

DFNWB3×3-8L Plastic-Encapsulate MOSFETS

CJAB20SN06 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	8mΩ@10V	20A
	9.7mΩ@4.5V	



DESCRIPTION

The CJAB20SN06 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

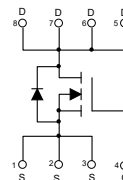
- SMPS and general purpose applications
- Uninterruptible Power Supply

MARKING



AB20SN06 = Part No.
 Solid dot=Pin1 indicator
 XX=Date Code

EQUIVALENT CIRCUIT



MAXIMUM RATINGS ($T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	20	A
Pulsed Drain Current	I_{DM}	50	A
Single Pulsed Avalanche Energy	$E_{AS}^{(1)}$	70	mJ
Power Dissipation	P_D	3.1	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	46	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-55 ~+150	$^{\circ}C$
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	$^{\circ}C$

(1).EAS condition: $V_{DD}=30V$, $L=0.3\text{ mH}$, $R_G=25\Omega$, Starting $T_J = 25^{\circ}C$

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

MOSFET ELECTRICAL CHARACTERISTICS

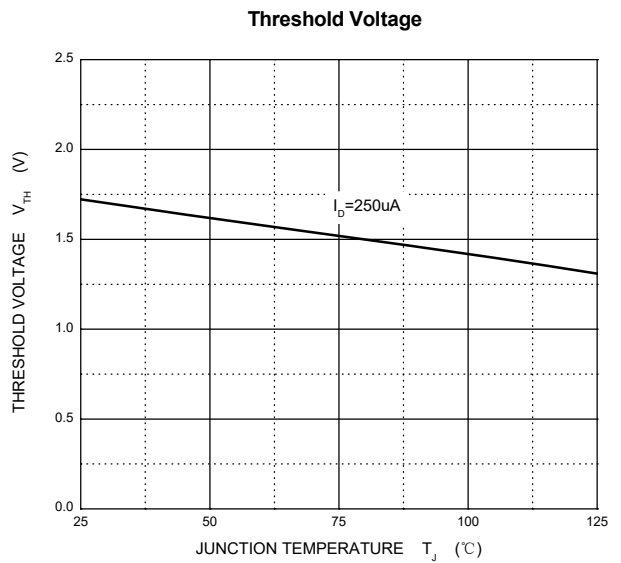
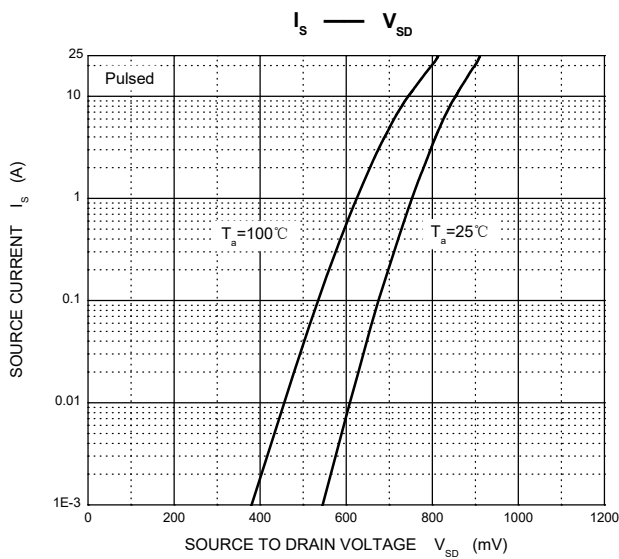
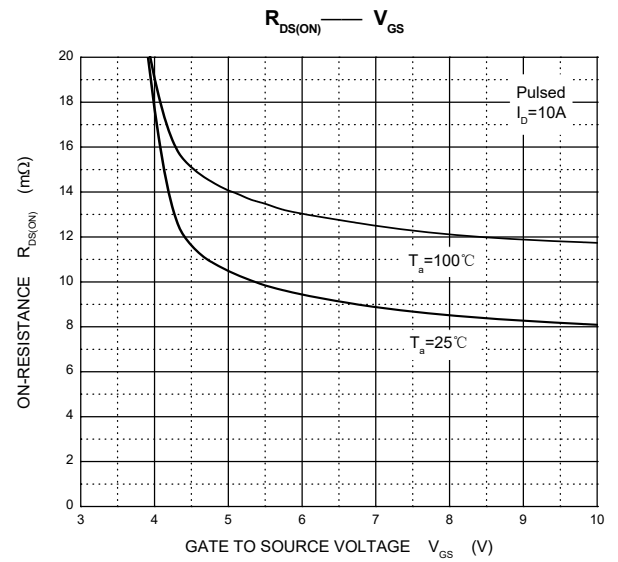
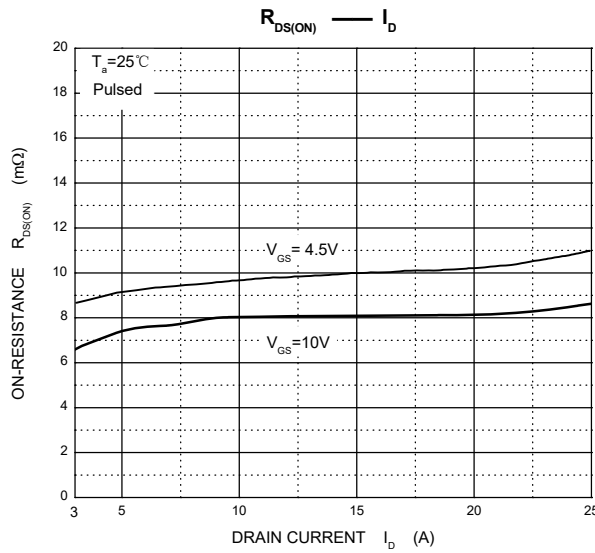
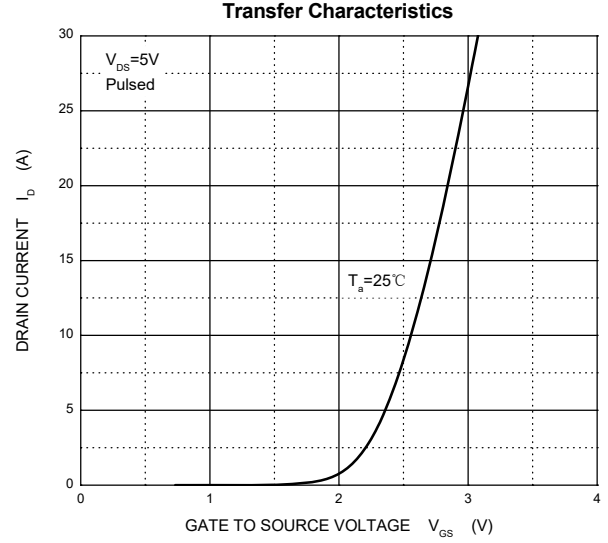
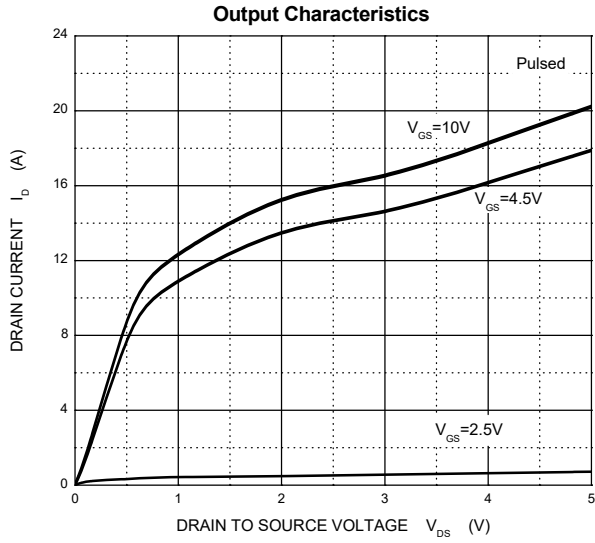
$T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$			0.3	μA
Gate-body leakage current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
On characteristics (note1)						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.1	1.7	2.5	V
Static drain-source on-state resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 12A$		8.0	9.0	m Ω
		$V_{GS} = 4.5V, I_D = 12A$		9.7	13.0	m Ω
Forward transconductance	g_{FS}	$V_{DS} = 5V, I_D = 12A$		70		S
Dynamic characteristics (note 2)						
Input capacitance	C_{iss}	$V_{DS} = 30V, V_{GS} = 0V,$ $f = 1MHz$		1691		pF
Output capacitance	C_{oss}			395		
Reverse transfer capacitance	C_{rss}			9		
Switching characteristics (note 2)						
Total gate charge	Q_g	$V_{DS} = 30V, V_{GS} = 10V,$ $I_D = 12A$		30	45	nC
Gate-source charge	Q_{gs}			3.5		
Gate-drain charge	Q_{gd}			6.5		
Turn-on delay time	$t_{d(on)}$	$V_{DS} = 30V, V_{GS} = 10V,$ $R_G = 10\Omega, I_D = 12A$		6		ns
Turn-on rise time	t_r			5		
Turn-off delay time	$t_{d(off)}$			29		
Turn-off fall time	t_f			7		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note1)	V_{SD}	$V_{GS} = 0V, I_S = 12A$		0.9	1.2	V
Continuous drain-source diode forward current	I_S				12	A
Pulsed drain-source diode forward current	I_{SM}				36	A
Reverse Recovery Time	t_{rr}	$V_R = 30V, I_F = 12A,$		50		ns
Reverse Recovery Charge	Q_{rr}	$dI/dt = 300A/\mu s$ (Note1)		120		nC

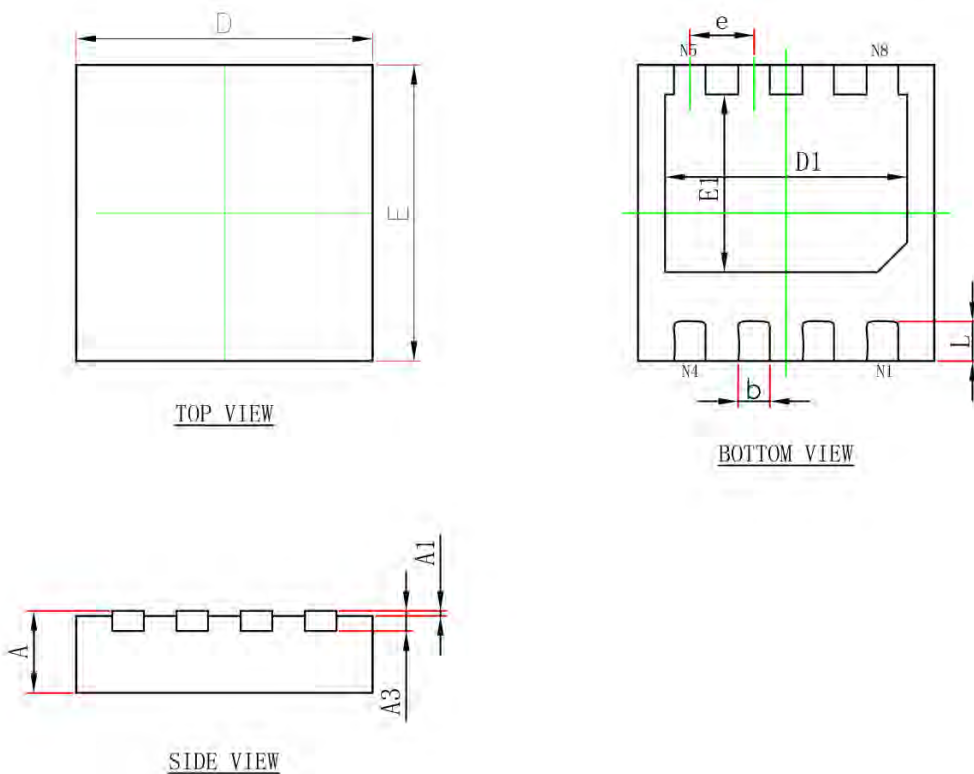
Notes:

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

Typical Characteristics



DFNWB3×3-8L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF		0.008REF	
D	2.924	3.076	0.115	0.121
E	2.924	3.076	0.115	0.121
D1	2.350	2.550	0.093	0.100
E1	1.700	1.900	0.067	0.075
k	0.200MIN.		0.008MIN.	
b	0.270	0.370	0.011	0.015
e	0.650TYP.		0.026TYP.	
L	0.324	0.476	0.013	0.019

NOTICE

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