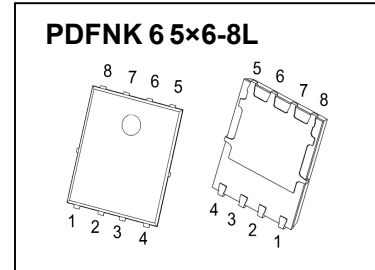




PDFNK 6 5×6-8L Plastic-Encapsulate MOSFETS

CJAC150N03 N-Channel Power MOSFET

V _{(BR)DSS}	R _{DS(on)} TYP	I _D
30V	1.6mΩ@10V	150A
	2.1mΩ@4.5V	



DESCRIPTION

V_{GS} max = 20V, V_{DS} max = 30V, I_D max = 150A, R_{DS(on)} max = 2.1mΩ @ 4.5V, R_{DS(on)} max = 1.6mΩ @ 10V, E_{AS} max = 280mJ, P_D max = 130W, T_J max = 150°C, T_{stg} range = -55 ~ +150°C, T_L max = 260°C.

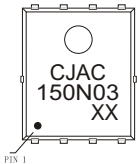
FEATURES

- V_{GS} max = 20V
- V_{DS} max = 30V
- P_D max = 130W
- T_J max = 150°C
- T_{stg} range = -55 ~ +150°C
- T_L max = 260°C
- R_{DS(on)} max = 2.1mΩ @ 4.5V
- R_{DS(on)} max = 1.6mΩ @ 10V
- E_{AS} max = 280mJ

APPLICATIONS

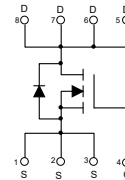
- Motor drive
- Power amplifier

MARKING



CJAC150N03M
 Ú | dot = Pin1 indicator
 XX= Code

EQUIVALENT CIRCUIT



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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	30	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D ^①	150	A
Pulsed Drain Current	I _{DM} ^②	600	A
Single Pulsed Avalanche Energy	E _{AS} ^③	280	mJ
Power Dissipation	P _D ^①	130	W
Thermal Resistance from Junction to Ambient	R _{θJA} ^⑥	62.5	°C/W
Thermal Resistance from Junction to Case	R _{θJC} ^①	0.96	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55 ~ +150	°C
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T _L	260	°C

MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

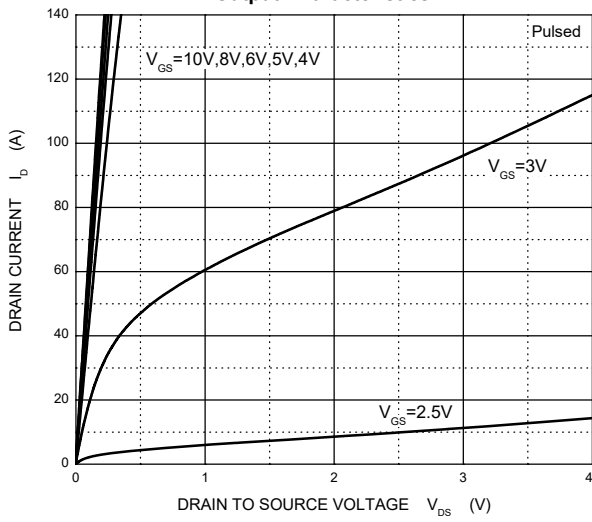
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
On characteristics ^④						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.2	1.6	2.5	V
Static drain-source on-state resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 30A$		1.6	2.0	$m\Omega$
		$V_{GS} = 4.5V, I_D = 15A$		2.1	2.7	$m\Omega$
Forward transconductance	g_{fs}	$V_{DS} = 10V, I_D = 2A$		17		S
Dynamic characteristics ^{④ ⑤}						
Input capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V,$ $f = 1MHz$		5400		pF
Output capacitance	C_{oss}			780		
Reverse transfer capacitance	C_{rss}			600		
Switching characteristics ^{④ ⑤}						
Total gate charge	Q_g	$V_{GS} = 4.5V, V_{DS} = 15V,$ $I_D = 24A$		60		nC
Gate-source charge	Q_{gs}			11.1		
Gate-drain charge	Q_{gd}			9.5		
Turn-on delay time	$t_{d(on)}$	$V_{DS} = 15V, R_L = 0.75\Omega,$ $V_{GS} = 10V, R_G = 1\Omega$		20		ns
Turn-on rise time	t_r			32		
Turn-off delay time	$t_{d(off)}$			75		
Turn-off fall time	t_f			28		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	V_{SD} ^④	$V_{GS} = 0V, I_S = 10A$			1.0	V
Continuous drain-source diode forward current	I_S ^①				150	A
Pulsed drain-source diode forward current	I_{SM} ^②				600	A

Notes:

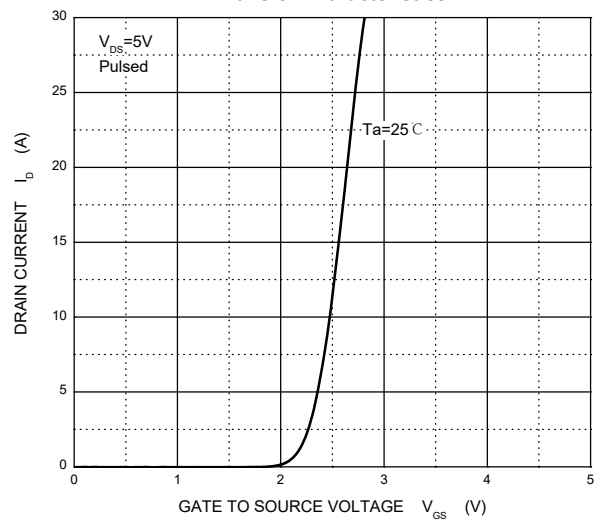
- $T_C=25\text{ }^\circ\text{C}$ Limited only by maximum temperature allowed.
- $PW \leq 10\mu s$, Duty cycle $\leq 1\%$.
- EAS condition: $V_{DD} = 30V, V_{GS} = 10V, L = 0.1mH, R_g = 25\Omega$ Starting $T_J = 25\text{ }^\circ\text{C}$.
- Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production.
- 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 $T_a = 25\text{ }^\circ\text{C}$.

Typical Characteristics

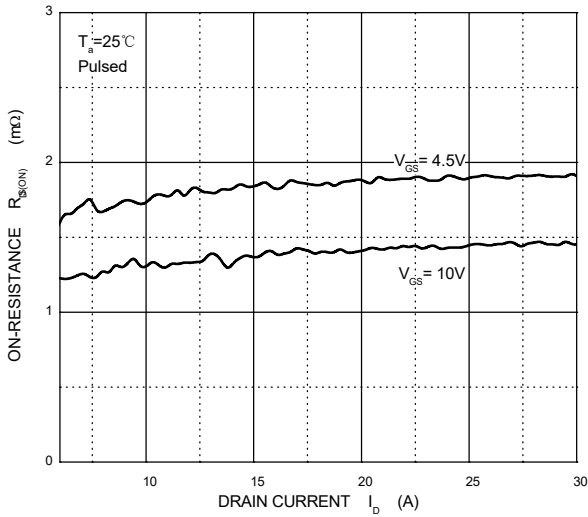
Output Characteristics



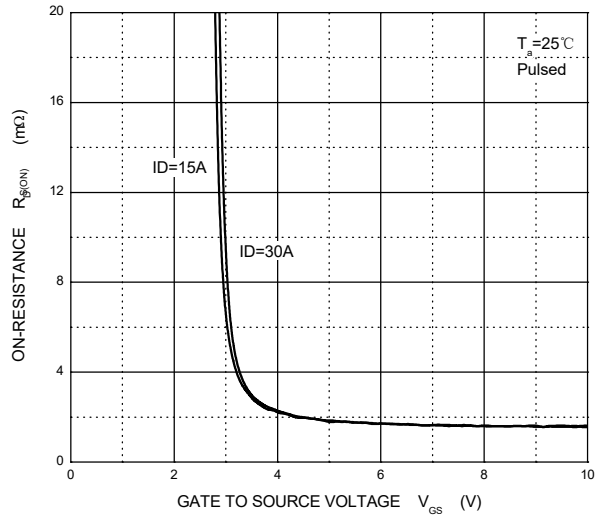
Transfer Characteristics



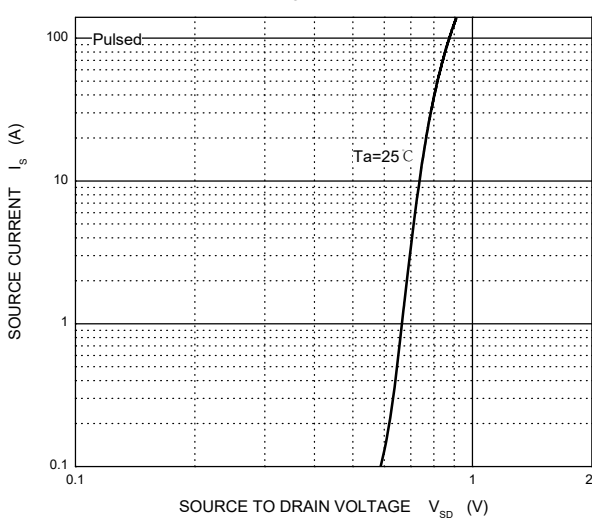
$R_{DS(ON)}$ — I_D



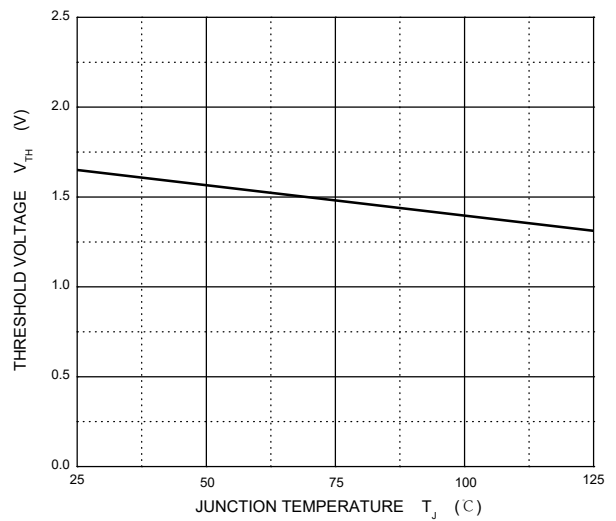
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}

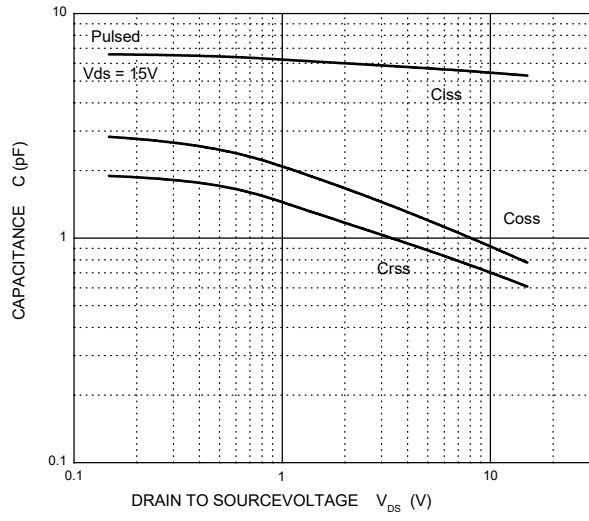


Threshold Voltage

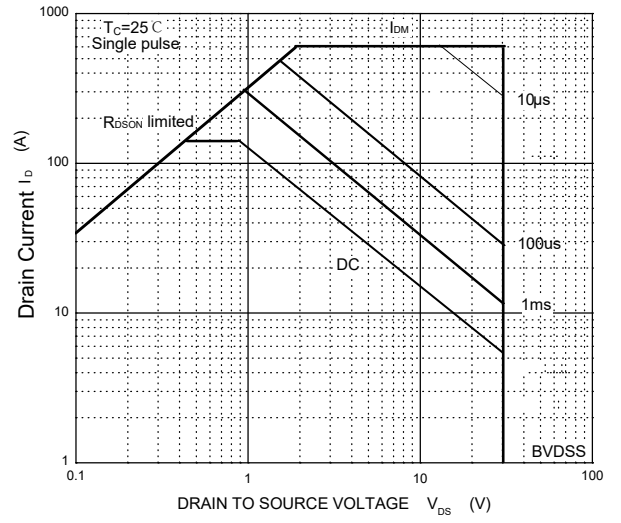


Typical Characteristics

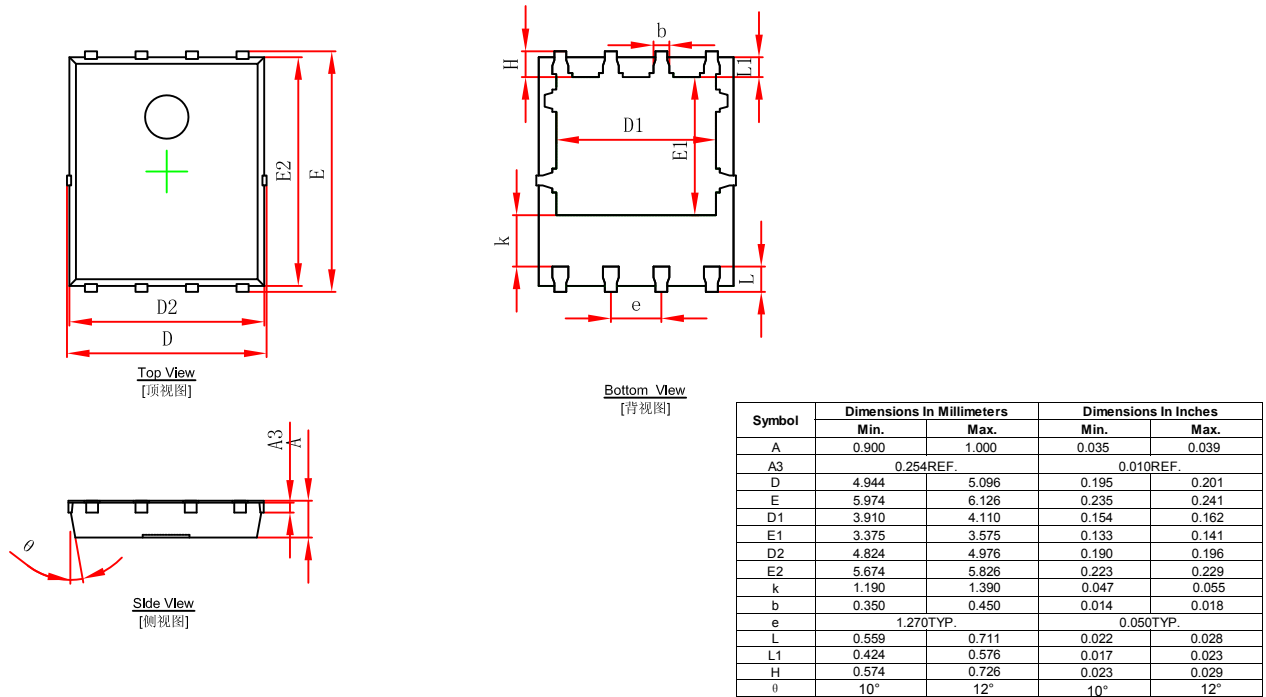
Capacitances



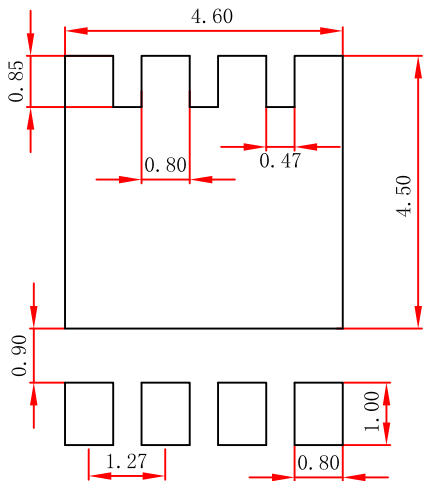
Maximum Forward Biased Safe Operating Area



PDFNWB5x6-8L Package Outline Dimensions



PDFNWB5x6-8L Suggested Pad Layout



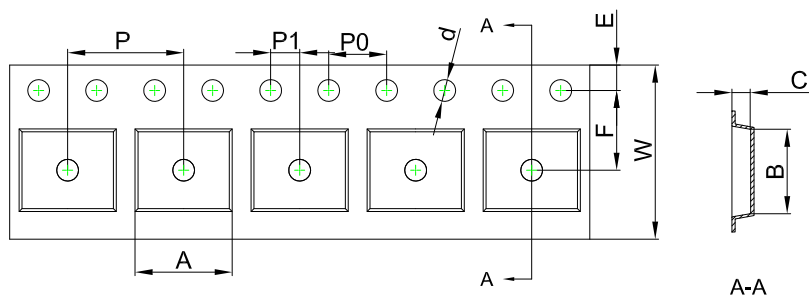
- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

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

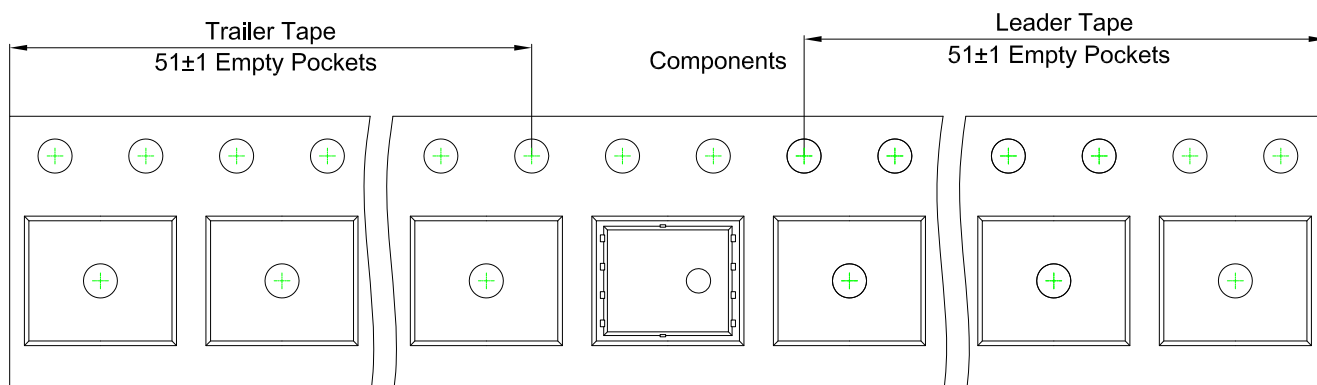
PDFNWB5×6-8L Embossed Carrier Tape



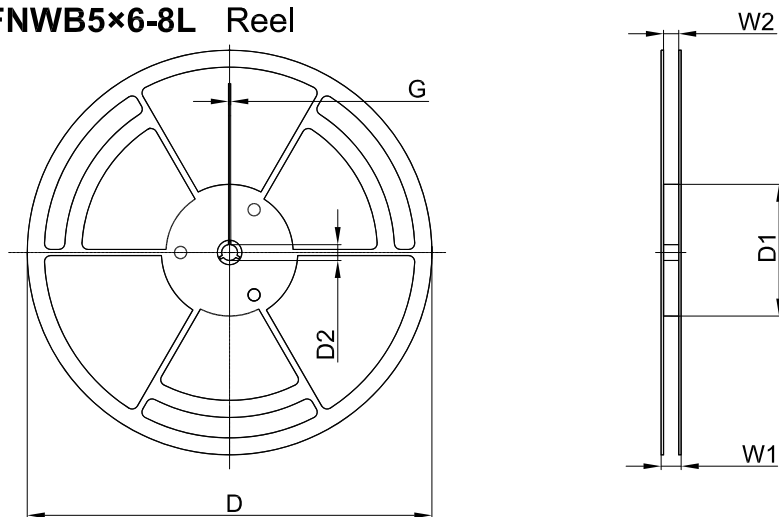
Packaging Description:
PDFNWB5×6-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed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