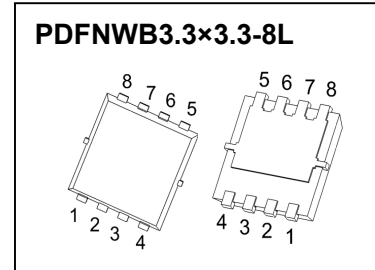


**CJAB25N04 N-Channel Power MOSFET**

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
40V	9.5mΩ@10V	25A
	16mΩ@4.5V	



**DESCRIPTION**

The CJAB25N04 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

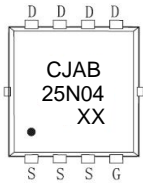
**FEATURES**

- High Power and current handing capability
- Load switch
- High density cell design for ultra low  $R_{DS(ON)}$
- Lead free product is acquired
- Good stability and uniformity with high  $E_{AS}$
- Excellent package for good heat dissipation

**APPLICATIONS**

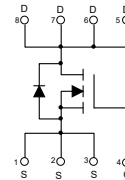
- SMPS and general purpose applications
- Hard switched and high frequency circuits
- Uninterruptible Power Supply
- Power management

**MARKING**



CJAB25N04 = 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
Drain-Source Voltage	$V_{DS}$	40	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	25	A
Pulsed Drain Current	$I_{DM}$	100	A
Single Pulsed Avalanche Energy	$E_{AS}^{(1)}$	141	mJ
Power Dissipation	$P_D$	3	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	41.67	$^\circ\text{C/W}$
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	$^\circ\text{C}$

(1). $E_{AS}$  condition:  $V_{DD}=15V, L=0.1mH, R_G=25\Omega$ , Starting  $T_J = 25^\circ\text{C}$

(2).Mounted on a glass epoxy board of 25.4 mm x 25.4 mm x 0.8 mmt

# MOSFET ELECTRICAL CHARACTERISTICS

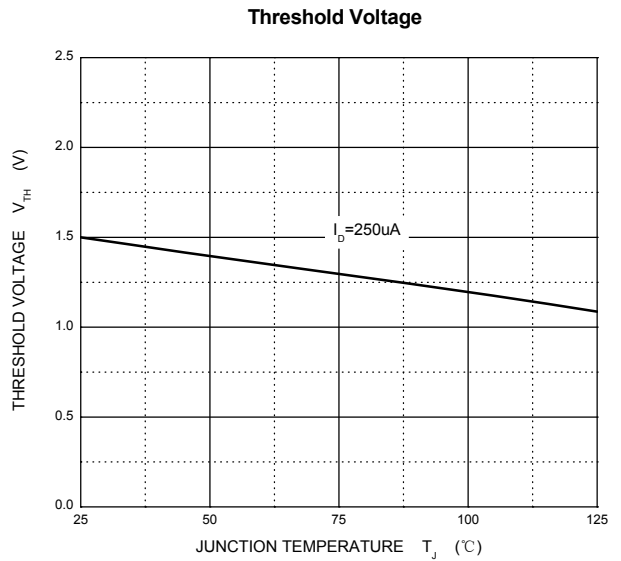
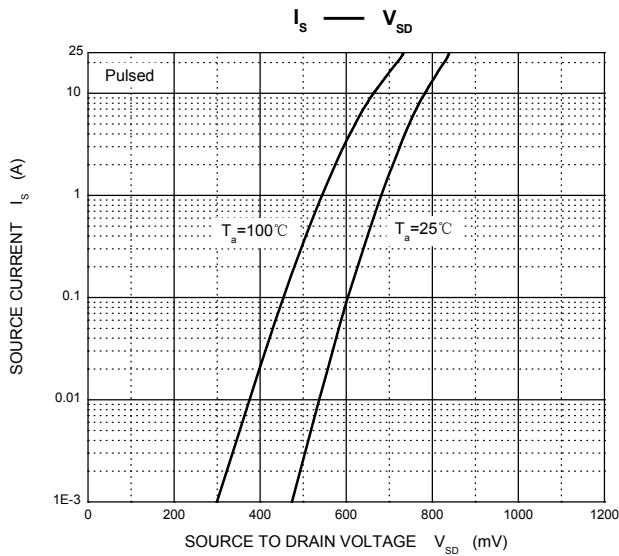
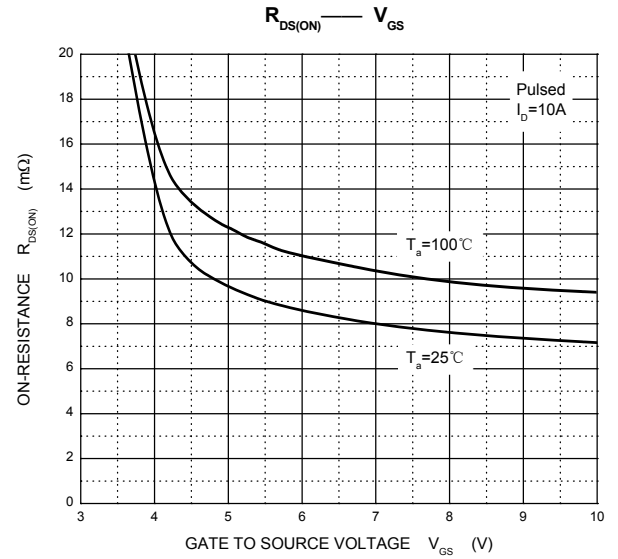
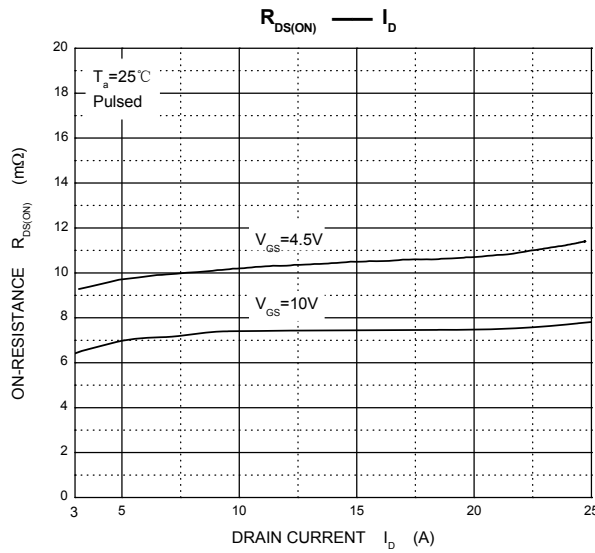
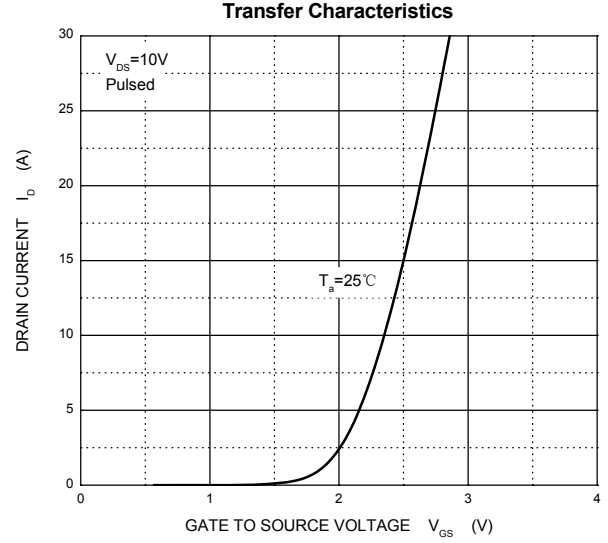
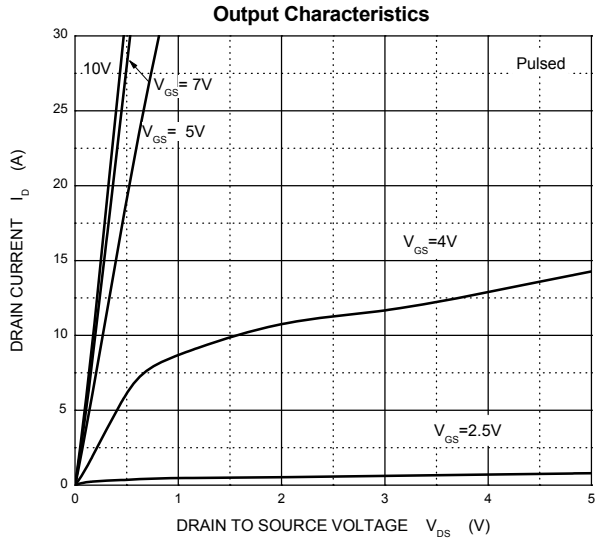
$T_a=25^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Off characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	40			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 30V, V_{GS} = 0V$			1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$			$\pm 100$	nA
<b>On characteristics (note1)</b>						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.5	2.5	V
Static drain-source on-state resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 10A$		7.2	9.5	$m\Omega$
		$V_{GS} = 4.5V, I_D = 10A$		10	16	$m\Omega$
Forward transconductance	$g_{fs}$	$V_{DS} = 5V, I_D = 20A$		36		S
<b>Dynamic characteristics (note 2)</b>						
Input capacitance	$C_{iss}$	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1MHz$		1980		pF
Output capacitance	$C_{oss}$			155		
Reverse transfer capacitance	$C_{rss}$			125		
<b>Switching characteristics (note 2)</b>						
Total gate charge	$Q_g$	$V_{DS} = 20V, V_{GS} = 10V,$ $I_D = 10A$		48		nC
Gate-source charge	$Q_{gs}$			5.5		
Gate-drain charge	$Q_{gd}$			12.3		
Turn-on delay time	$t_{d(on)}$	$V_{DS} = 25V, I_D = 14A,$ $V_{GS} = 10V, R_G = 3\Omega$		12		ns
Turn-on rise time	$t_r$			35		
Turn-off delay time	$t_{d(off)}$			48		
Turn-off fall time	$t_f$			11		
<b>Drain-Source Diode Characteristics</b>						
Drain-source diode forward voltage(note1)	$V_{SD}$	$V_{GS} = 0V, I_S = 10A$			1.2	V
Continuous drain-source diode forward current	$I_S$				25	A
Pulsed drain-source diode forward current	$I_{SM}$				100	A

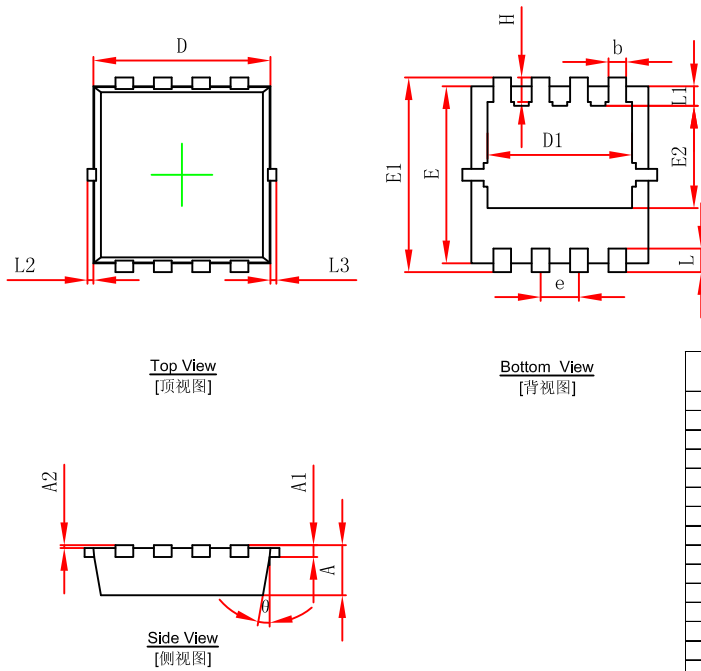
Notes:

1. Pulse Test : Pulse Width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
2. Guaranteed by design, not subject to production.

# Typical Characteristics

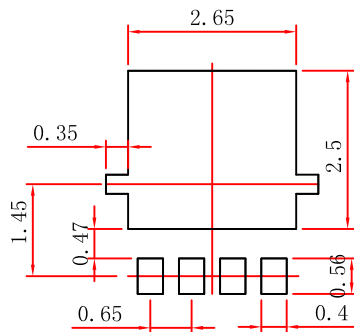


## PDFNWB3.3x3.3-8L Package Outline Dimensions



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	2.300	2.600	0.091	0.102
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°

## PDFNWB3.3x3.3-8L Suggested Pad Layout



**Note:**

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

**NOTICE**

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