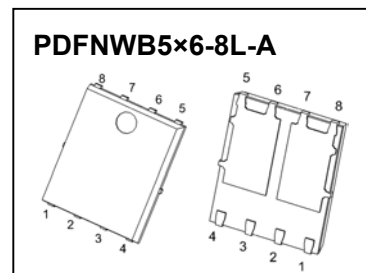




PDFNWB5×6-8L-A Plastic-Encapsulate MOSFETS

CJAC0610 N Channel+P Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	85mΩ@10V	10A
	110mΩ@4.5V	
-100V	150mΩ@-10V	-6A
	160mΩ@-4.5V	



DESCRIPTION

The CJAC0610 provides excellent $R_{DS(ON)}$. It can be used in a wide variety of applications

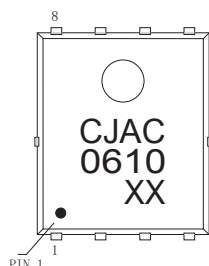
FEATURES

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

APPLICATIONS

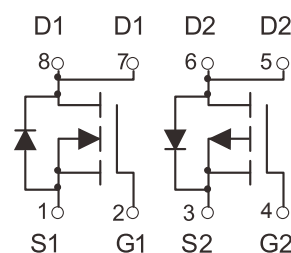
- DC/DC converter
- High-frequency switching and synchronous rectification

MARKING



CJAC0610 = Part No.
Solid dot = Pin1 indicator.
XX = Code.

EQUIVALENT CIRCUIT



Maximum ratings (Ta=25 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	10		A
Pulsed Drain Current	I _{DM}	40		A
Single Pulsed Avalanche Energy	E _{AS}	80		mJ
P-MOSFET				
Drain-Source Voltage	V _{DS}	-100		V
Gate-Source Voltage	V _{GS}	±20		V
Continuous Drain Current	I _D	-6.0		A
Pulsed Drain Current	I _{DM}	-24		A
Single Pulsed Avalanche Energy	E _{AS}	125		mJ
Temperature and Thermal Resistance		NMOS	PMOS	
Power Dissipation	P _D	44	75	W
Thermal Resistance from Junction to Ambient	R _{θJA}	69	65	°C/W
Thermal Resistance from Junction to Case	R _{θJC}	2.83	1.65	°C/W
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55~+150		°C

MOSFET ELECTRICAL CHARACTERISTICS

N-Channel MOSFET ELECTRICAL CHARACTERISTICS, $T_a=25\text{ }^{\circ}\text{C}$ 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}	$V_{DS} = 80V, V_{GS} = 0V$	$T_J = 25$			1.0	μA
			$T_J = 125$			100	
Gate-body leakage current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$				± 100	nA
On characteristics							
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$		1.0	2.0	2.5	V
Static drain-source on-sate resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5A$			85	100	m Ω
		$V_{GS} = 4.5V, I_D = 2A$			110	160	m Ω
Dynamic characteristics							
Input capacitance	C_{iss}	$V_{DS} = 30V, V_{GS} = 0V, f = 1MHz$			905	1810	pF
Output capacitance	C_{oss}				32	64	
Reverse transfer capacitance	C_{rss}				31	62	
Switching characteristics							
Total gate charge	Q_g	$V_{GS} = 10V, V_{DS} = 30V, I_D = 8A$			16	32	nC
Gate-source charge	Q_{gs}				2.2	4.4	
Gate-drain charge	Q_{gd}				4	8	
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 30V, I_D = 8A, V_{GS} = 10V, R_G = 3\Omega$			16		ns
Turn-on rise time	t_r				8.2		
Turn-off delay time	$t_{d(off)}$				2.2		
Turn-off fall time	t_f				4.5		
Drain-Source Diode Characteristics							
Drain-source diode forward voltage	V_{SD}	$V_{GS} = 0V, I_S = 4A$				1.2	V
Continuous drain-source diode forward current	I_S					10	A
Pulsed drain-source diode forward current	I_{SM}					40	A

MOSFET ELECTRICAL CHARACTERISTICS

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

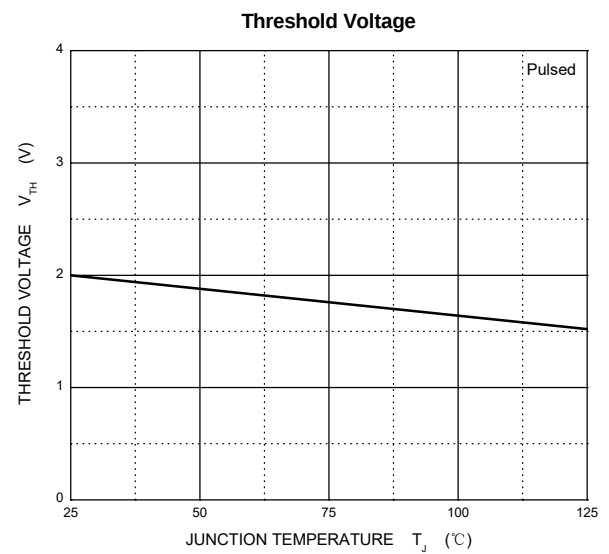
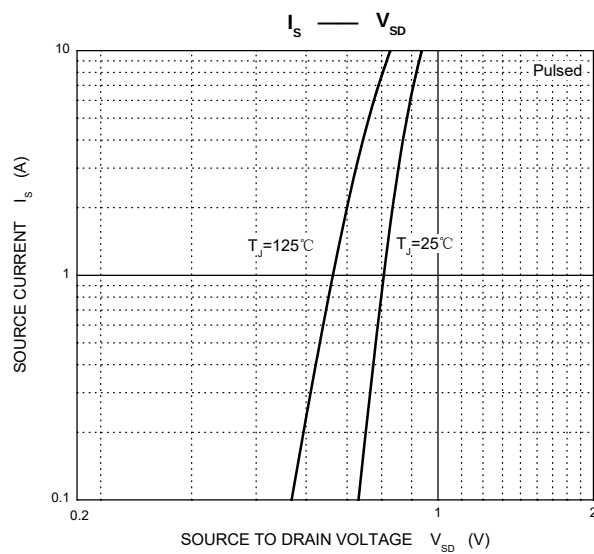
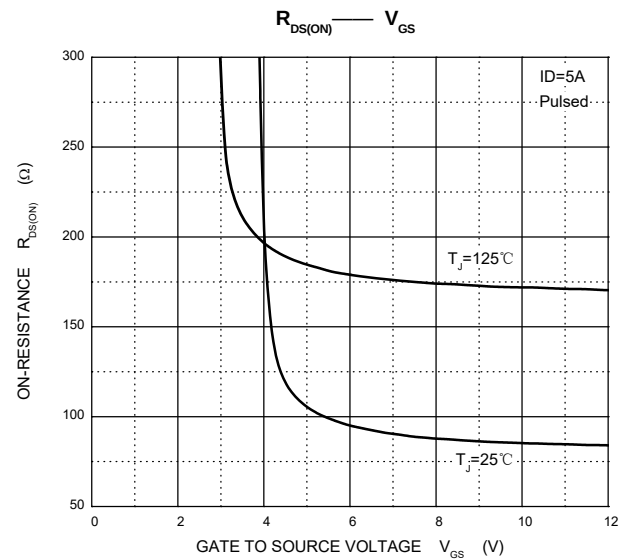
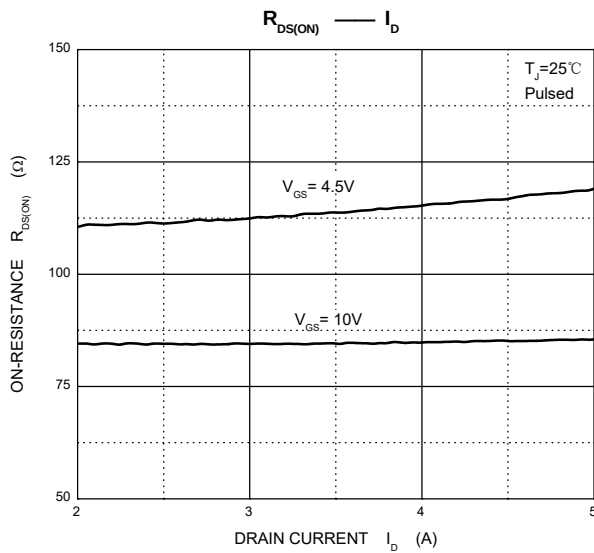
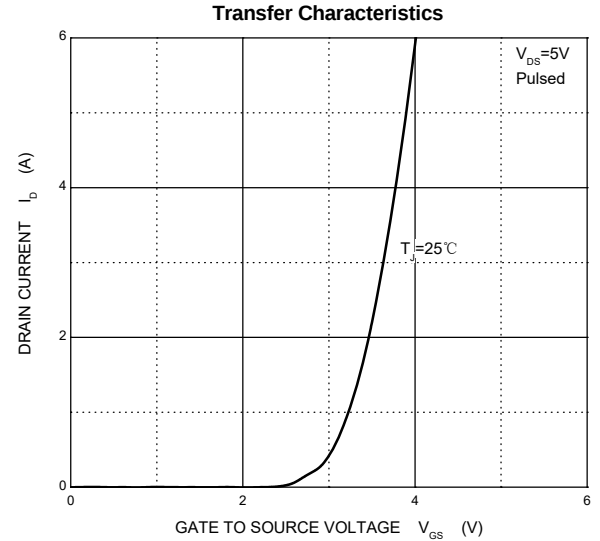
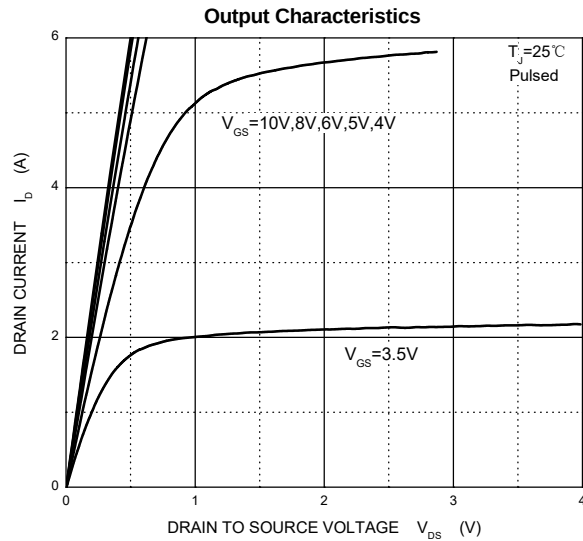
Parameter	Symbol	Test Condition		Min	Typ	Max	Unit
Off characteristics							
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D = -250μA		-100			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-80V, V _{GS} =0V	T _J =25			-1.0	μA
			T _J =125			-100	
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V				±100	nA
On characteristics							
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA		-1.0	-1.6	-2.5	V
Static drain-source on-sate resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-5A			150	210	mΩ
		V _{GS} =-4.5V, I _D =-2A			160	220	
Dynamic characteristics							
Input capacitance	C _{iSS}	V _{DS} =-30V,V _{GS} =0V, f =1MHz			1710	3420	pF
Output capacitance	C _{oSS}				65	130	
Reverse transfer capacitance	C _{rSS}				60	120	
Switching characteristics							
Total gate charge	Q _g	V _{GS} =-10V,V _{DS} =-30V, I _D =-8A			36	72	nC
Gate-source charge	Q _{gs}				5.4	11	
Gate-drain charge	Q _{gd}				7.1	14	
Turn-on delay time	t _{d(on)}	V _{DD} =-30V,I _D =-8.3A, V _{GS} =-10V, R _G =2.7Ω			6.6		ns
Turn-on rise time	t _r				15		
Turn-off delay time	t _{d(off)}				115		
Turn-off fall time	t _f				35		
Drain-Source Diode Characteristics							
Drain-source diode forward voltage	V _{SD}	V _{GS} =0V, I _S =-4A				-1.2	V
Continuous drain-source diode forward current	I _S					-6.0	A
Pulsed drain-source diode forward current	I _{SM}					-24	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: $V_{DD} = 50V, V_{GS} = 10V, L = 10mH, R_g = 25\Omega$ Starting $T_J = 25^\circ\text{C}$.
4. EAS condition: $V_{DD} = -50V, V_{GS} = -10V, L = 0.5mH, R_g = 25\Omega$ Starting $T_J = 25^\circ\text{C}$.
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 $T_a = 25^\circ\text{C}$.

Typical Characteristics

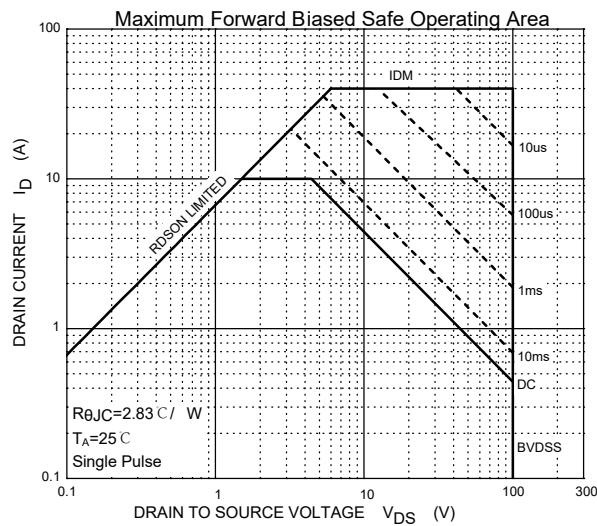
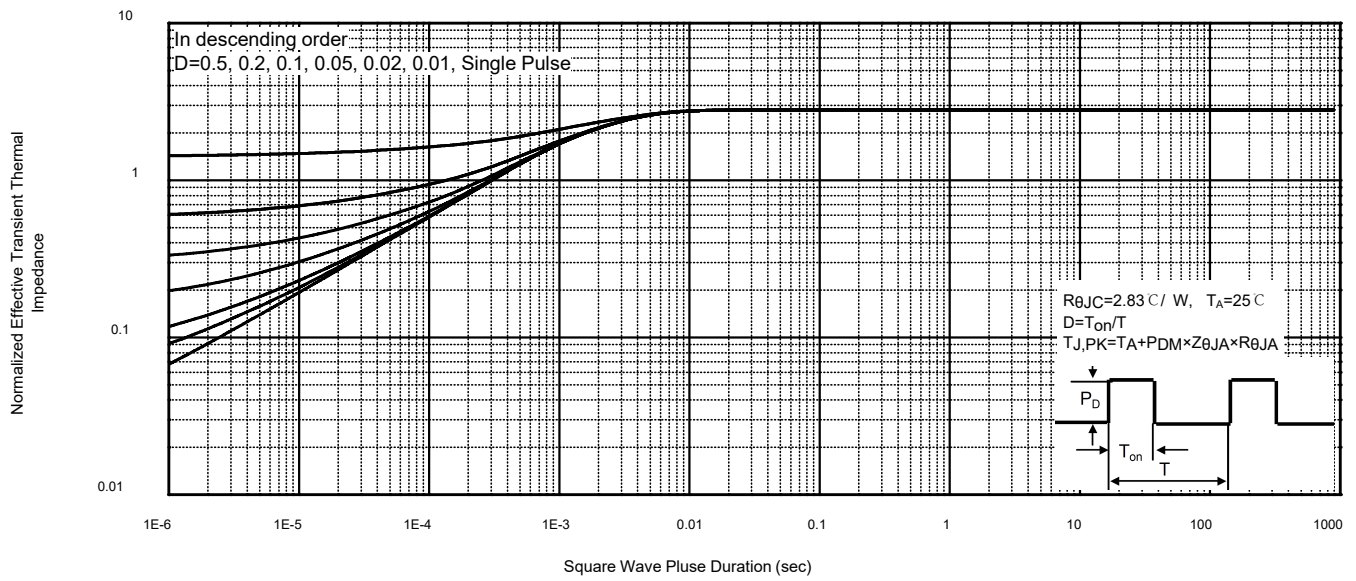
N-Channel MOS



Typical Characteristics

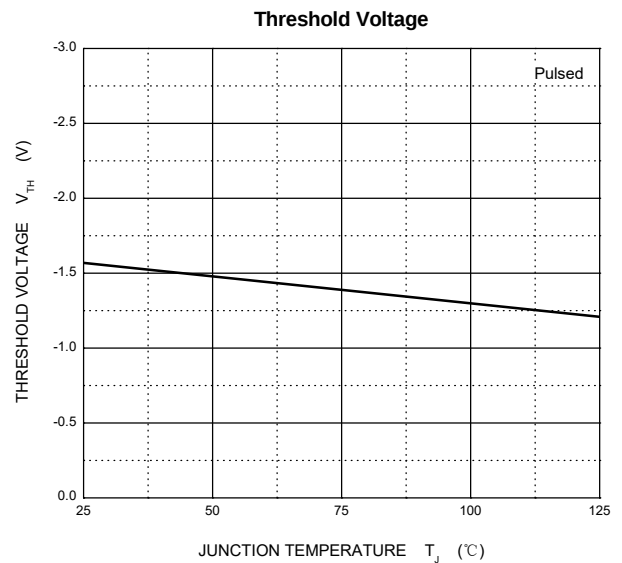
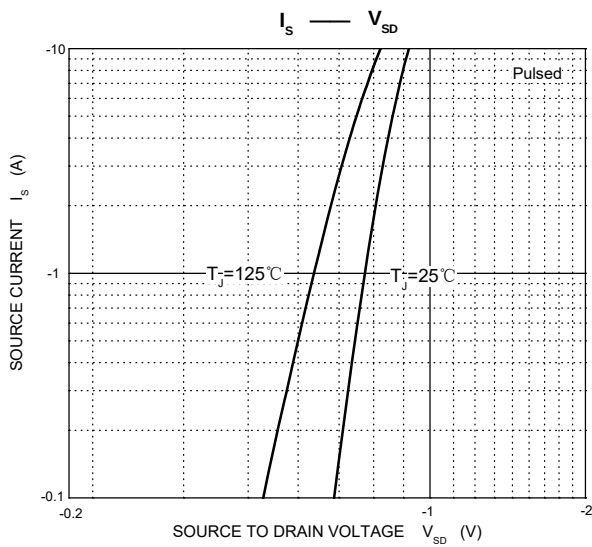
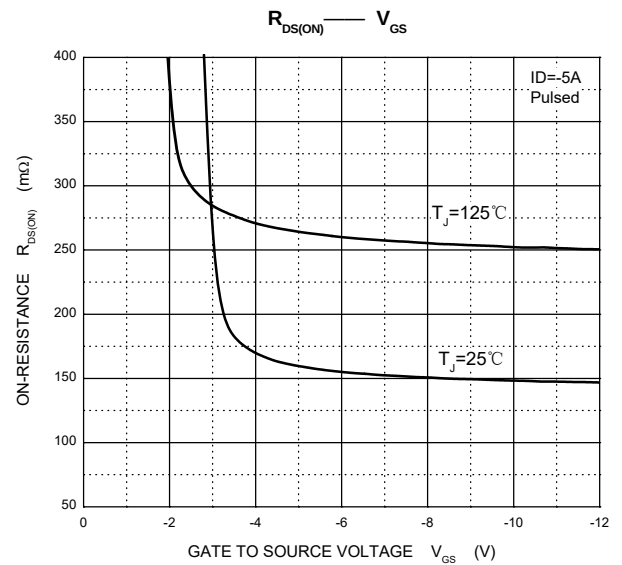
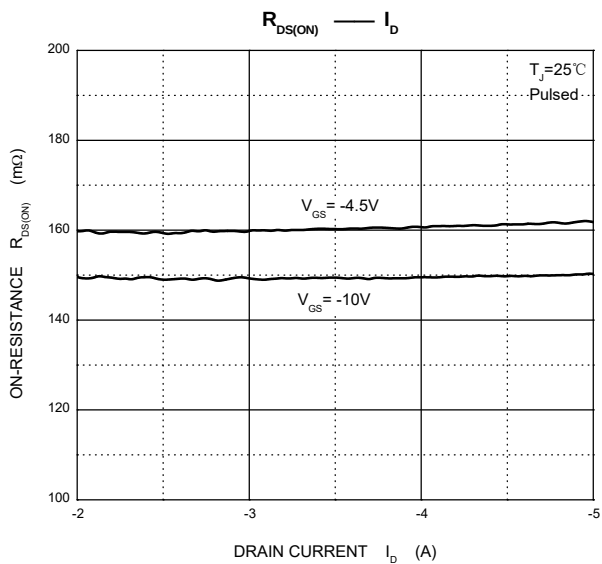
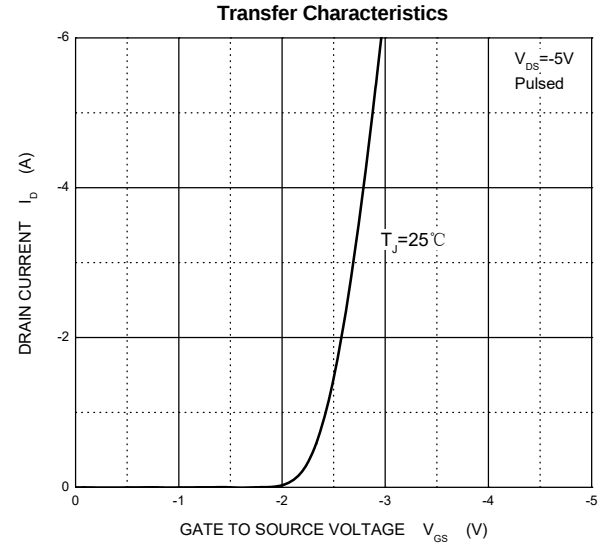
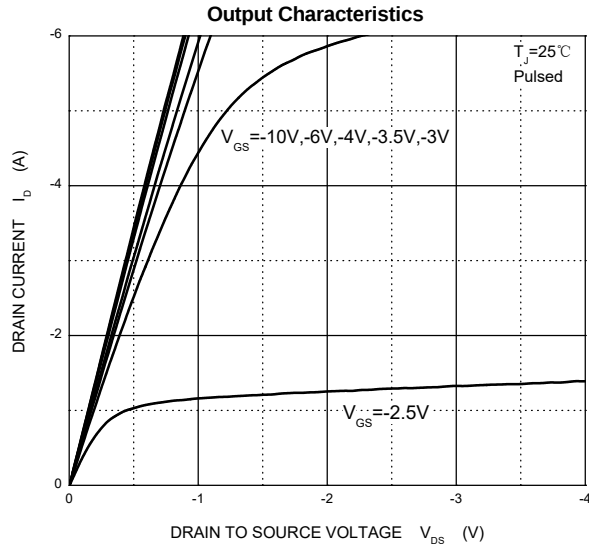
N-Channel MOS

Normalized Maximum Transient Thermal Impedance



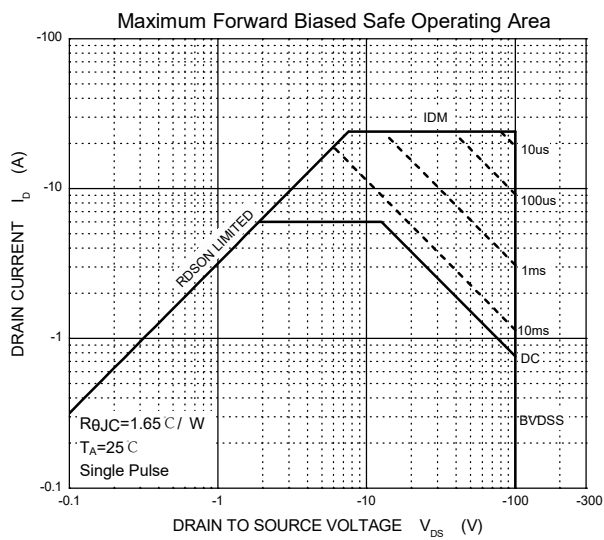
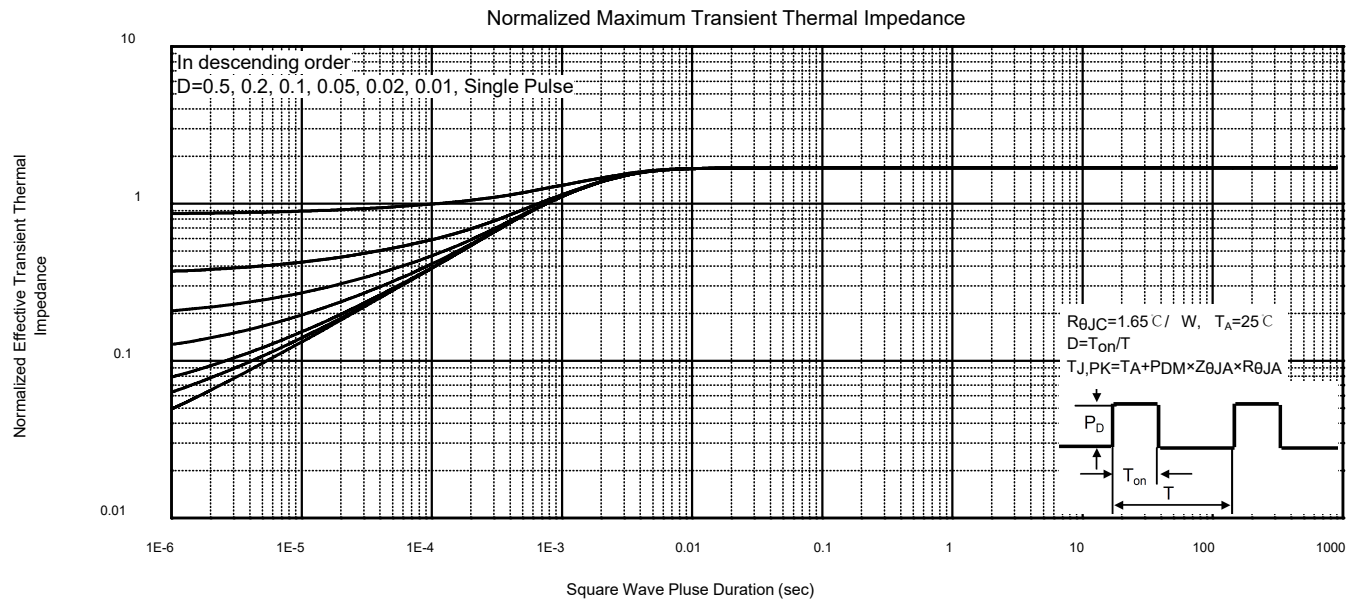
Typical Characteristics

P-Channel MOS

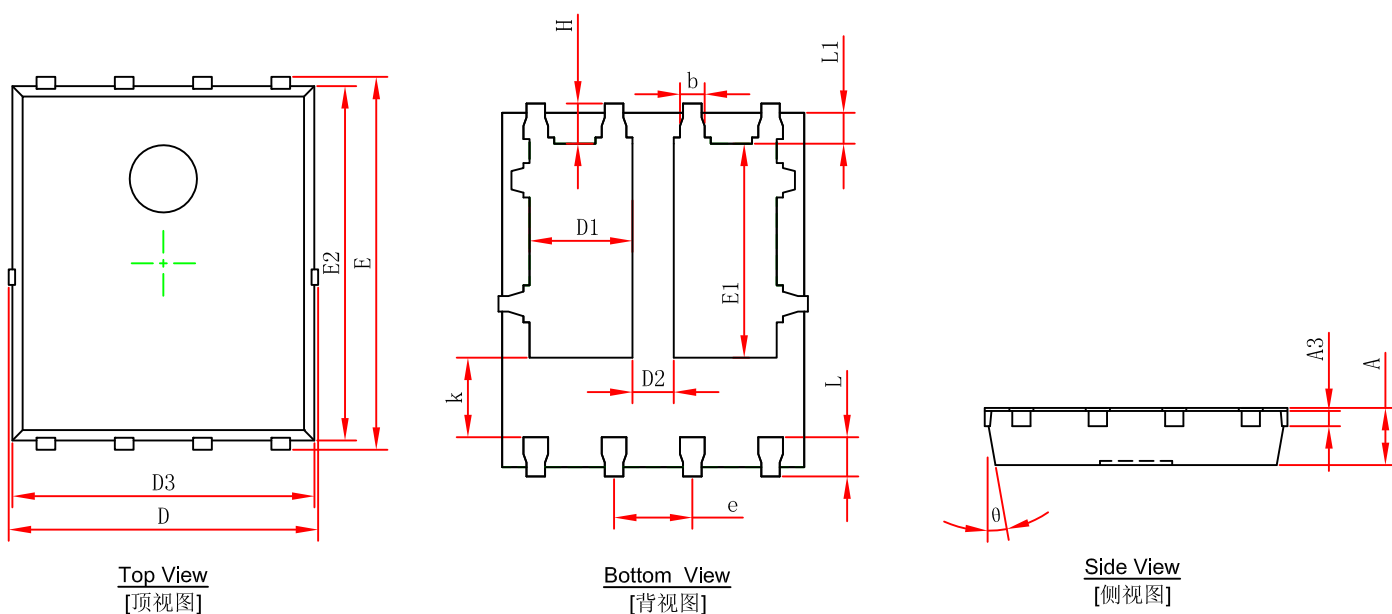


Typical Characteristics

P-Channel MOS



PDFNWB5×6-8L-A Package Outline Dimensions



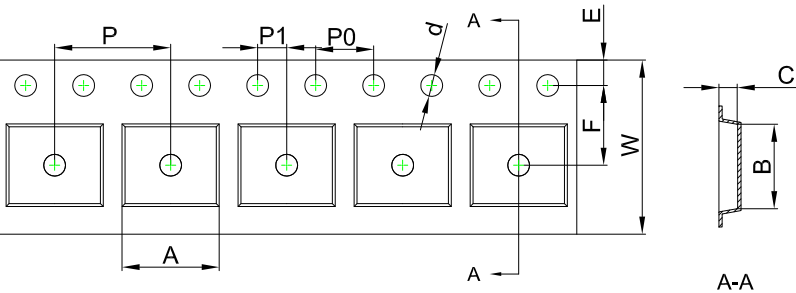
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254 REF.		0.010 REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	1.470	1.870	0.058	0.074
D2	0.470	0.870	0.019	0.034
E1	3.375	3.575	0.133	0.141
D3	4.824	4.976	0.190	0.196
E2	5.674	5.826	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

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

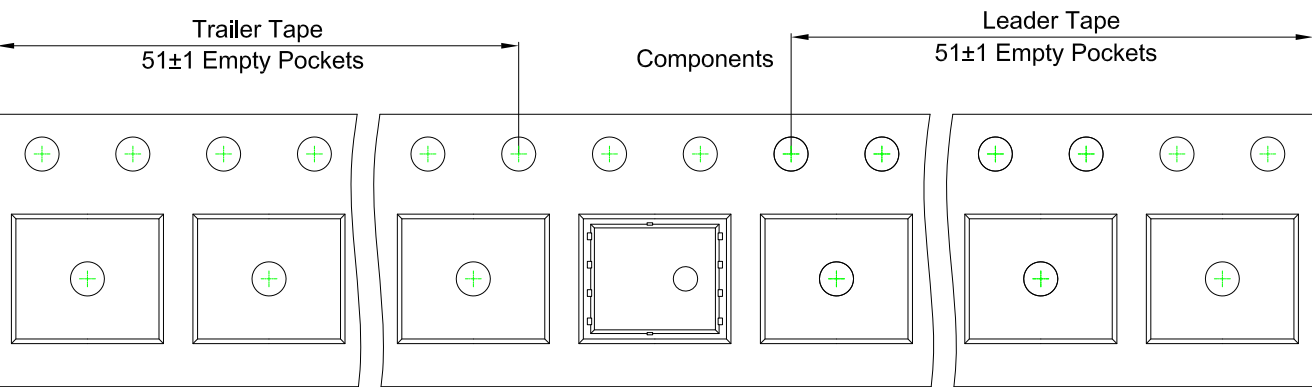
PDFNWB5×6-8L Embossed Carrier Tape



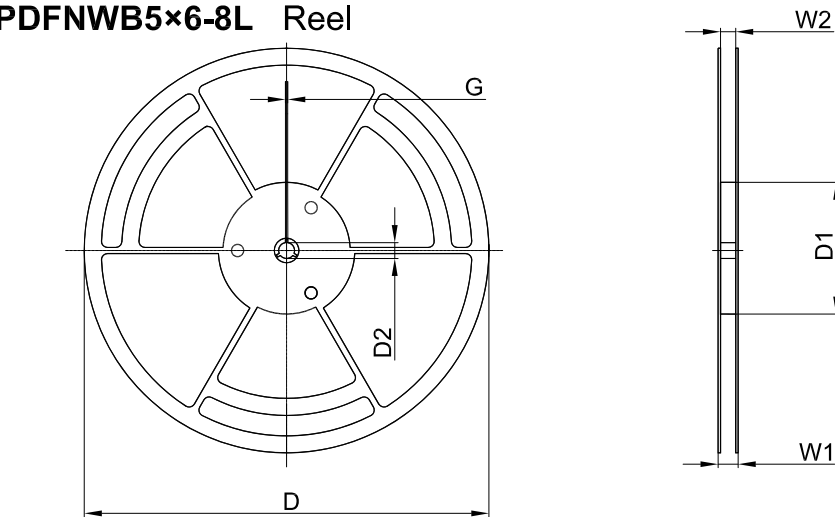
Packaging Description:
PDFNWB5×6-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed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