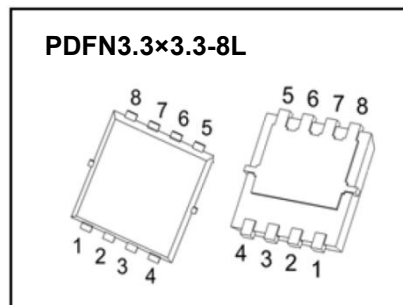




AD-CJAB35N03S Plastic-Encapsulated MOSFET

AD-CJAB35N03S N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on), typ}$	I_D
30V	5.2m Ω @ 10V	35A
	7.5m Ω @ 4.5V	



DESCRIPTION

The AD-CJAB35N03S 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

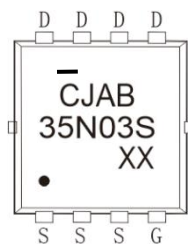
FEATURES

- Good stability and uniformity with high E_{AS}
- High density cell design for ultra-low $R_{DS(ON)}$
- Excellent package for good heat dissipation
- Fully characterized avalanche voltage and current
- AEC-Q101 qualified

APPLICATIONS

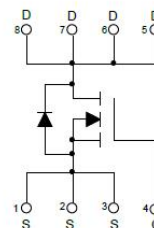
- High side switch in POL DC/DC converter
- Secondary side synchronous rectifier

MARKING



\bar{C} JAB35N03S = Part No.
 Solid dot = Pin1 indicator
 XX = Date code

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (T_j = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-source voltage	V _{DS}	30	V
Gate-source voltage	V _{GS}	±20	V
Continuous drain current	I _D ¹⁾	35	A
Pulsed drain current	I _{DM} ²⁾	120	A
Maximum power dissipation	P _D ¹⁾	25	W
Single pulsed avalanche energy	E _{AS} ³⁾	50	mJ
Thermal resistance from junction to case	R _{θJC} ¹⁾	5.0	°C/W
Thermal resistance from junction to ambient	R _{θJA} ⁶⁾	83.3	°C/W
Operating junction and storage temperature range	T _j , T _{stg}	-55 ~ 150	°C

ELECTRICAL CHARACTERISTICS (T_j = 25°C unless otherwise specified)

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Static characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30	-	-	V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V, T _J = 25°C	-	-	1.0	μA
		V _{DS} = 24V, V _{GS} = 0V, T _J = 125°C	-	-	100	
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V	-	-	±100	nA
Gate threshold voltage ⁴⁾	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.3	1.7	2.5	V
Drain-source on-state resistance ⁴⁾	R _{DS(on)}	V _{GS} = 10V, I _D = 10A	-	5.2	6.8	mΩ
		V _{GS} = 4.5V, I _D = 10A	-	7.5	10	
Dynamic characteristics⁵⁾						
Total gate charge	Q _g	V _{DS} = 15V, V _{GS} = 10V, I _D = 10A	-	24	-	nC
Gate-source charge	Q _{gs}		-	2.6	-	
Gate-drain charge	Q _{gd}		-	5.4	-	
Input capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz	-	1100	-	pF
Output capacitance	C _{oss}		-	174	-	
Reverse transfer capacitance	C _{rss}		-	143	-	
Gate resistance	R _g	f = 1MHz	-	4.6	-	Ω
Switching parameters⁵⁾						
Turn-on delay time	t _{d(on)}	V _{GS} = 10V, I _D = 11A V _{DS} = 15V, R _G = 10Ω	-	25	-	ns
Turn-on rise time	t _r		-	40	-	
Turn-off delay time	t _{d(off)}		-	90	-	
Turn-off fall time	t _f		-	57	-	
Source-Drain Diode characteristics						
Body diode voltage	V _{SD} ⁴⁾	I _S = 12A, V _{GS} = 0V	-	-	1.2	V
Continuous drain-source diode forward current	I _S ¹⁾		-	-	35	A
Pulsed drain-source diode forward current	I _{SM} ²⁾		-	-	120	A

1) T_c = 25°C limited only by maximum temperature allowed.

2) PW ≤ 10μs, Duty cycles ≤ 1%.

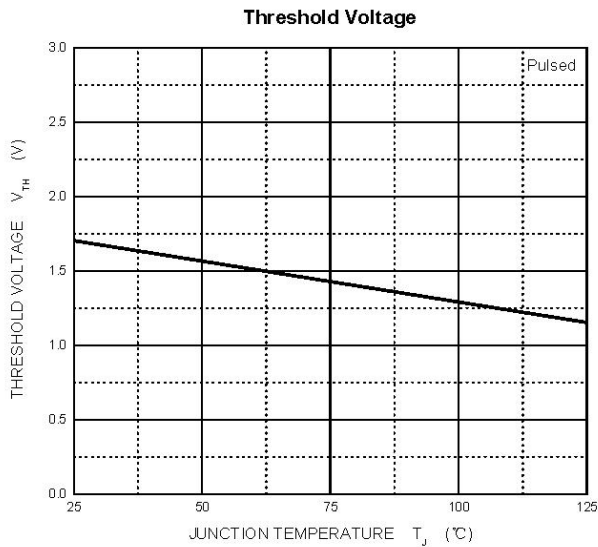
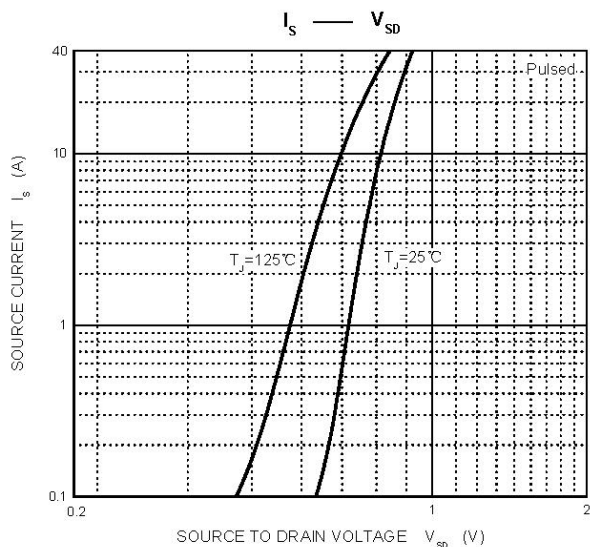
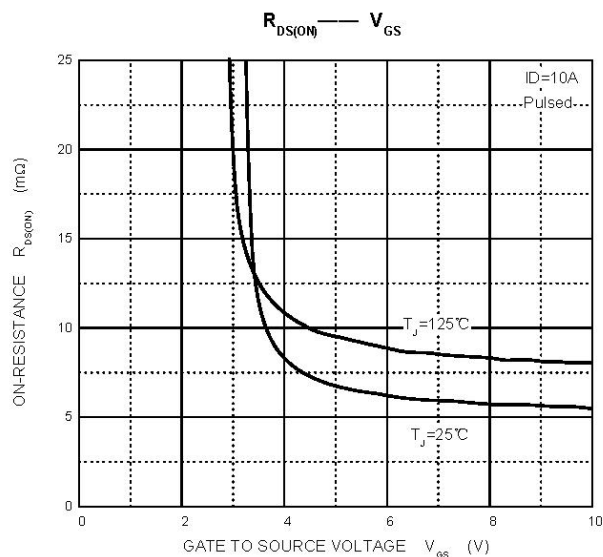
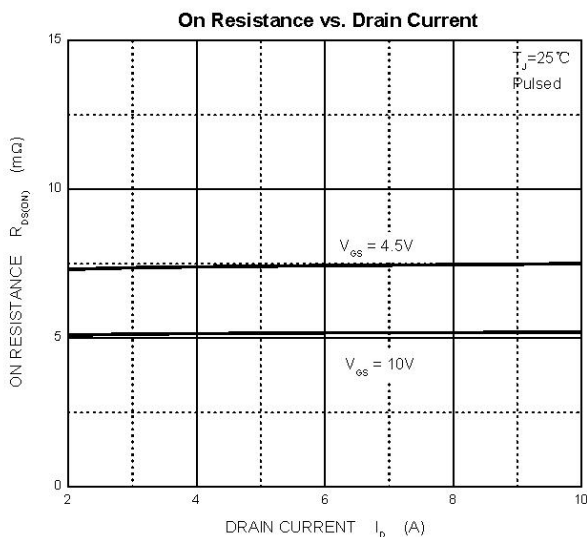
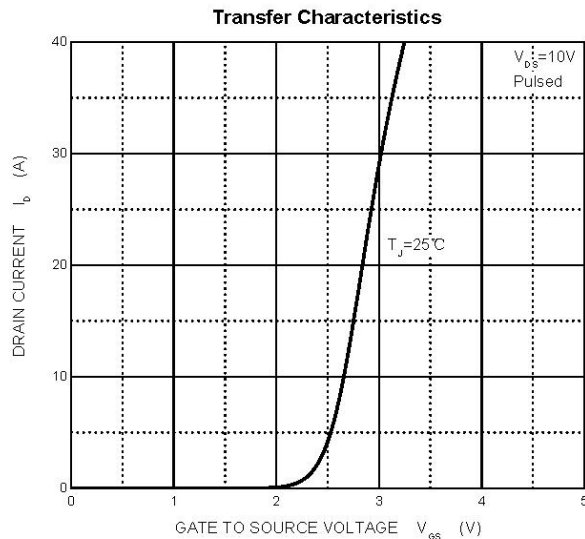
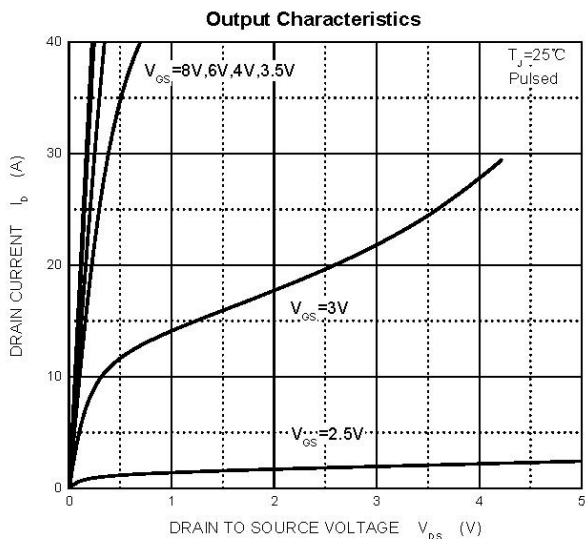
3) EAS condition: VDD = 15V, VGS = 10V, L = 0.1mH, R_G = 25Ω Starting T_J = 25°C.

4)Pulse Test : Pulse Width \leq 300 μ s, duty cycle \leq 2%.

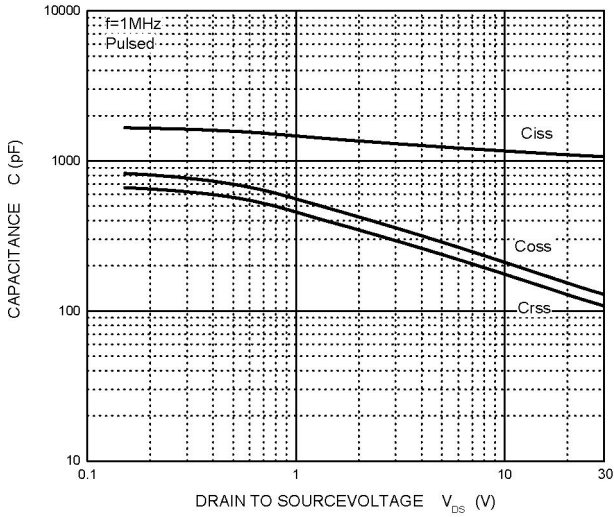
5)Guaranteed by design, not subject to production.

6)The value of $R_{\theta JA}$ is measured with the device mounted on 1 in² FR-4 board with 2oz. Copper, in a still air environment with $T_a=25$ °C.

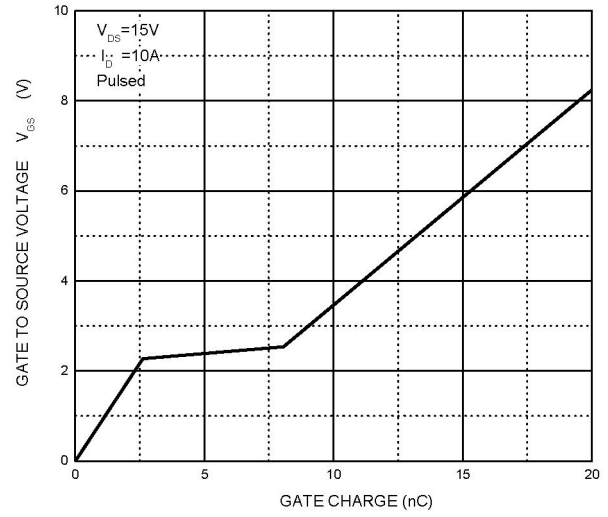
TYPICAL CHARACTERISTICS



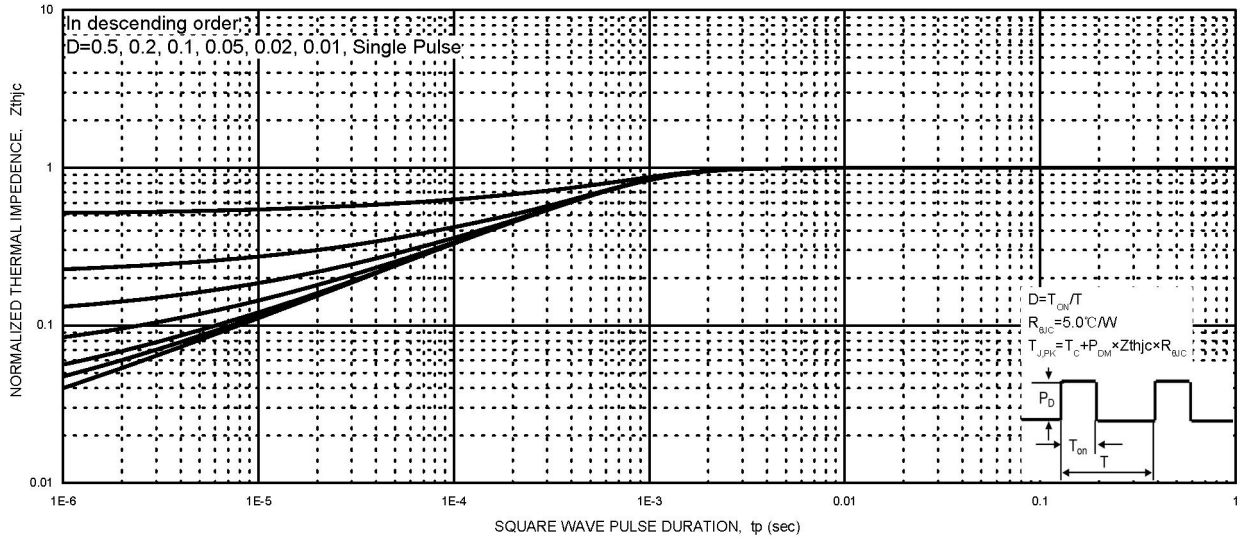
Capacitances



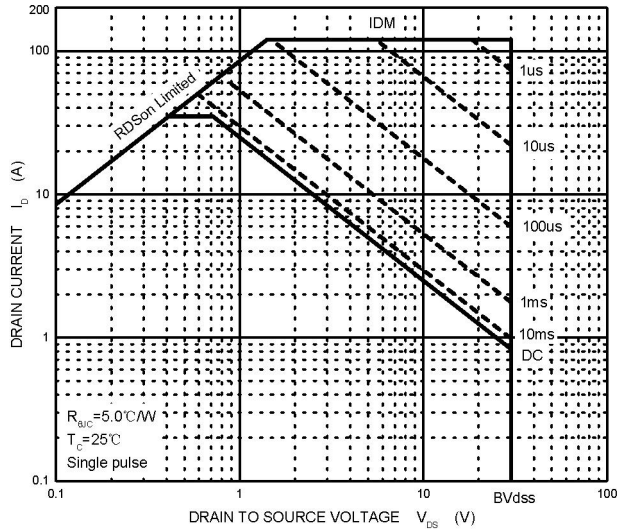
Gate Charge



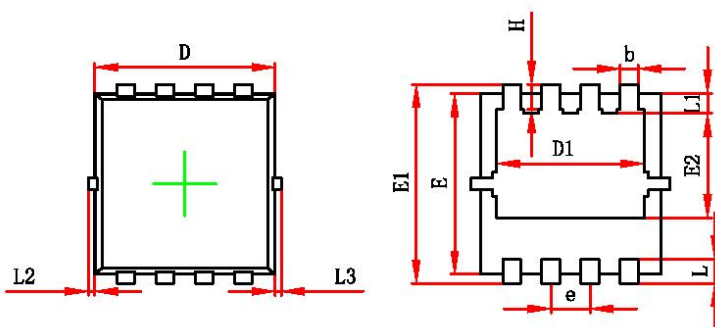
NORMALIZED TRANSIENT THERMAL IMPEDANCE



MAXIMUM FORWARD BIASED SAFE OPERATING AREA

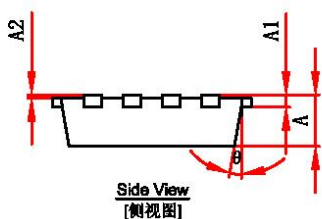


PDFN3.3×3.3-8L PACKAGE OUTLINE DIMENSIONS



Top View
[顶视图]

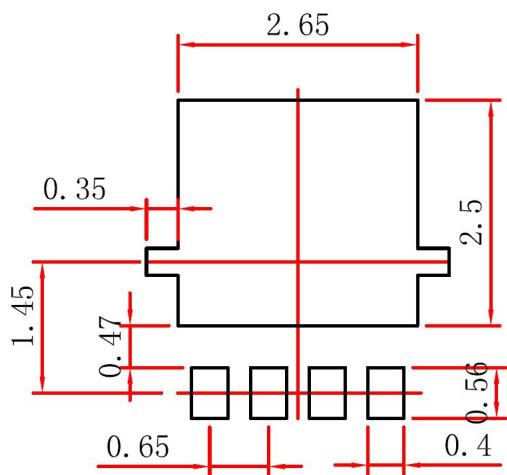
Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.900	0.026	0.035
A1	0.140	0.250	0.006	0.010
A2	0.000	0.050	0.000	0.002
D	2.900	3.300	0.118	0.130
D1	2.300	2.600	0.091	0.102
E	2.850	3.150	0.112	0.124
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	0.021	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0.000	0.150	0.000	0.006
L3	0.000	0.150	0.000	0.006
H	0.310	0.630	0.012	0.025
θ	8°	13°	8°	13°

PDFN3.3×3.3-8L SUGGESTED PAD LAYOUT

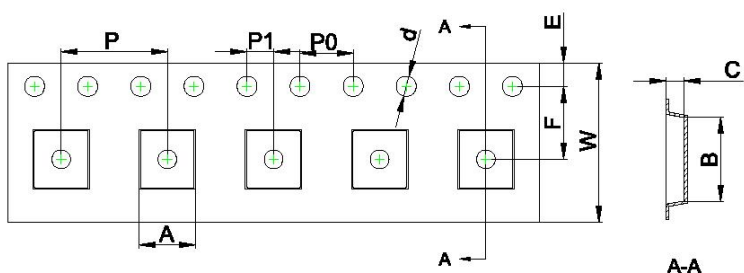


Note:

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

PDFN3.3x3.3-8L TAPE AND REEL

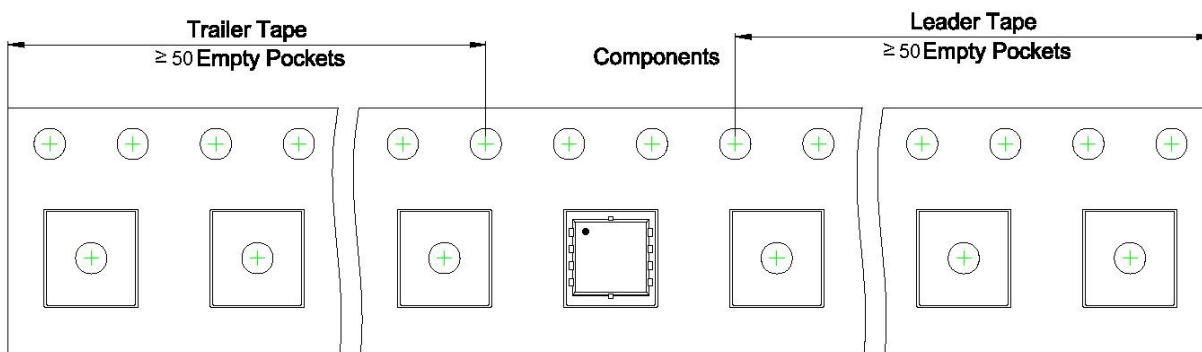
PDFN3.3x3.3-8L Embossed Carrier Tape



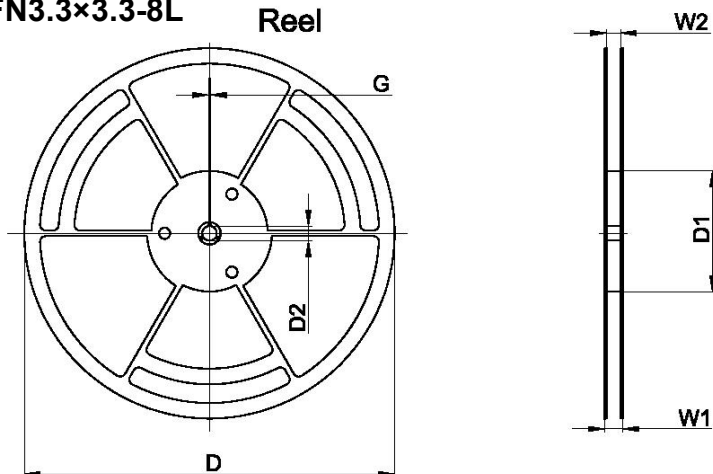
Packaging Description:
PDFNWB3.3x3.3-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed 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
PDFNWB3.3x3.3-8L	3.55	3.55	1.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

PDFN3.3x3.3-8L Tape Leader and Trailer



PDFN3.3x3.3-8L 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	340x336x29	50,000 pcs	353x346x365

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