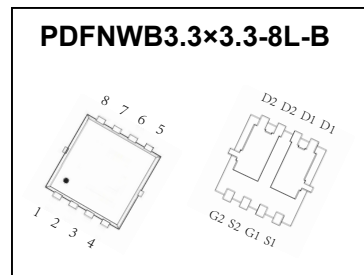


PDFNWB3.3×3.3-8L-B Plastic-Encapsulate MOSFETS

CJAB2003 N-Channel + P-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$ TYP	I_D
30V	10mΩ@10V	30A
	17mΩ@4.5V	
-30V	26mΩ@-10V	-20A
	40mΩ@-4.5V	



DESCRIPTION

The CJAB2003 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

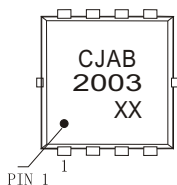
FEATURES

- 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

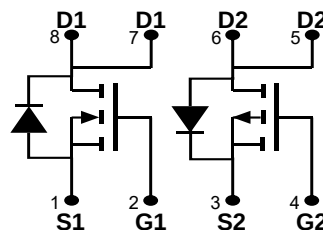
- SMPS and general purpose applications
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

MARKING



CJAB2003=Part No.
Solid dot=Pin1 indicator
XX=Date 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}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current		I_D	30	A
Pulsed Drain Current		I_{DM}	100	A
Single Pulsed Avalanche Energy		E_{AS}	80	mJ
P-MOSFET				
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current		I_D	-20	A
Pulsed Drain Current		I_{DM}	-80	A
Single Pulsed Avalanche Energy		E_{AS}	45	mJ
Temperature and Thermal Resistance				
Thermal Resistance from Junction to Ambient	N-Ch	$R_{\theta JA}$	83.3	°C/W
Thermal Resistance from Junction to Ambient	P-Ch	$R_{\theta JA}$	83.3	°C/W
Thermal Resistance from Junction to Case	N-Ch	$R_{\theta JC}$	4.17	°C/W
Thermal Resistance from Junction to Case	P-Ch	$R_{\theta JC}$	5.0	°C/W
Power Dissipation	N-Ch	P_D	30	W
Power Dissipation	P-Ch	P_D	25	W
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55~+150	°C

MOSFET ELECTRICAL CHARACTERISTICS

N-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 =250×A		30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =24V, V _{GS} =0V	T _J =25			1.0	×A
			T _J =125			100	
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V				±100	nA
On characteristics							
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250×A		1.0	1.8	2.5	V
Static drain-source on-sate resistance	R _{DS(on)}	V _{GS} =10V, I _D =8A			10	13	mΩ
		V _{GS} =4.5V, I _D =6A			17	22	mΩ
Dynamic characteristics							
Input capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f =1MHz			1000		pF
Output capacitance	C _{oss}				143		
Reverse transfer capacitance	C _{rss}				130		
Gate resistance	R _g	f =1MHz			6.0		Ω
Switching characteristics							
Total gate charge	Q _g	V _{GS} =10V, V _{DS} =15V, I _D =8A			22		nC
Gate-source charge	Q _{gs}				2.8		
Gate-drain charge	Q _{gd}				5.2		
Turn-on delay time	t _{d(on)}	V _{DD} =15V, R _L =5 _Ω , V _{GS} =10V, R _{GEN} =10 _Ω			25		ns
Turn-on rise time	t _r				40		
Turn-off delay time	t _{d(off)}				140		
Turn-off fall time	t _f				80		
Drain-Source Diode Characteristics							
Drain-source diode forward voltage	V _{SD}	V _{GS} =0V, I _S =8A				1.2	V
Continuous drain-source diode forward current	I _S					30	A
Pulsed drain-source diode forward current	I _{SM}					100	A

MOSFET ELECTRICAL CHARACTERISTICS

P-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×A		-30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V	T _J =25			-1.0	×A
			T _J =125			-100	
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V				≤100	nA
On characteristics							
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250×A		-1.0	-1.5	-2.5	V
Static drain-source on-sate resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-8A			26	34	mΩ
		V _{GS} =-4.5V, I _D =-6A			40	52	
Dynamic characteristics							
Input capacitance	C _{iss}	V _{DS} =-15V,V _{GS} =0V, f =1MHz			943		pF
Output capacitance	C _{oss}				107		
Reverse transfer capacitance	C _{rss}				90		
Gate resistance	R _g	f =1MHz			22		Ω
Switching characteristics							
Total gate charge	Q _g	V _{GS} =-10V,V _{DS} =-15V, I _D =-8A			28		nC
Gate-source charge	Q _{gs}				3.2		
Gate-drain charge	Q _{gd}				8.5		
Turn-on delay time	t _{d(on)}	V _{DD} =-15V,R _L =5Ω , V _{GS} =-10V, R _{GEN} =10Ω			32		ns
Turn-on rise time	t _r				55		
Turn-off delay time	t _{d(off)}				150		
Turn-off fall time	t _f				60		
Drain-Source Diode Characteristics							
Drain-source diode forward voltage	V _{SD}	V _{GS} =0V, I _S =-5A				-1.2	V
Continuous drain-source diode forward current	I _S					-20	A
Pulsed drain-source diode forward current	I _{SM}					-80	A

Notes:

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

2. $P_{WV} \leq 10\mu s$, Duty cycle $\leq 1\%$.

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

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

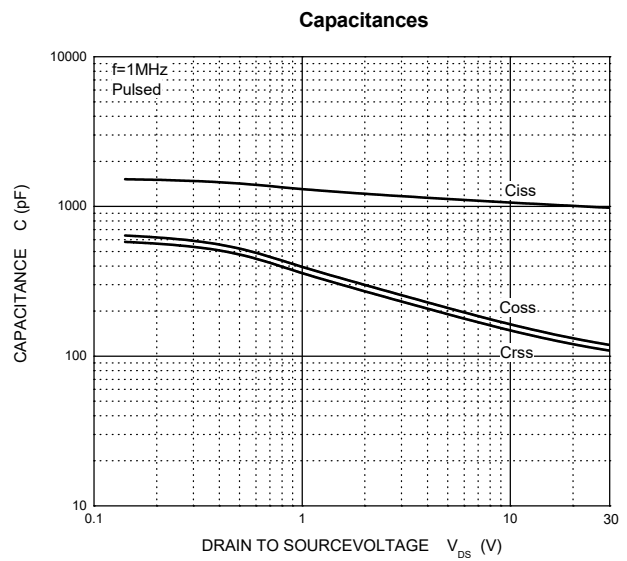
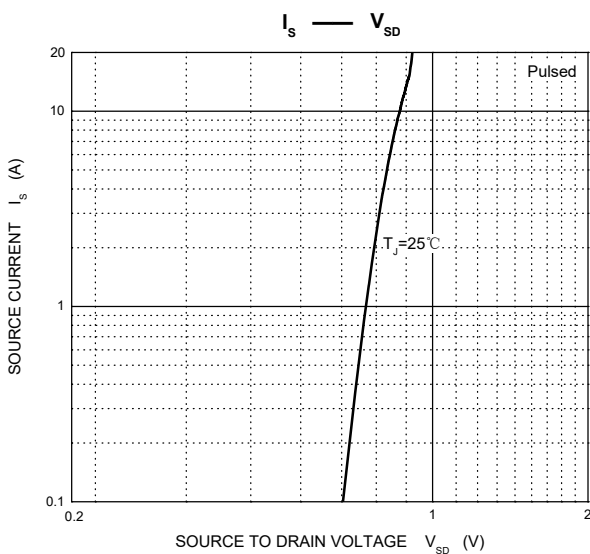
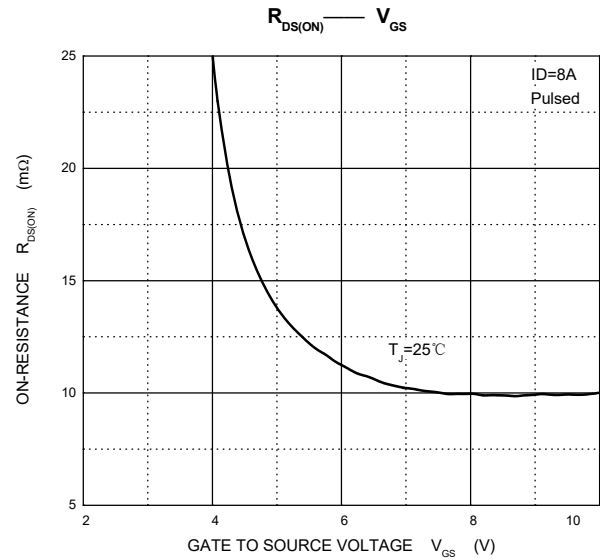
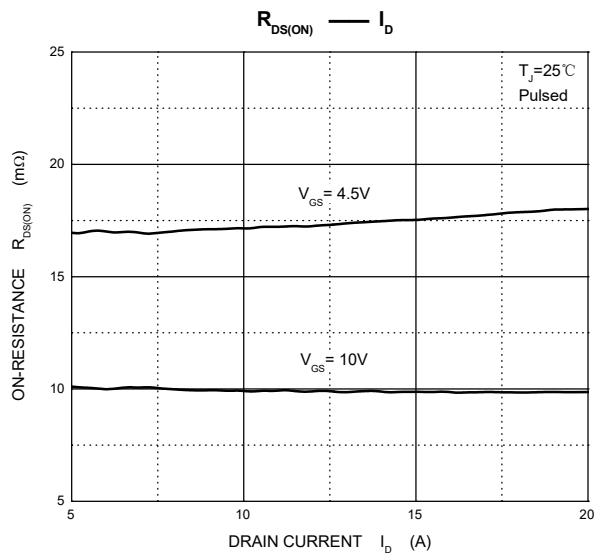
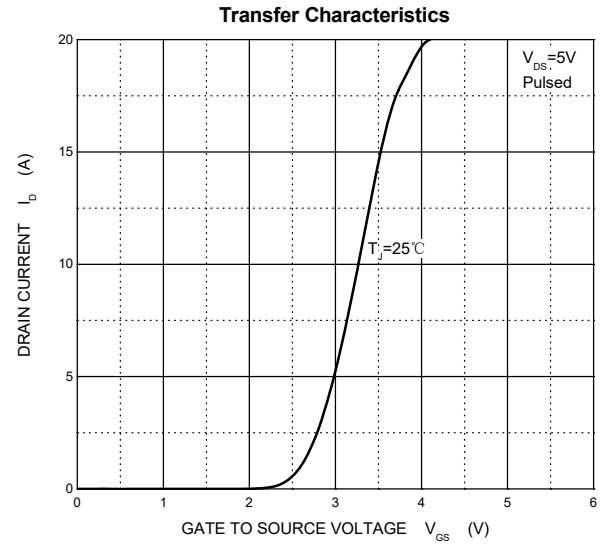
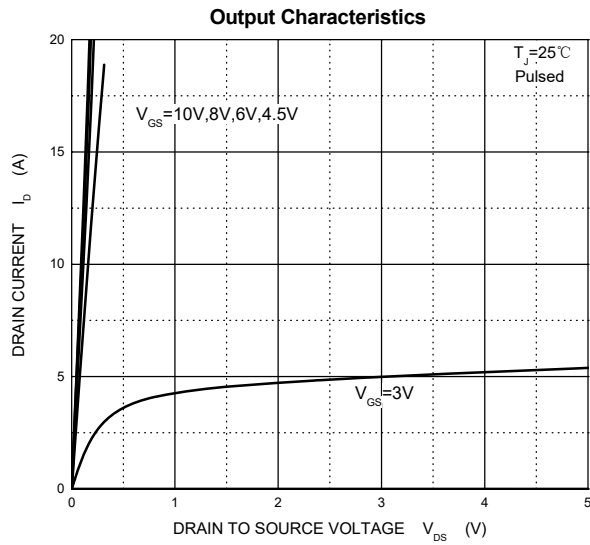
5. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.

6. Guaranteed by design, not subject to production.

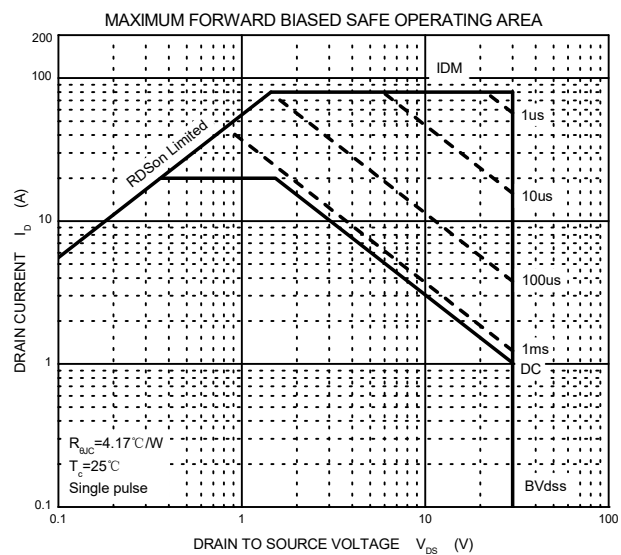
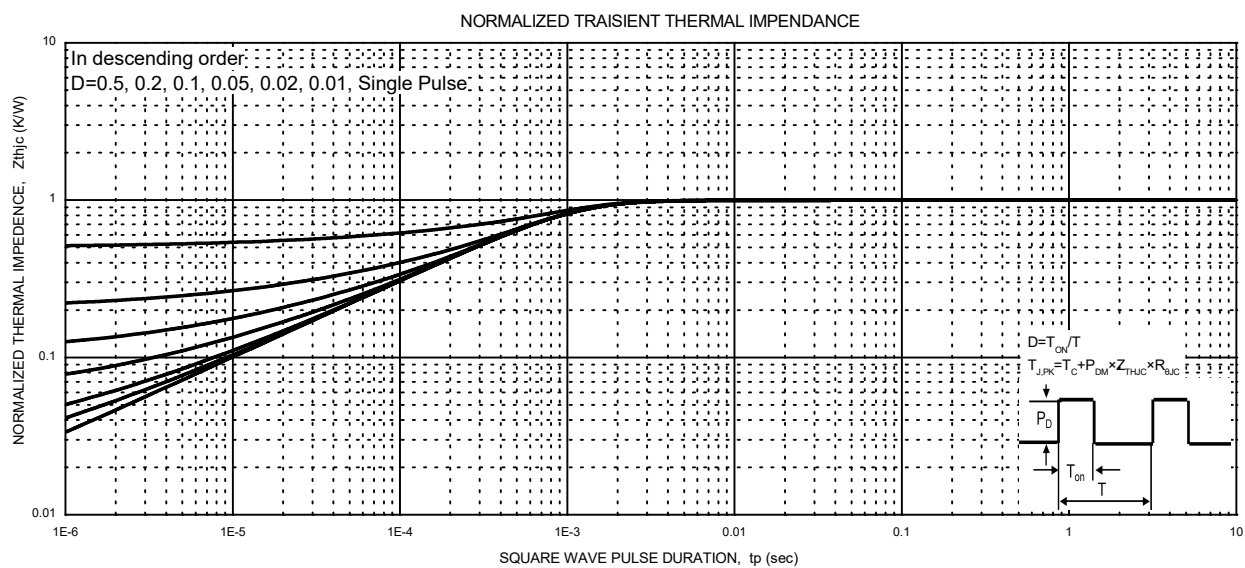
7. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_a = 25\text{ }^{\circ}\text{C}$. $t \leq 10\text{sec}$.

Typical Electrical and Thermal Characteristics

N-Channel MOS

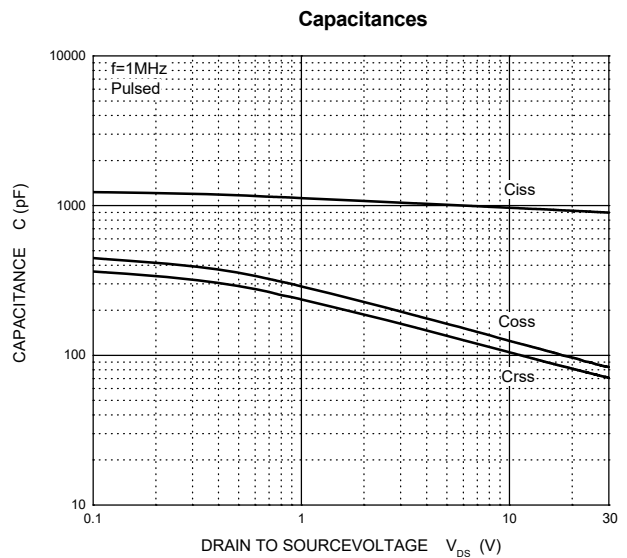
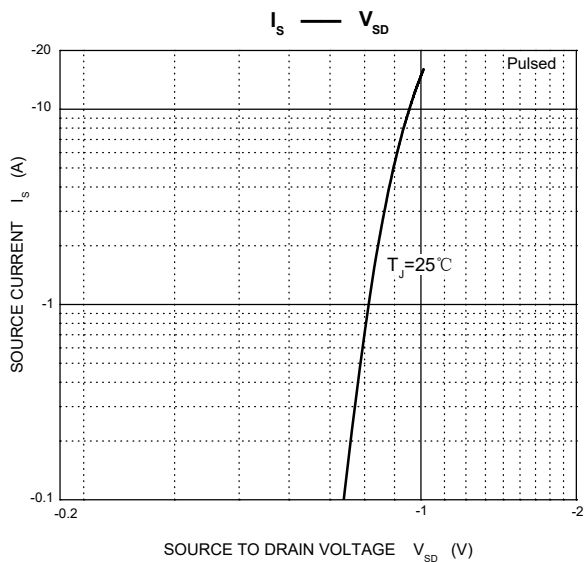
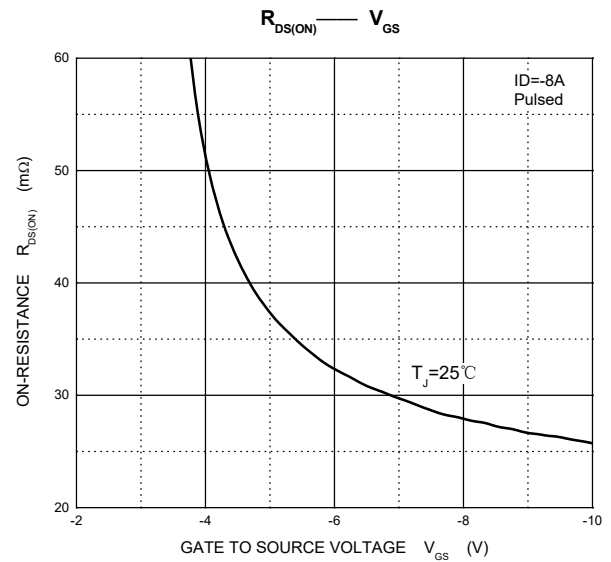
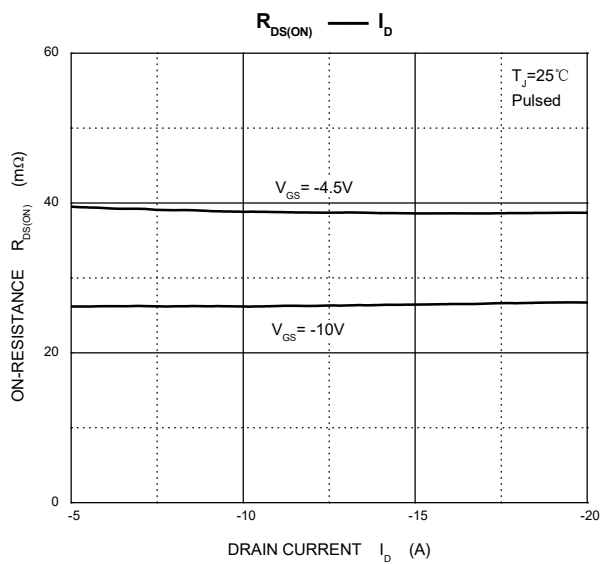
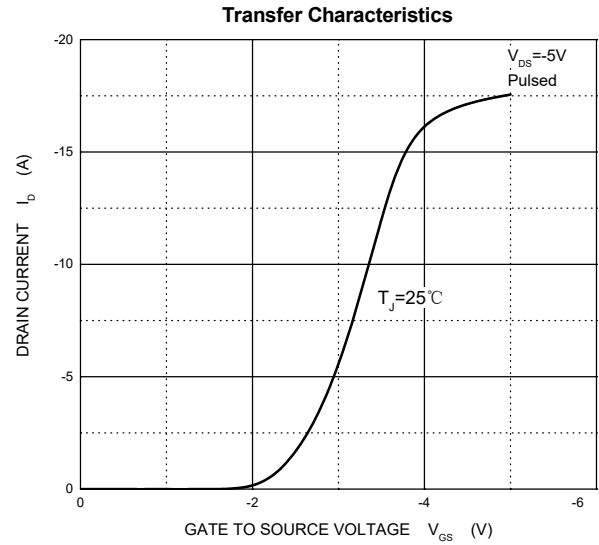
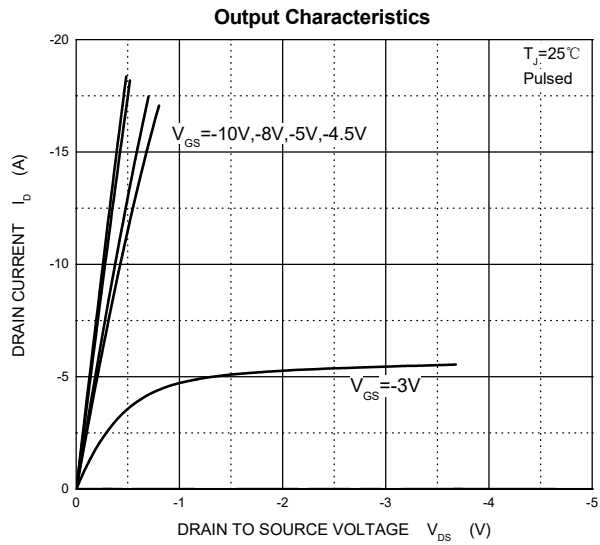


Typical Characteristics

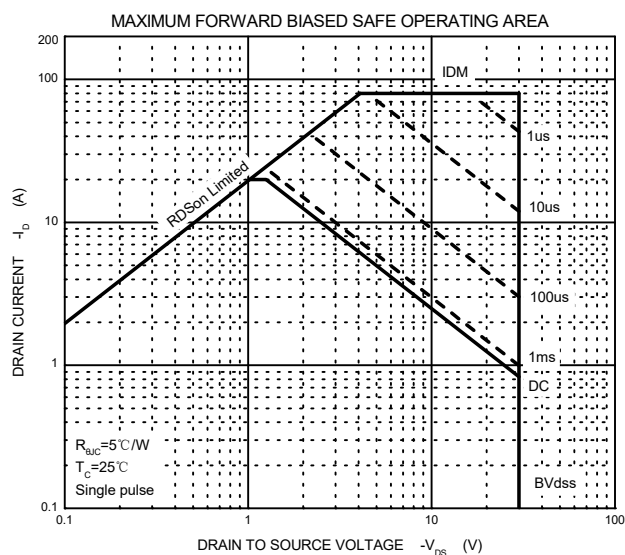
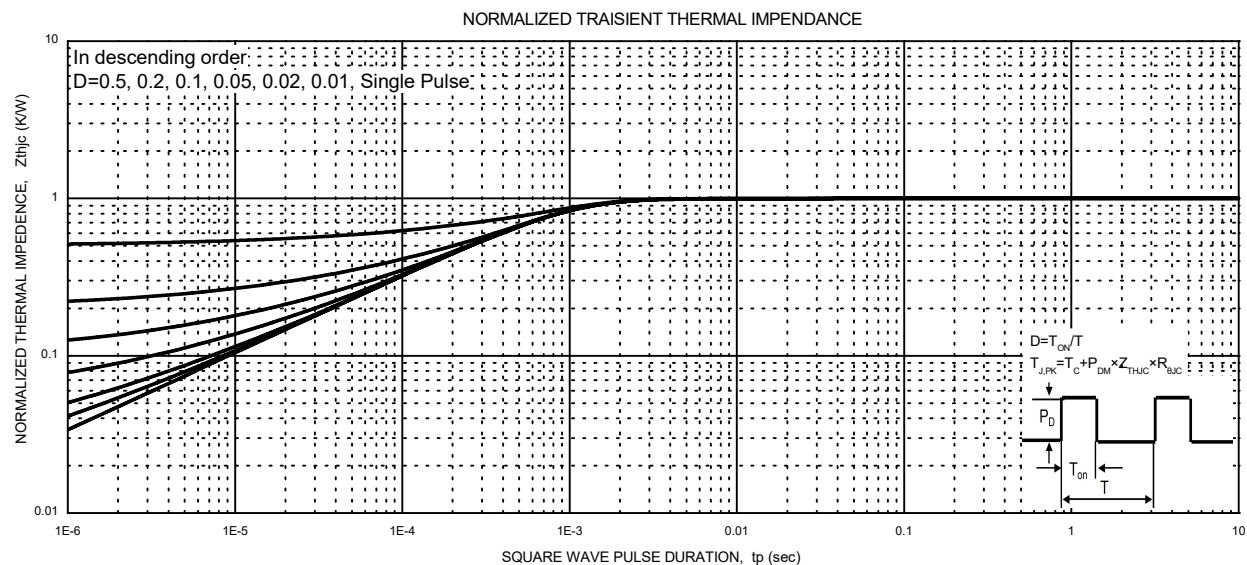


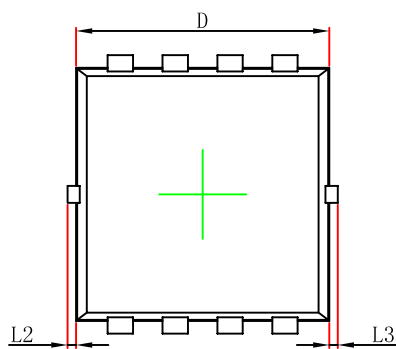
Typical Electrical and Thermal Characteristics

P-Channel MOS

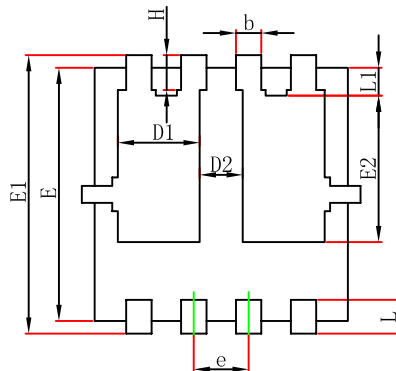


Typical Characteristics

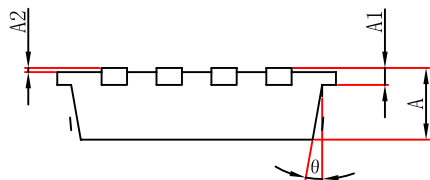




Top View
[顶视图]



Bottom View
[背视图]



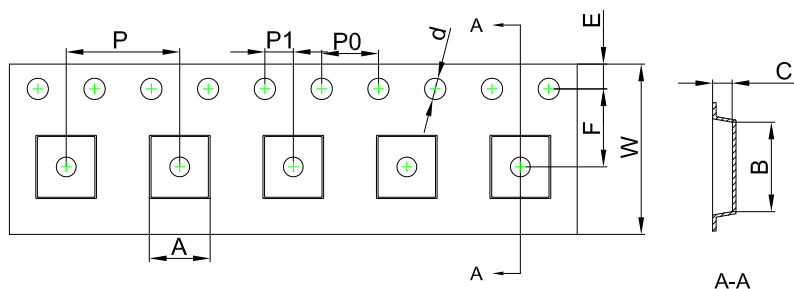
Side View
[侧视图]

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
θ	9°	13°	9°	13°

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-B Embossed Carrier Tape

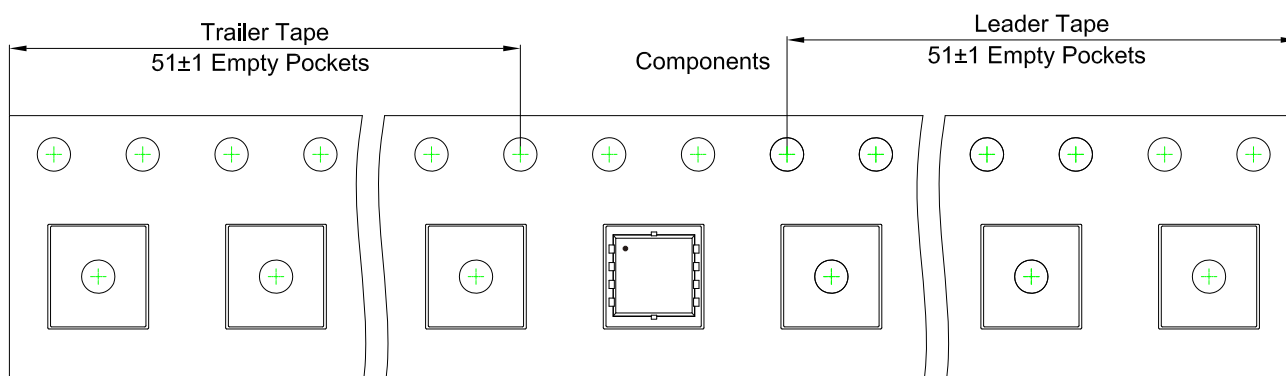


Packaging Description:

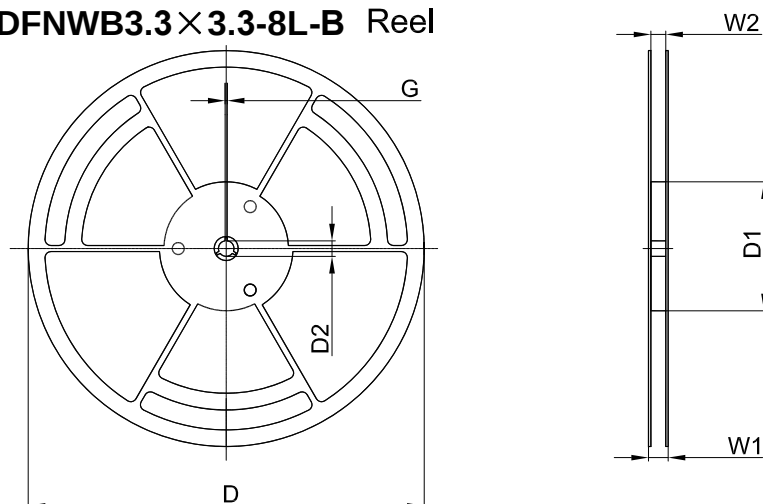
PDFNWB3.3×3.3-8L-B parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled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



PDFNWB3.3×3.3-8L-B 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