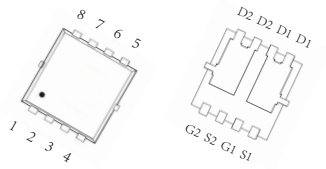
SZCJ

DFNWB3.3×3.3-8L-B Plastic-Encapsulate MOSFET

N-Channel + P-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)\ TYP}$	I_D
30V	8.5mΩ@10V	30A
	10.7mΩ@4.5V	
-30V	28mΩ@-10V	-20A
	35mΩ@-4.5V	

PDFNWB3.3×3.3-8L-B



DESCRIPTION

The CJAB2003A 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

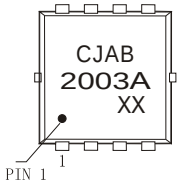
FEATURES

- 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

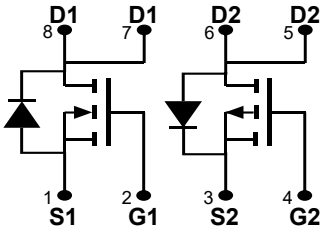


CJAB2003A=Part No.

Solid dot=Pin1 indicator

XX=Date Code

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Limit	Unit
N-MOSFET			
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	Ñ20	V
Continuous Drain Current	I_D ①	30	A
Pulsed Drain Current	I_{DM} ②	100	A
Single Pulsed Avalanche Energy	E_{AS} ③	72	mJ
P-MOSFET			
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	Ñ20	V
Continuous Drain Current	I_D ①	-20	A
Pulsed Drain Current	I_{DM} ②	-80	A
Single Pulsed Avalanche Energy	E_{AS} ④	51	mJ
Temperature and Thermal Resistance			
Thermal Resistance from Junction to Ambient	R_{dJA} ⑦	100	℃/W
Thermal Resistance from Junction to Case	R_{dJC} ①	2.3	℃/W
Power Dissipation	P_D ①	54.3	W
Operating Junction and Storage Temperature Range	T_J ,T_{stg}	-55~+150	℃

MOSFET ELECTRICAL CHARACTERISTICS

N-Channel MOSFET ELECTRICAL CHARACTERISTICS, T_a=25 ℃ 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 =250ÕA	30	–	–	V
Zero gate voltage drain current	I_{DSS}	V_{DS} =24V,V_{GS}=0V	–	–	1.0	ÕA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =Ñ20V	–	–	Ñ100	nA
On characteristics ⑤						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250ÕA	1.0	1.8	2.5	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =8A	–	8.5	11	mÝ
		V_{GS} =4.5V, I_D =6A	–	10.7	16	mÝ
Dynamic characteristics ⑥						
Input capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V, f =1MHz	–	1150	–	pF
Output capacitance	C_{oss}		szcjsemi.com	165	szcjsemi.com	
Reverse transfer capacitance	C_{rss}		szcjsemi.com	99	szcjsemi.com	
Gate resistance	R_g	f =1MHz	szcjsemi.com	6.0	szcjsemi.com	Ω
Switching characteristics ⑥						
Total gate charge	Q_g	V_{GS}=4.5V,V_{DS}=15V,I_D=8A	szcjsemi.com	8.5	szcjsemi.com	
Total gate charge	Q_g	V_{GS}=10V,V_{DS}=15V,I_D=8A	szcjsemi.com	17.6	–	nC
Gate-source charge	Q_{gs}		–	3.15	–	
Gate-drain charge	Q_{gd}		–	3.21	–	
Turn-on delay time	$t_{d(on)}$	V_{DD}=15V, R_L=1.5q, V_{GS}=10V, R_{GEN}=10q	–	13	–	ns
Turn-on rise time	t_r		–	140	–	
Turn-off delay time	$t_{d(off)}$		–	38	–	
Turn-off fall time	t_f		–	85	–	
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	V_{SD} ⑤	V_{GS} =0V, I_S=8A	–	–	1.2	V
Continuous drain-source diode forward current	I_S ①		–		30	A
Pulsed drain-source diode forward current	I_{SM} ②		–		100	A

MOSFET ELECTRICAL CHARACTERISTICS

P-Channel MOSFET ELECTRICAL CHARACTERISTICS, T_a=25 ℃ 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 = -250ÕA	-30	–		V–
Zero gate voltage drain current	I_{DSS}	V_{DS} =-24V,V_{GS}=0V	–	–	-1.0	ÕA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =Ñ20V	–	–	Ñ100	nA
On characteristics ⑤						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250ÕA	-1.0	-1.5	-2.5	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-8A	–	28	36	mÝ
		V_{GS} =-4.5V, I_D =-6A	–	35	52	
Dynamic characteristics ⑥						
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 ⑥						
Total gate charge	szcjsemi.com	V_{GS}=-4.5V,V_{DS}=-15V,I_D=-8A	szcjsemi.com	szcjsemi.com	szcjsemi.com	szcjsemi.com
Total gate charge	Q_g	V_{GS}=-10V,V_{DS}=-15V, I_D=-8A	–	17	–	nC
Gate-source charge	Q_{gs}		–	4.15	–	
Gate-drain charge	Q_{gd}		–	6	–	
Turn-on delay time	$t_{d(on)}$	V_{DD}=-15V,R_L=5q, V_{GS}=-10V, R_{GEN}=10q	–	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} ⑤	V_{GS} =0V, I_S=-5A	–	–	-1.2	V
Continuous drain-source diode forward current	I_S ①		–	–	-20	A
Pulsed drain-source diode forward current	I_{SM} ②		–	–	-80	A

Notes:

1.T_C=25℃ Limited only by maximum temperature allowed.

2.P_W≤10μs, Duty cycle≤1%.

3.EAS condition: VDD=15V,VGS=10V, L=0.5mH, Rg=25Ω Starting T_J = 25℃.

4.EAS condition: VDD=-15V,VGS=-10V, L=0.5mH, Rg=25Ω Starting T_J = 25℃.

5.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

6.Guaranteed by design, not subject to production.

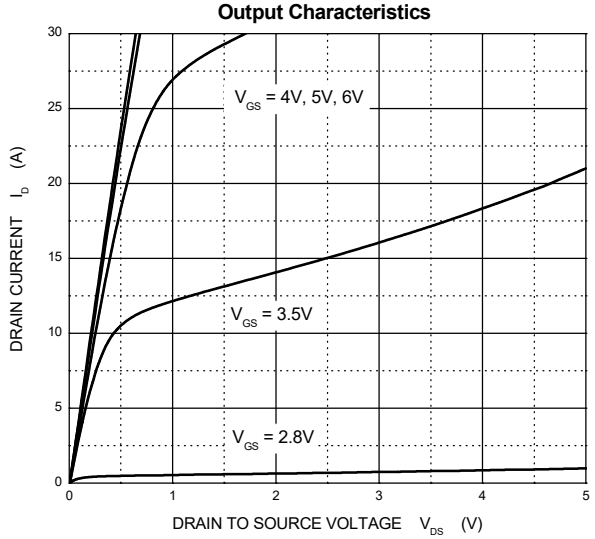
7.The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 1oz. Copper, in a still air environment with T_a=25℃.

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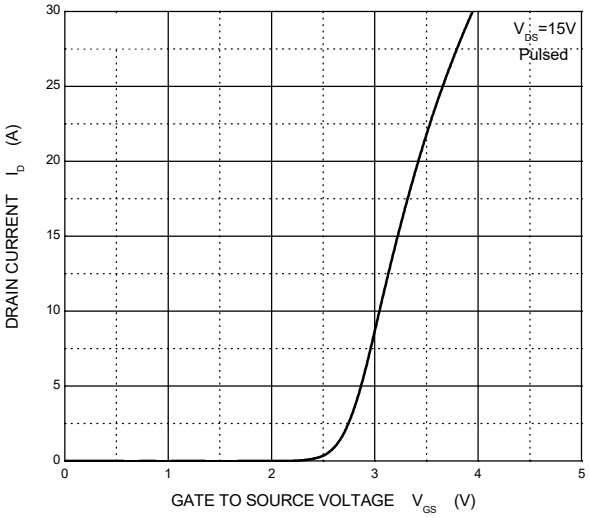
Typical Electrical and Thermal Characteristics (T_j=25 ℃)

N-Channel MOS

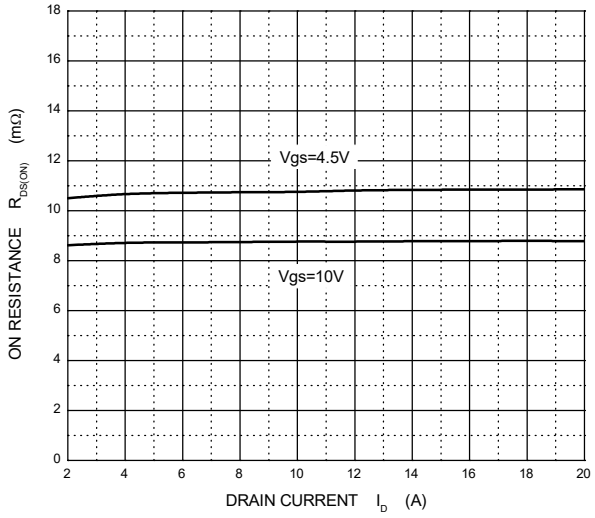
Output Characteristics



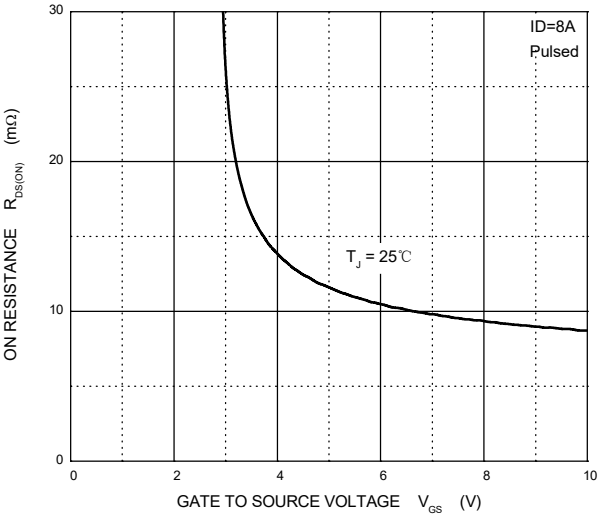
Transfer Characteristics



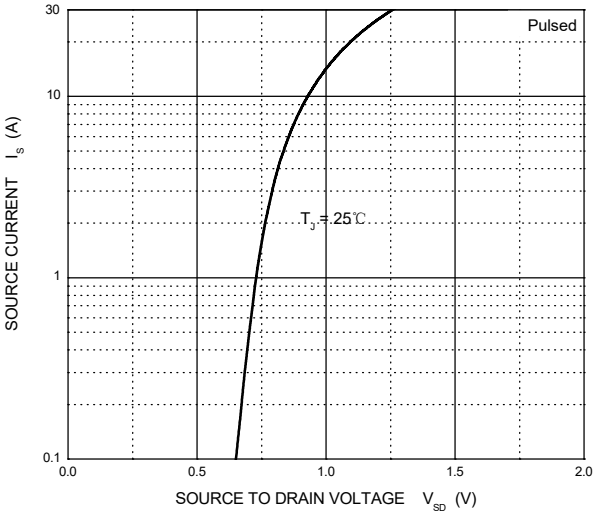
On Resistance vs. Drain Current



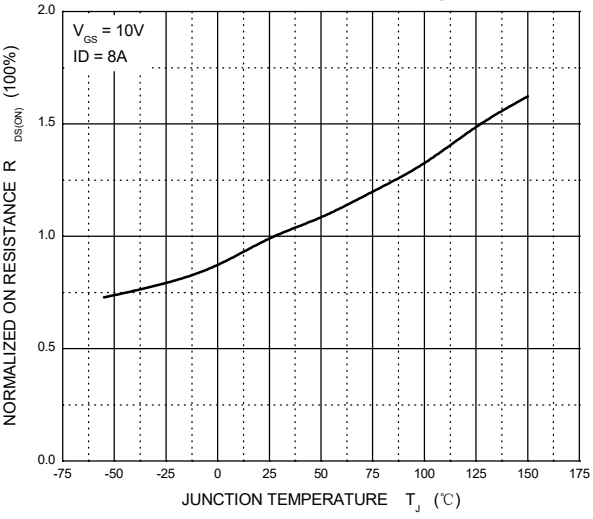
On Resistance vs. Gate-Source Bias



Source-Drain Diode Forward Characteristics



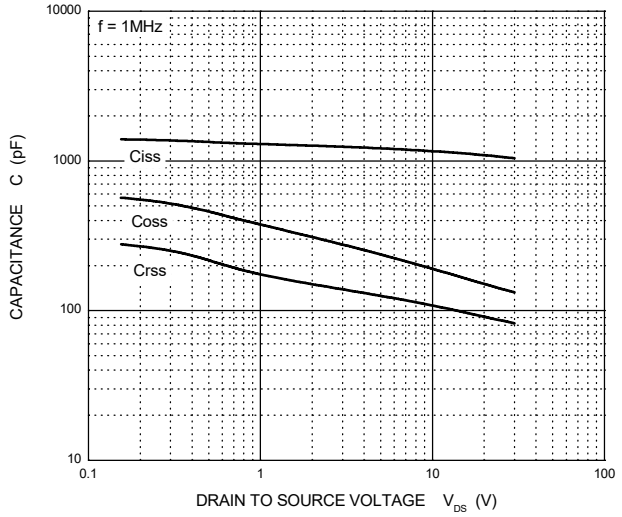
On Resistance vs. Junction Temperature



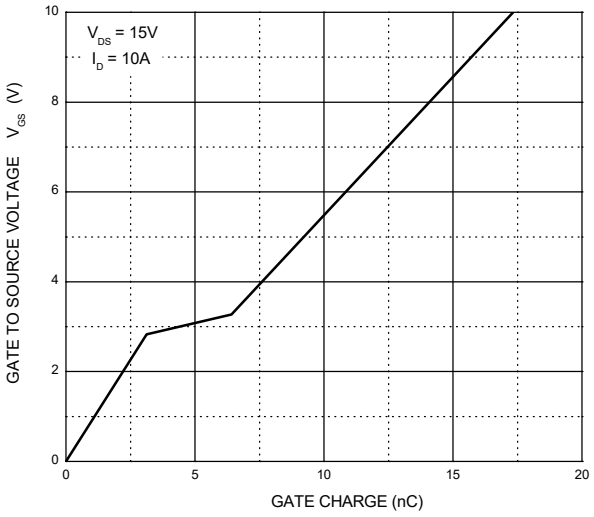
Typical Characteristics (T_j=25 ℃)

N-Channel MOS

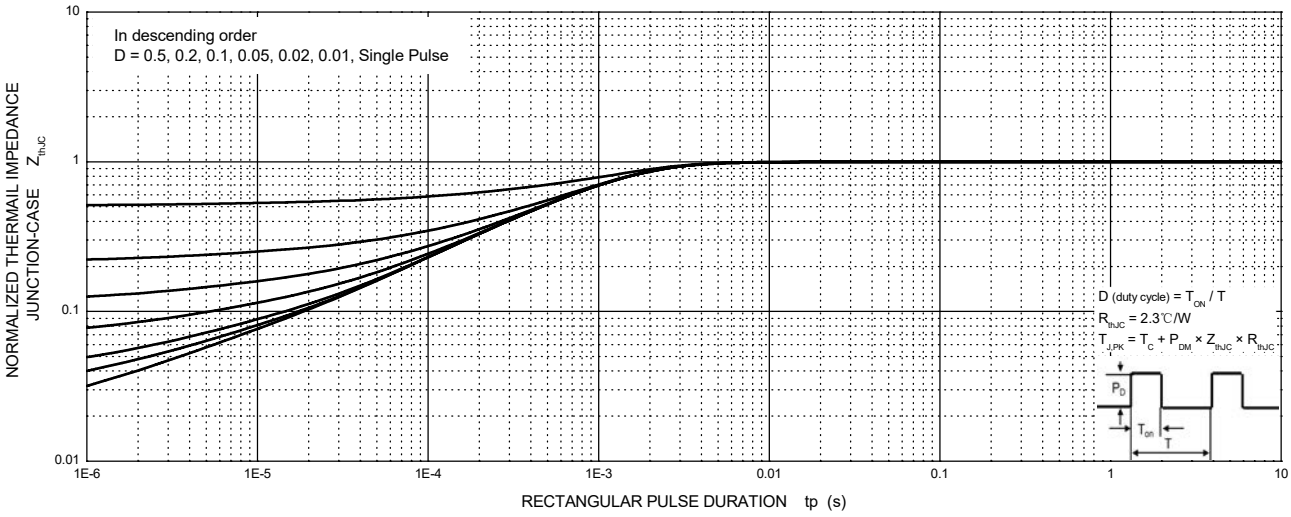
Typical Capacitances



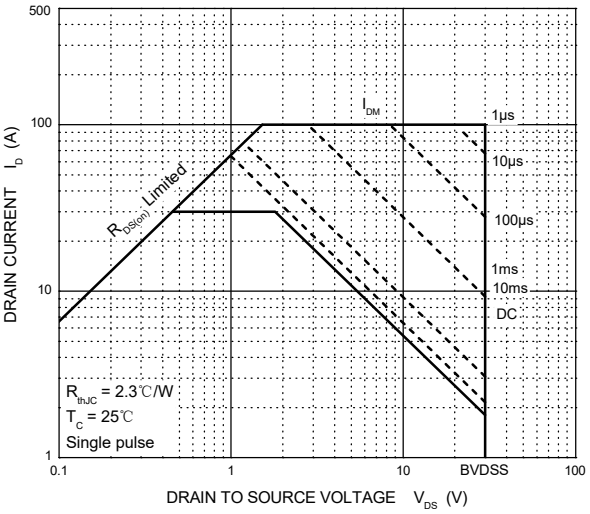
Gate Charge



Transient Thermal Impedance, Junction-Case



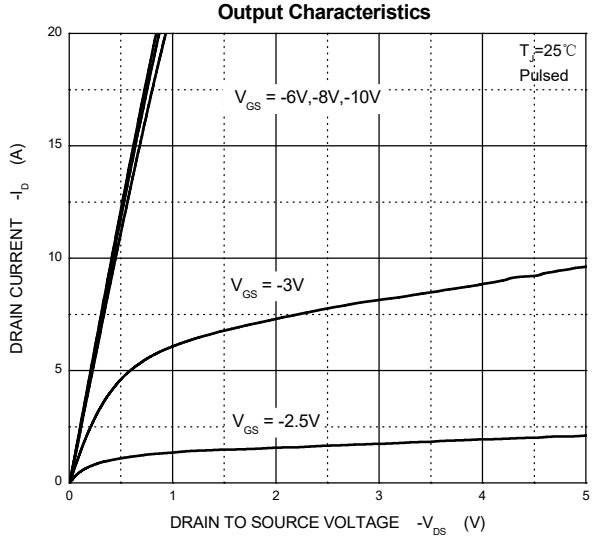
Maximum Safe Operating Area



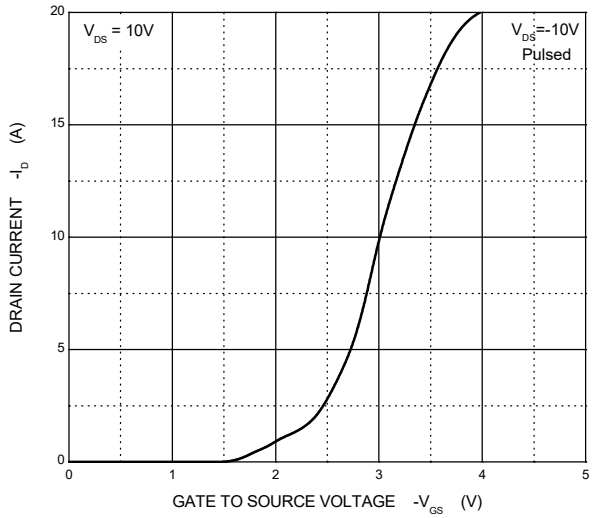
Typical Electrical and Thermal Characteristics (T_j=25℃)

P-Channel MOS

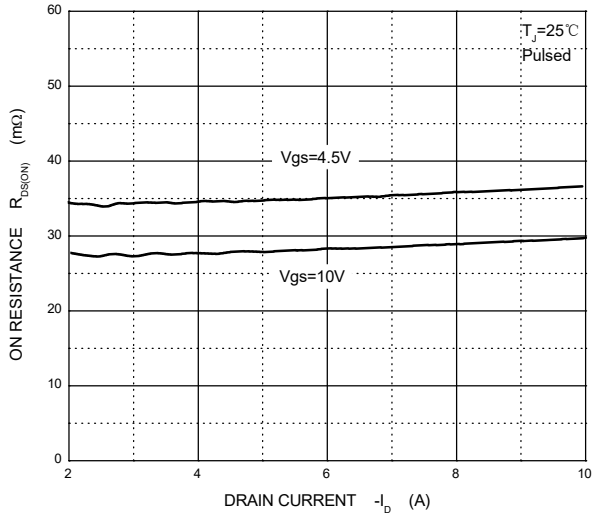
Output Characteristics



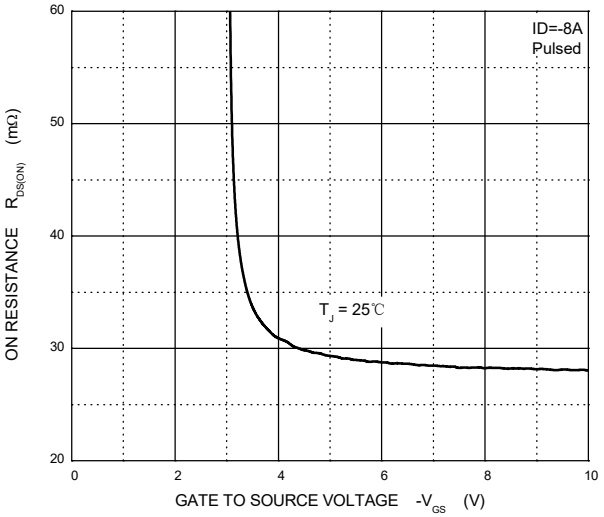
Transfer Characteristics



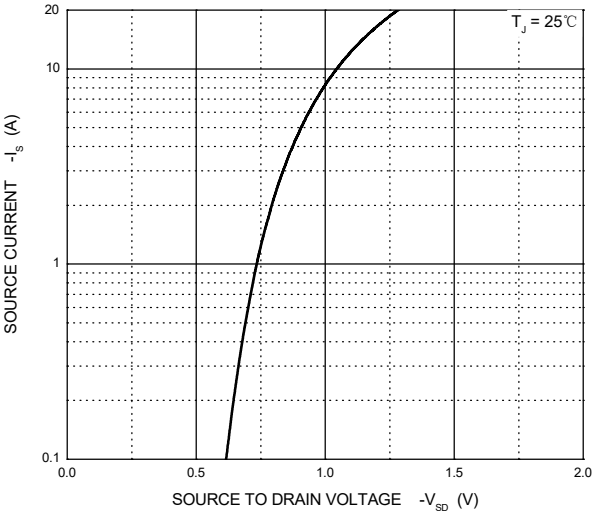
On Resistance vs. Drain Current



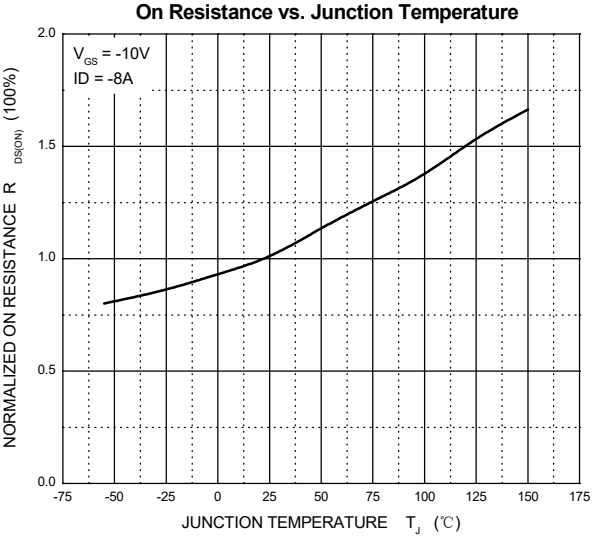
On Resistance vs. Gate-Source Bias



Source-Drain Diode Forward Characteristics



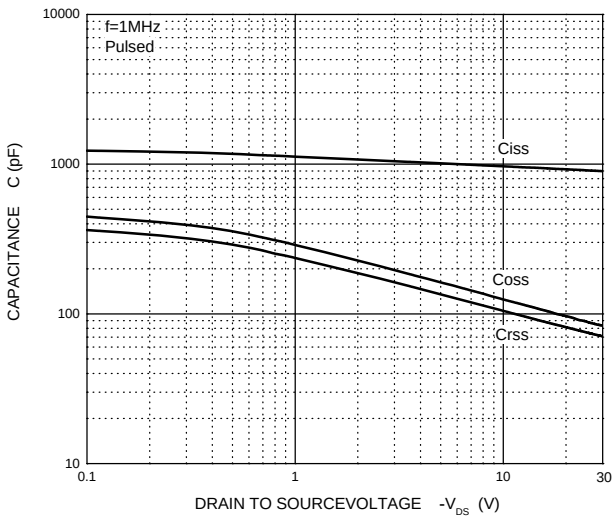
On Resistance vs. Junction Temperature



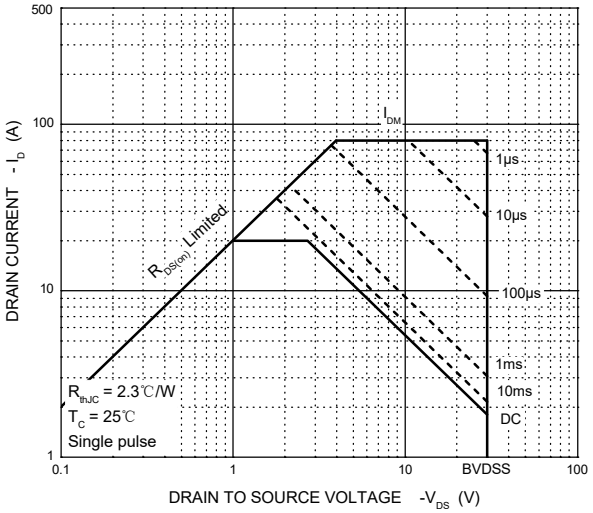
Typical Characteristics (T_j=25°C)

P-Channel MOS

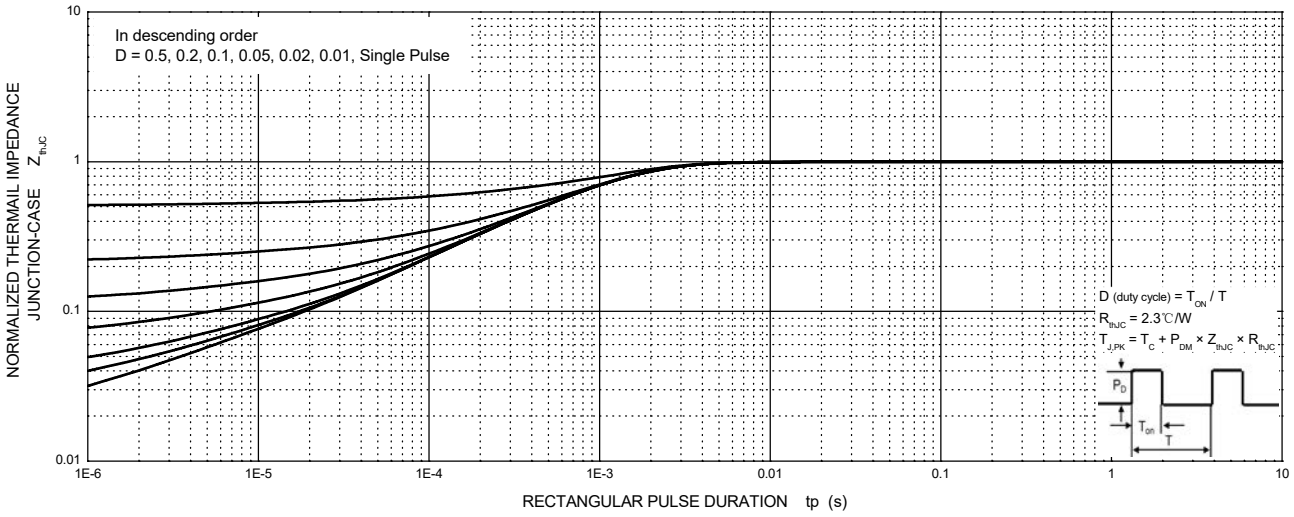
Capacitances



Maximum Safe Operating Area

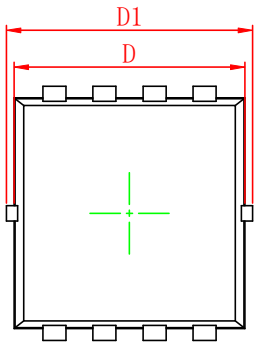


Transient Thermal Impedance, Junction-Case

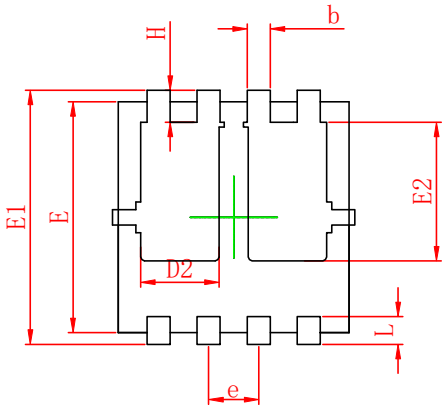


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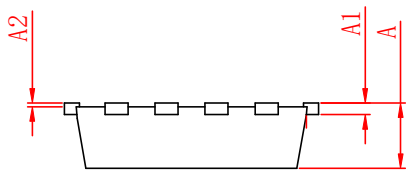
PDFNWB3.3×3.3-8L-B PACKAGE OUTLINE DIMENSIONS



Top View
[顶视图]



Bottom View
[背视图]

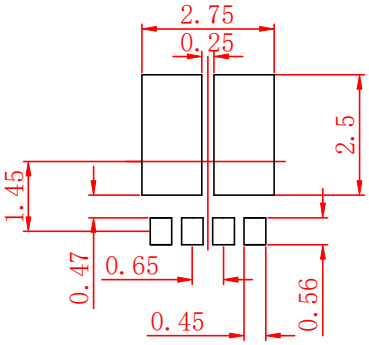


Side View
[侧视图]

Symbol	Dimensions In MillimetersDimensions In Inches			
	Min.	Max.	Min.	Max.
A	0.65	0.90	0.026	0.035
A1	0.15 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.90	3.20	0.114	0.126
D1	3.00	3.40	0.118	0.134
D2	0.90	1.15	0.035	0.045
E	2.90	3.20	0.114	0.126
E1	3.00	3.40	0.118	0.134
E2	1.60	1.90	0.063	0.075
b	0.20	0.40	0.008	0.016
e	0.65 BSC.		0.026 BSC.	
L	0.20	0.50	0.008	0.020
H	0.32	0.52	0.012	0.020

Notes：
1 Dimensions exclusive of mold gate burrs.
2 Dimensions exclusive of mold flash and cutting burrs.

PDFNWB3.3×3.3-8L-B Suggested Pad Layout

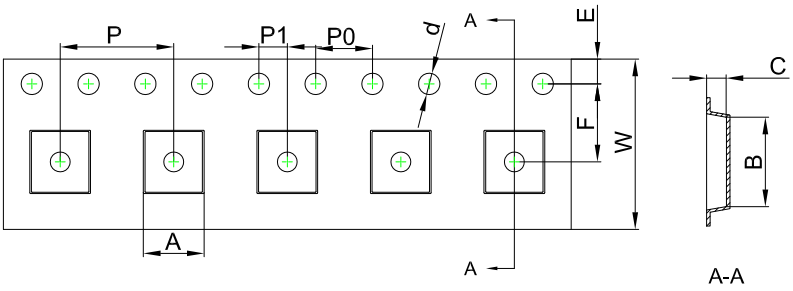


Notes：
1 Controlling dimension：in millimeters.
2 General tolerance:±0.05mm.
2 The pad layout is for referance purpose only.

NOTICE

SZCJ reservesthe right to make modifications,enhancements,improvements,corrections or other changes without further notice to any product herein.SZCJ 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

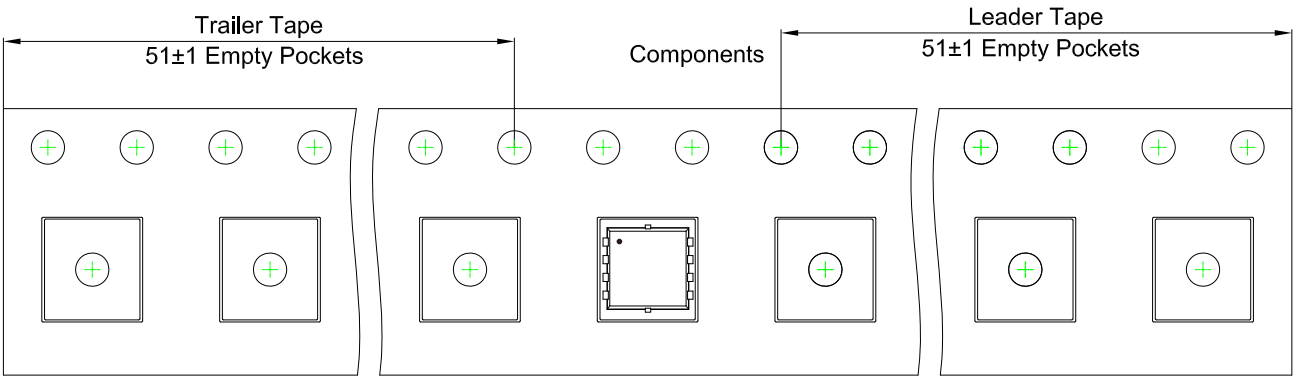


Packaging Description:

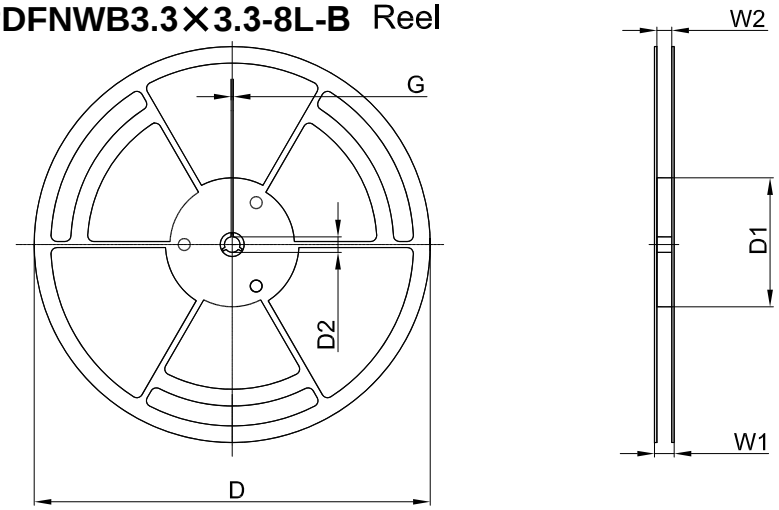
PDFNWB3.3×3.3-8L-B parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled 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	10,000 pcs	340×336×29	50,000 pcs	353×346×365