	$t_{d(off)}$				30	
Turn-off fall time	$t_f$				5	

### Notes:

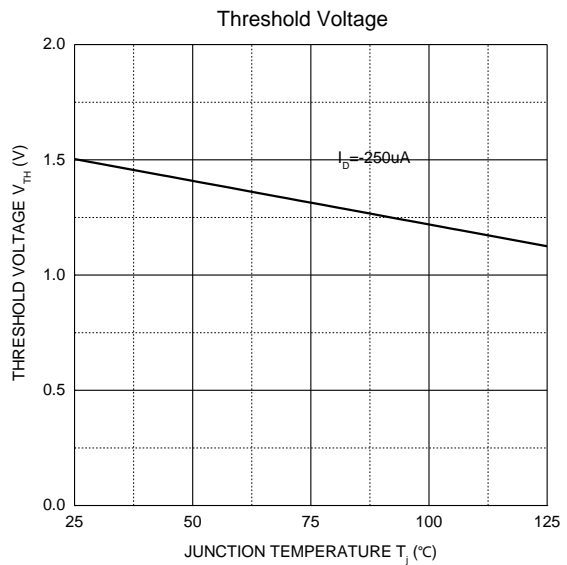
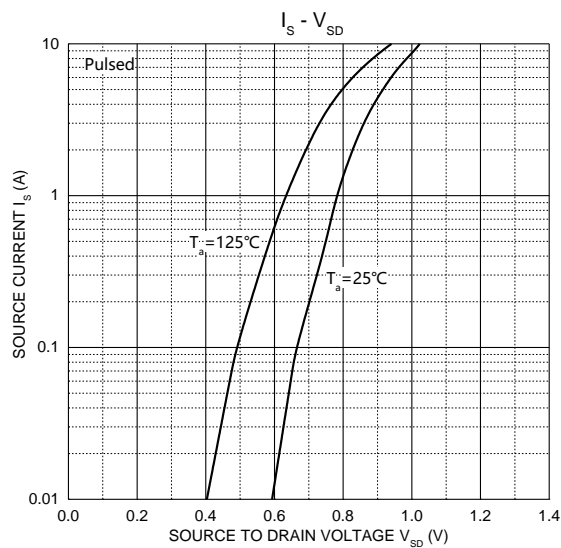
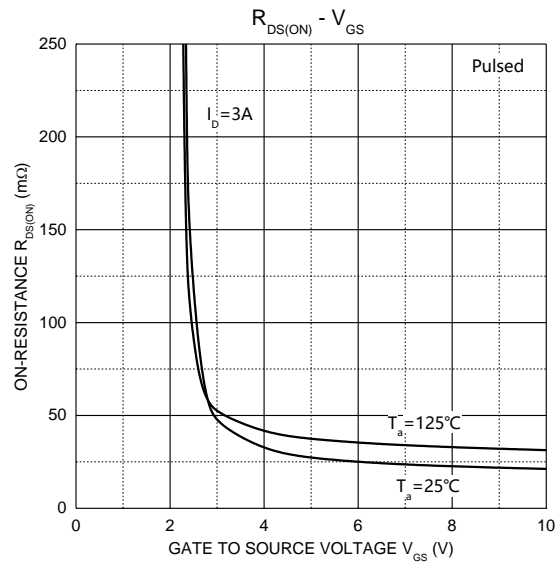
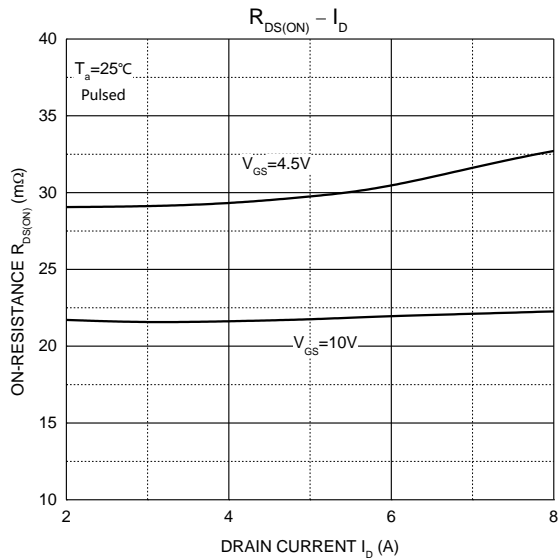
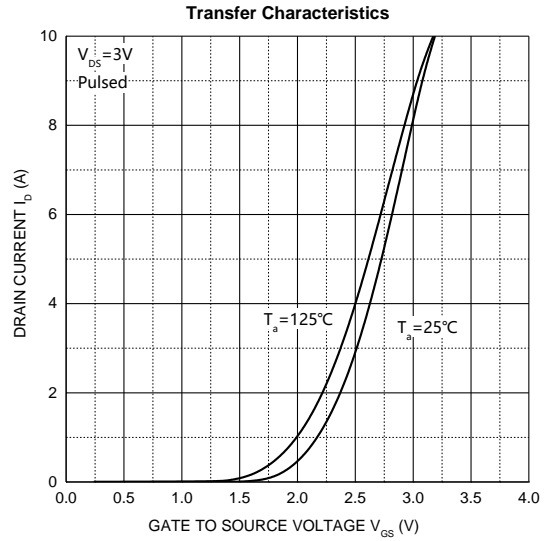
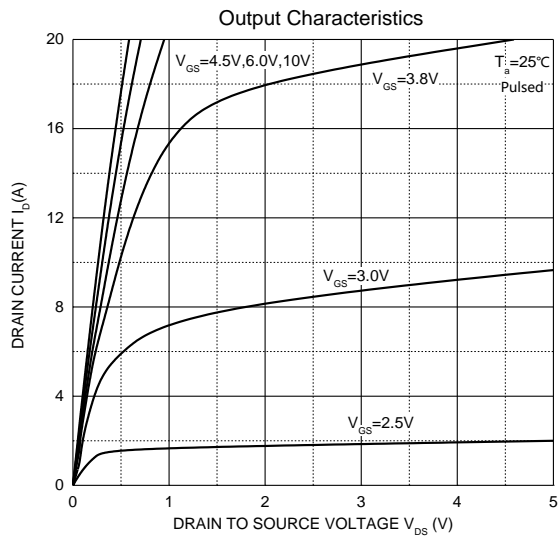
1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board,  $t < 5$  sec.
3. Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
4. Guaranteed by design, not subject to production testing.

**Typical Electrical and Thermal Characteristics**

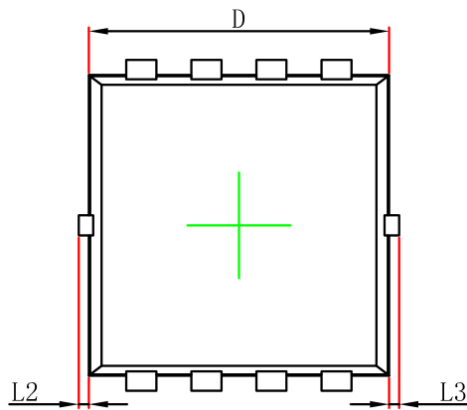
P-Channel MOS



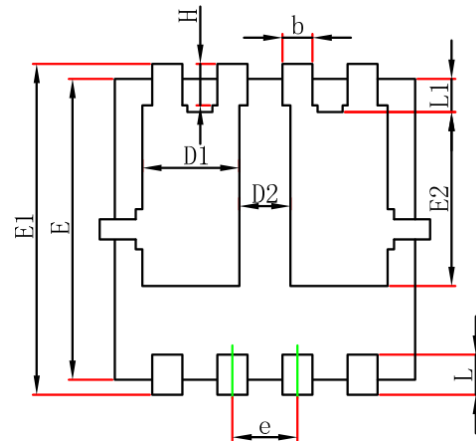
N-Channel MOS



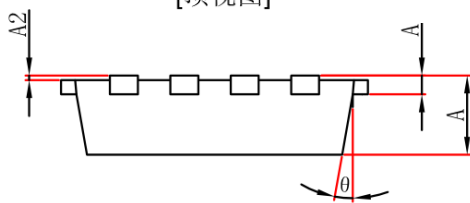
## PDFN3.3X3.3-8L Package Information



Top View  
[顶视图]



Bottom View  
[背视图]

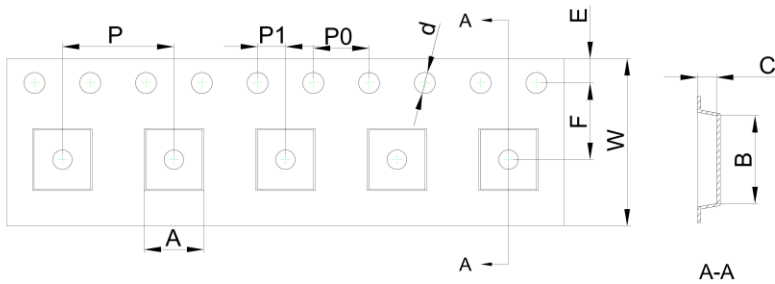


Side View  
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.650	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	0.935	1.135	0.037	0.045
D2	0.280	0.480	0.011	0.019
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
$\theta$	9°	13°	9°	13°

## PDFN3.3X3.3-8L Tape and Reel

### PDFNWB3.3×3.3-8L Embossed Carrier Tape



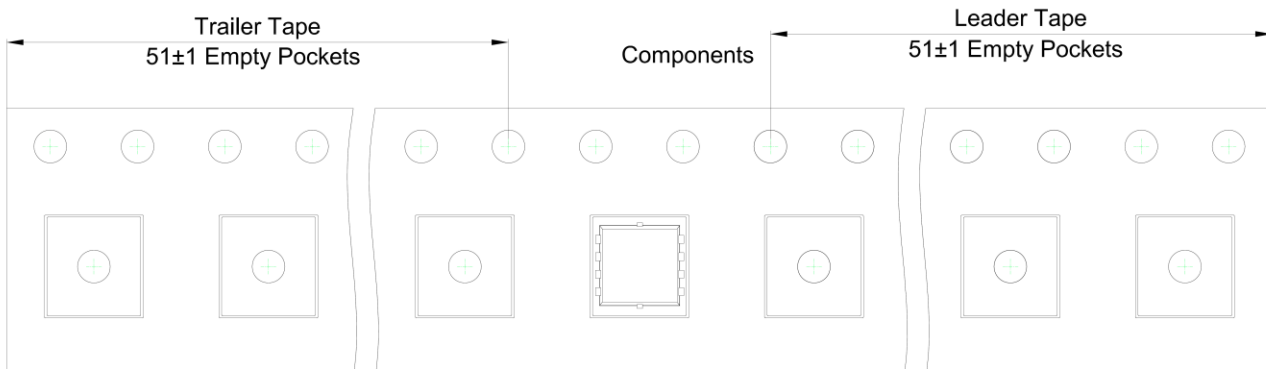
**Packaging Description:**

**PDFNWB3.3x3.3-8L** 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).

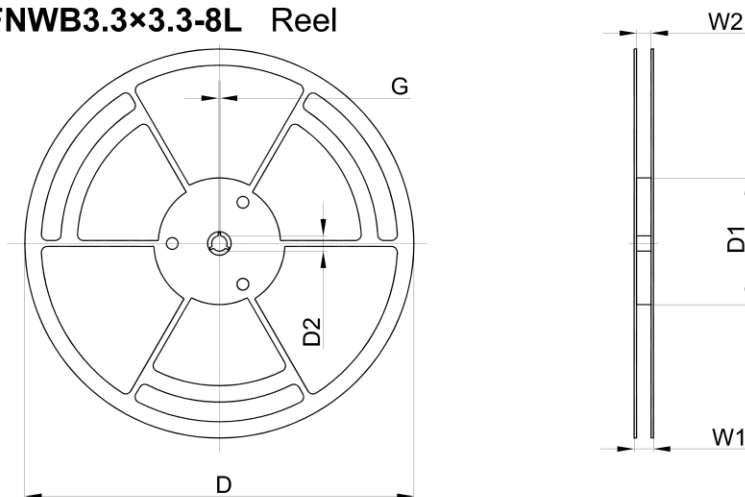
Dimensions are in millimeter

Pkg type	A	B	C	d	E	F	P0	P	P1	W
PDFNWB3.3x3.3-8L	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

单击下面可查看定价，库存，交付和生命周期等信息

[>>GP\(格瑞宝\)](#)