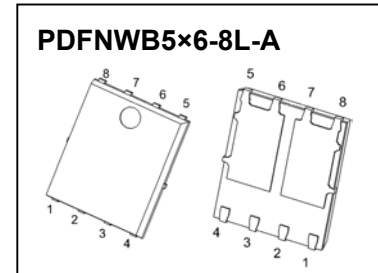


PDFNWB5×6-8L-A Plastic-Encapsulate MOSFETS

CJAC0410 N Channel+P Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
100V	185mΩ@10V	4A
	195mΩ@4.5V	
-100V	270mΩ@-10V	-4A
	330mΩ@-4.5V	



DESCRIPTION

The CJAC0410 provides excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications

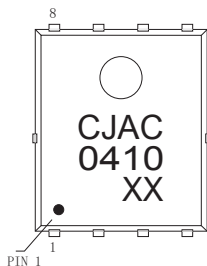
FEATURES

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

APPLICATIONS

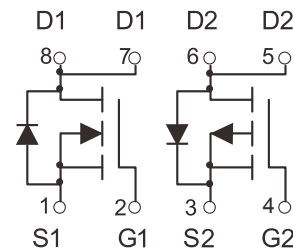
- DC/DC converter
- High-frequency switching and synchronous rectification

MARKING



CJAC0410= Part No.
Solid dot=Pin1 indicator
XX=Code

EQUIVALENT CIRCUIT



Maximum ratings ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
N-MOSFET			
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$I_D^{(1)}$	4.0	A
Pulsed Drain Current	$I_{DM}^{(2)}$	16	A
Single Pulsed Avalanche Energy	$E_{AS}^{(3)}$	39	mJ
P-MOSFET			
Drain-Source Voltage	V_{DS}	-100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$I_D^{(1)}$	-4.0	A
Pulsed Drain Current	$I_{DM}^{(2)}$	-16	A
Single Pulsed Avalanche Energy	$E_{AS}^{(4)}$	57	mJ
Temperature and Thermal Resistance			
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	89.2	$^\circ\text{C/W}$
Power Dissipation	$P_D^{(2)}$	6.0	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ +150	$^\circ\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	$^\circ\text{C}$

MOSFET ELECTRICAL CHARACTERISTICS

N-Channel MOSFET ELECTRICAL CHARACTERISTICS, $T_a=25\text{ }^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR) DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
On characteristics ^⑤						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.7	2.5	V
Static drain-source on-sate resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 2A$		160	185	m Ω
		$V_{GS} = 4.5V, I_D = 1A$		168	195	m Ω
Forward transconductance	g_{FS}	$V_{DS} = 10V, I_D = 4.5A$		6		S
Dynamic characteristics ^{⑤ ⑥}						
Input capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0V,$ $f = 1MHz$		894	1190	pF
Output capacitance	C_{oss}			16	55	
Reverse transfer capacitance	C_{rss}			12	30	
Gate resistance	R_g	$f = 1MHz$		5		Ω
Switching characteristics ^{⑤ ⑥}						
Total gate charge	Q_g	$V_{GS} = 10V, V_{DS} = 50V,$ $I_D = 2A$		13.4	21	nC
Gate-source charge	Q_{gs}			2.9	6.0	
Gate-drain charge	Q_{gd}			1.7	4.0	
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 30V, I_D = 1A$ $V_{GS} = 10V, R_G = 3.3\Omega,$		1.6	3	ns
Turn-on rise time	t_r			6.6	13	
Turn-off delay time	$t_{d(off)}$			11.5	22	
Turn-off fall time	t_f			3.6	7	
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	V_{SD} ^⑤	$V_{GS} = 0V, I_S = 4A$			1.2	V
Continuous drain-source diode forward current	I_S ^①				4	A
Pulsed drain-source diode forward current	I_{SM} ^②				16	A

MOSFET ELECTRICAL CHARACTERISTICS

P-Channel MOSFET ELECTRICAL CHARACTERISTICS, $T_a=25^\circ\text{C}$ unless otherwise specified

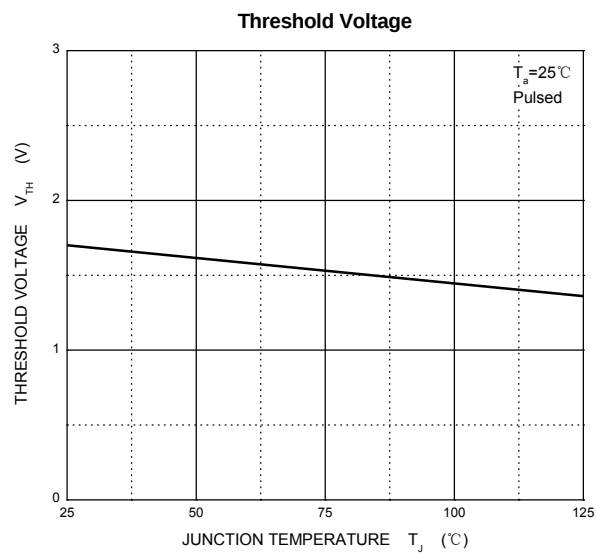
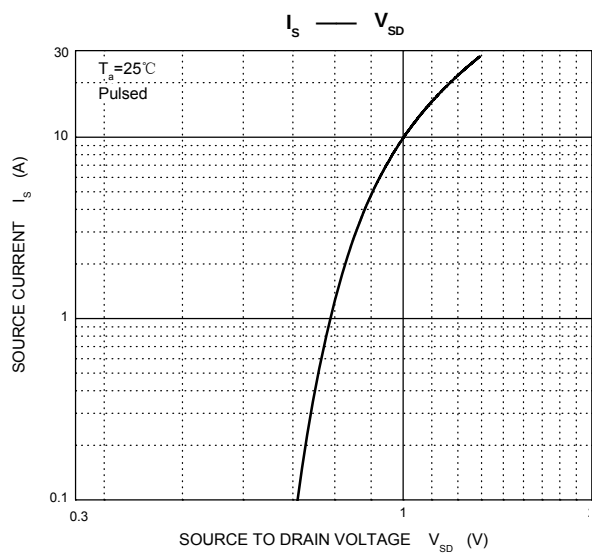
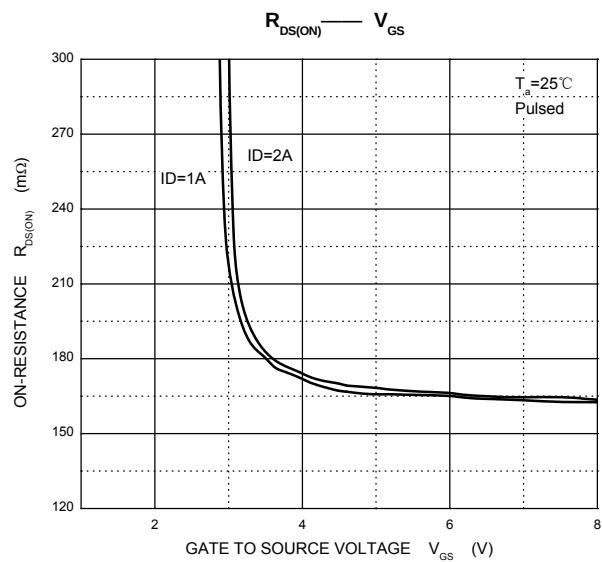
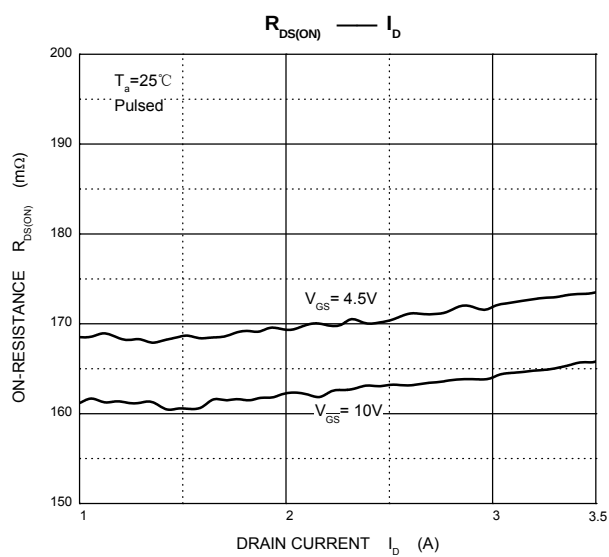
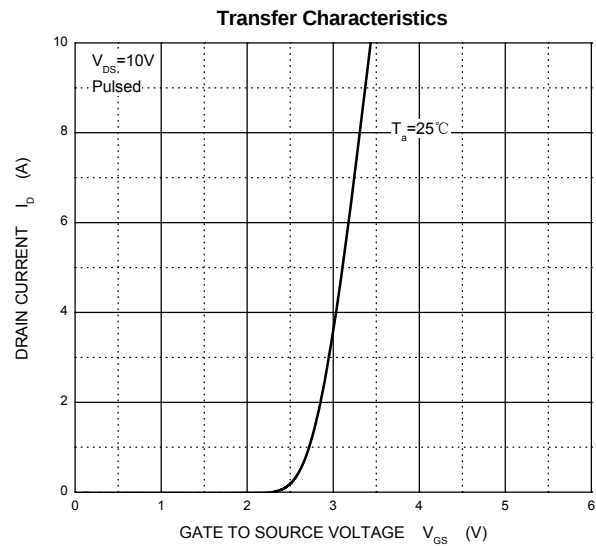
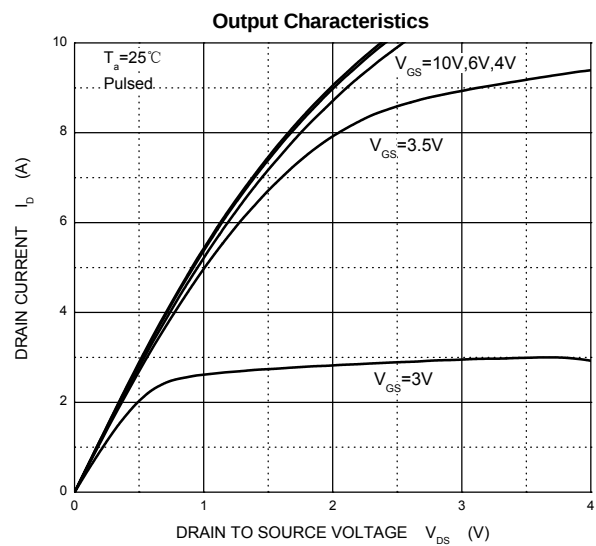
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =-250μA	-100			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-100V, V _{GS} =0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
On characteristics ⑤						
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 =-3A		237	270	mΩ
		V _{GS} =-4.5V, I _D =-1.5A		252	330	mΩ
Forward transconductance	g _{FS}	V _{DS} =10V, I _D =5A		7.4		S
Dynamic characteristics ⑤ ⑥						
Input capacitance	C _{iss}	V _{DS} =-50V,V _{GS} =0V, f =1MHz		783	1560	pF
Output capacitance	C _{oss}			33	66	
Reverse transfer capacitance	C _{rss}			22	45	
Gate resistance	R _g	f =1MHz		17		Ω
Switching characteristics ⑤ ⑥						
Total gate charge	Q _g	V _{GS} =-10V, V _{DS} =-50V, I _D =-1A		10.9	22	nC
Gate-source charge	Q _{gs}			1.5	3	
Gate-drain charge	Q _{gd}			2.6	5.2	
Turn-on delay time	t _{d(on)}	V _{DD} =-50V,ID=-1A V _{GS} =-10V,R _G =6Ω ,		11.6	23	ns
Turn-on rise time	t _r			4.8	10	
Turn-off delay time	t _{d(off)}			35.8	72	
Turn-off fall time	t _f			18.8	38	
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	V _{SD} ⑤	V _{GS} =0V, I _S =-4A			-1.2	V
Continuous drain-source diode forward current	I _S ①				-4	A
Pulsed drain-source diode forward current	I _{SM} ②				-16	A

Notes:

- $T_C=25^\circ\text{C}$ Limited only by maximum temperature allowed.
- $P_W \leq 10\mu s$, Duty cycle $\leq 1\%$.
- EAS condition: $V_{DD}=50V, V_{GS}=10V, L=0.1mH, R_g=25\Omega$ Starting $T_J = 25^\circ\text{C}$.
- EAS condition: $V_{DD}=-50V, V_{GS}=-10V, L=0.5mH, R_g=25\Omega$ Starting $T_J = 25^\circ\text{C}$.
- Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production.

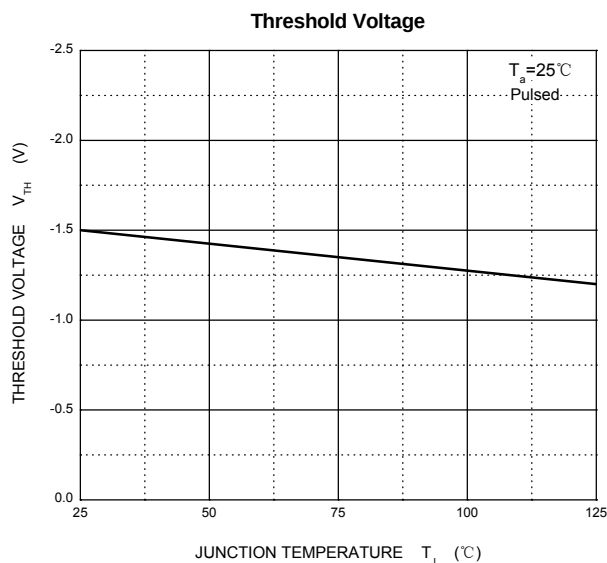
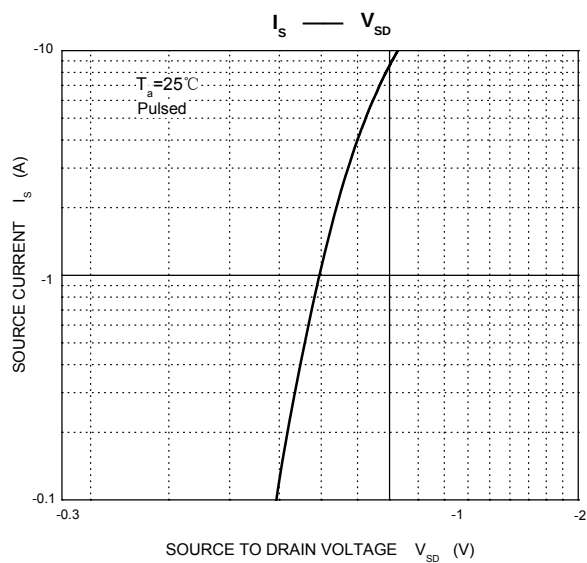
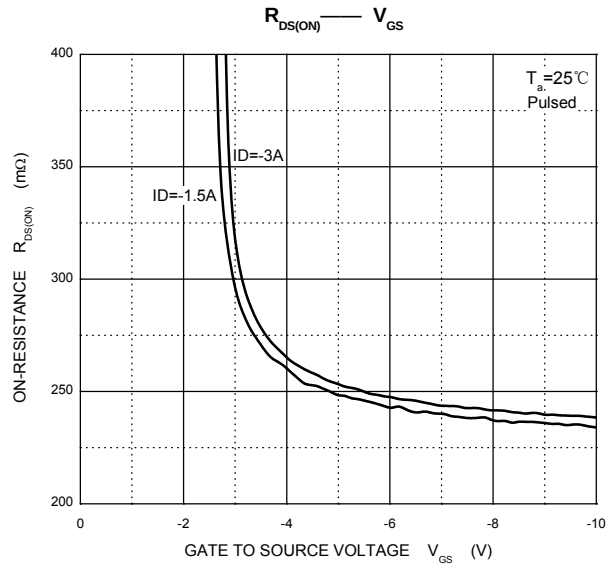
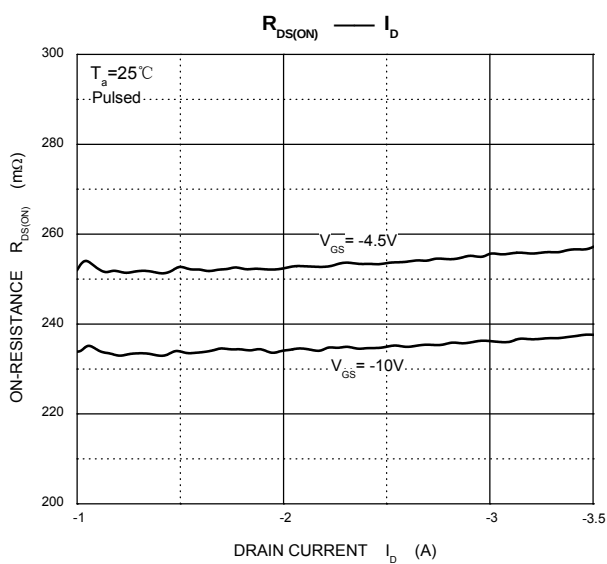
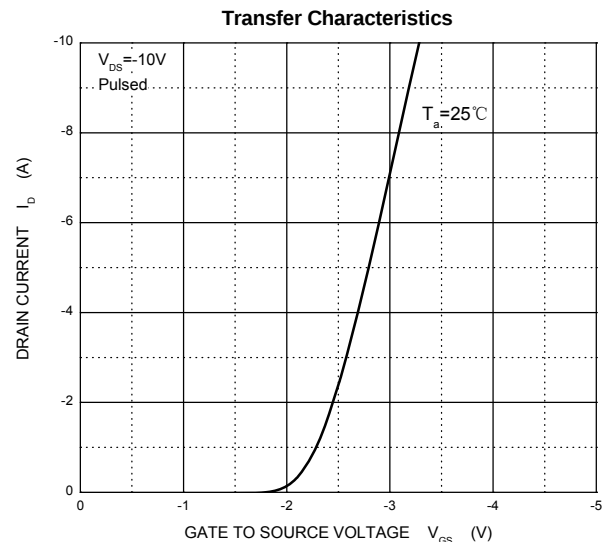
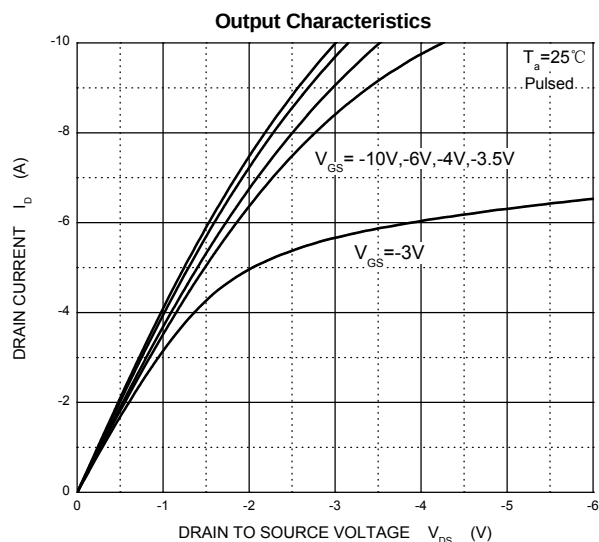
Typical Characteristics

N-Channel MOS

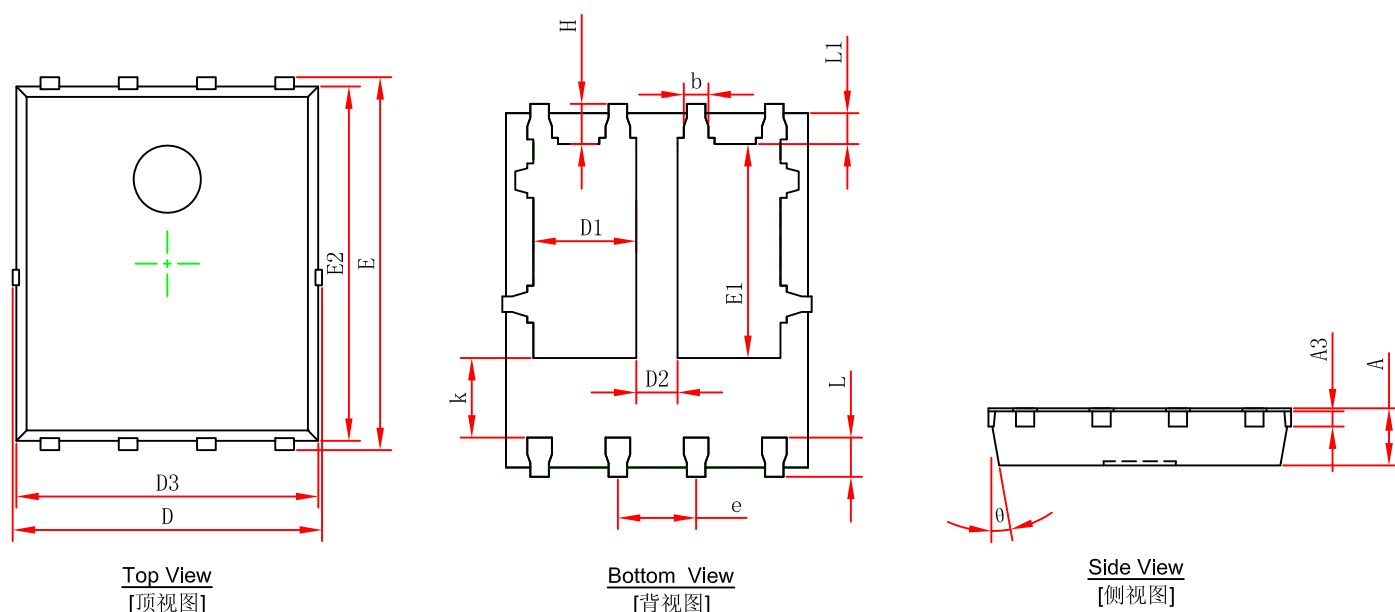


Typical Characteristics

P-Channel MOS



PDFNWB5×6-8L-A Package Outline Dimensions

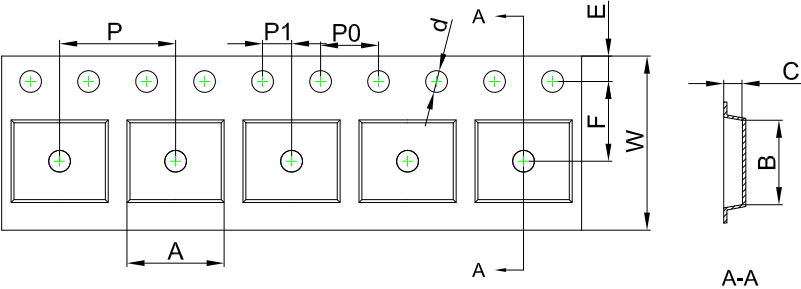


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254 REF.		0.010 REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	1.470	1.870	0.058	0.074
D2	0.470	0.870	0.019	0.034
E1	3.375	3.575	0.133	0.141
D3	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270 TYP.		0.050 TYP.	
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°

NOTICE

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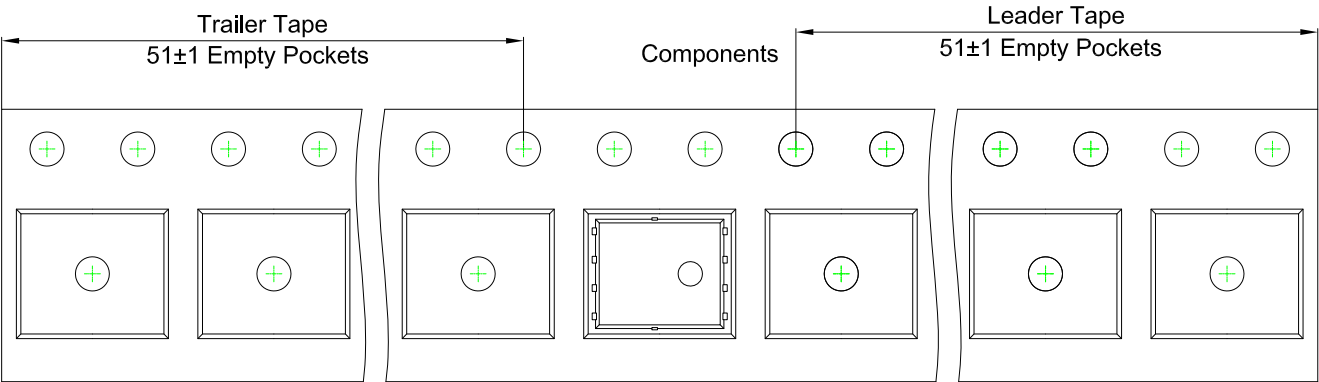
PDFNWB5×6-8L-A Embossed Carrier Tape



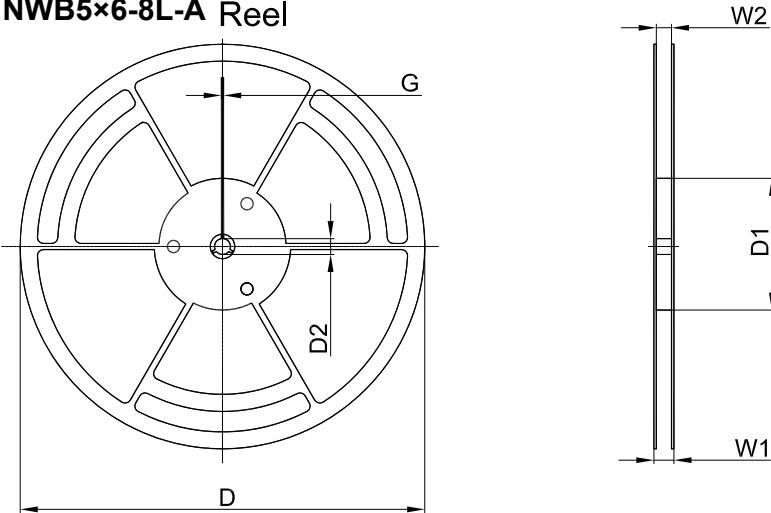
Packaging Description:
PDFNWB5×6-8L-A parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed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

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