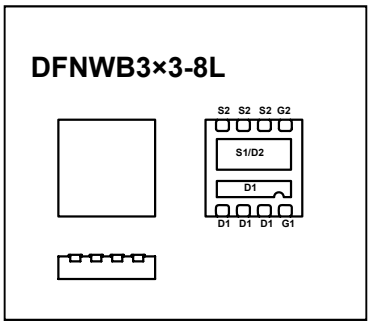
SZCJ

Shenzhen Changji Semiconductor Co., LTD.

DFNWB3×3-8L Plastic-Encapsulate MOSFETS

CJBM3020 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$TYP	I_D
30 V	8.8mΩ@10V	20A
	15mΩ@4.5V	



DESCRIPTION

The CJBM3020 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
- 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

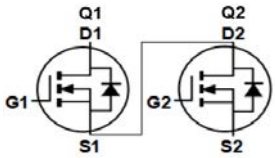


BM3020=Part No. Solid

dot=Pin1 indicator

XX=Code

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D①	20	A
Pulsed Drain Current	I_{DM}②	80	A
Single Pulsed Avalanche Energy	E_{AS}③	48	mJ
Power Dissipation	P_D①	24.5	W
Operating Junction and Storage Temperature Range	T_J ,T_{stg}	-55~+150	℃

Thermal Characteristics

Parameter	Symbol	Value		Unit
		Typ	Max	
Thermal Resistance from Junction to Case	$R_{\theta JC}$	3.4	5.1	℃/W
Thermal Resistance from Junction to Ambient (t≤10s)	$R_{\theta JA}$⑥	56	83.3	℃/W

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

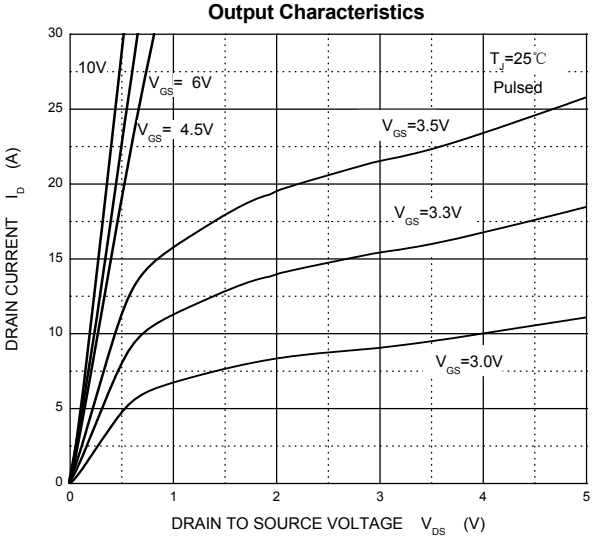
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =24V, V_{GS} =0V			1	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
On characteristics ④						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.0	1.6	3.0	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =12A		8.8	14	mΩ
		V_{GS} =4.5V, I_D =10A		15	20	mΩ
Forward transconductance	g_{FS}	V_{DS} =5V, I_D =10A		20		S
Dynamic characteristics ④⑤						
Input capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V, f =1MHz		999		pF
Output capacitance	C_{oss}			145		
Reverse transfer capacitance	C_{rss}			132		
Switching characteristics ④⑤						
Total gate charge	Q_g	V_{DS}=15V, V_{GS}=10V, I_D=14A		15		nC
Gate-source charge	Q_{gs}			2.6		
Gate-drain charge	Q_{gd}			5.3		
Turn-on delay time	$t_{d(on)}$	V_{DD}=15V,V_{GS}=10V, R_L=1.2Ω,R_{GEN}=3Ω		6.2		ns
Turn-on rise time	t_r			5.3		
Turn-off delay time	$t_{d(off)}$			43		
Turn-off fall time	t_f			7.1		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	V_{SD} ④	V_{GS} =0V, I_S=10A			1.2	V
Continuous drain-source diode forward current	I_S ①				20	A

Notes:

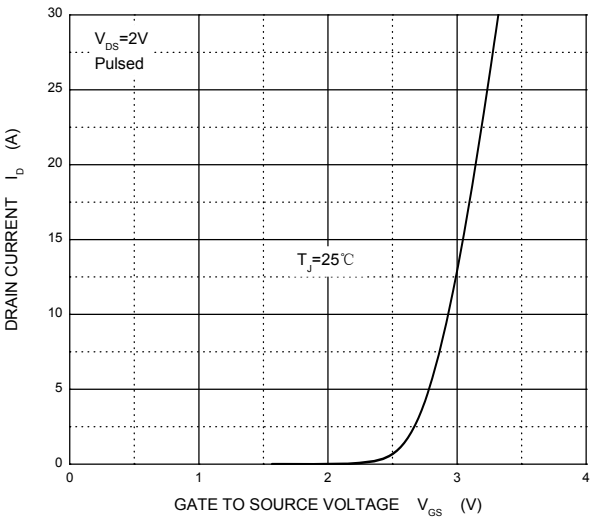
1.T_C=25℃ Limited only by maximum temperature allowed.
2.P_W≤10μs, Duty cycle≤1%.
3.EAS condition: V_{DD}=15V,V_{GS}=10V, L=0.1mH, Rg=25Ω Starting T_J = 25°℃.
4.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.
5.Guaranteed by design, not subject to production.
6.The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz. Copper, in a still air environment with T_a=25 ℃.

Typical Characteristics

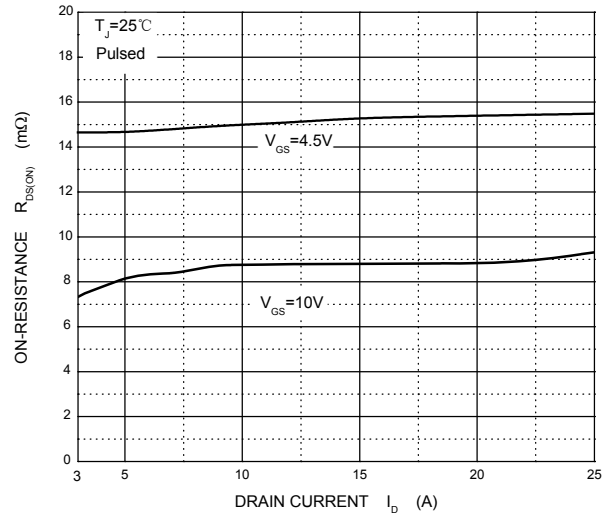
Output Characteristics



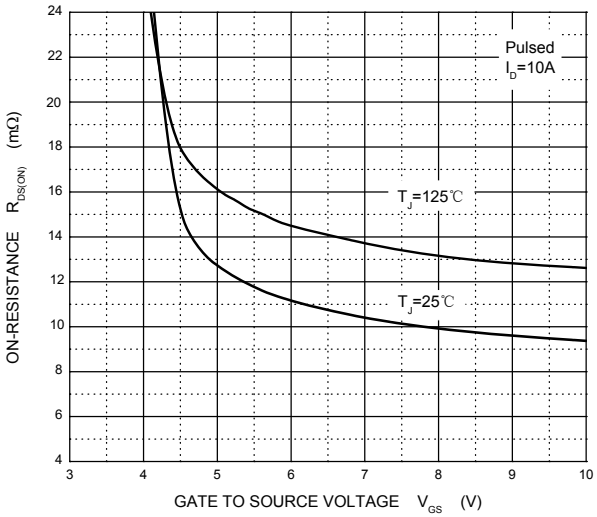
Transfer Characteristics



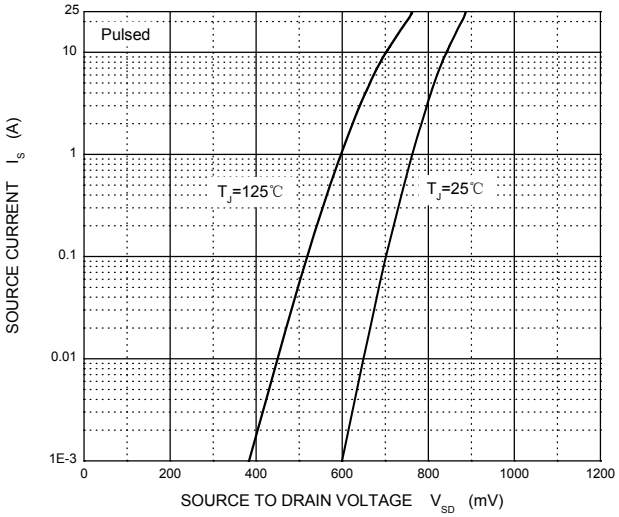
$R_{DS(ON)}$ —— I_D



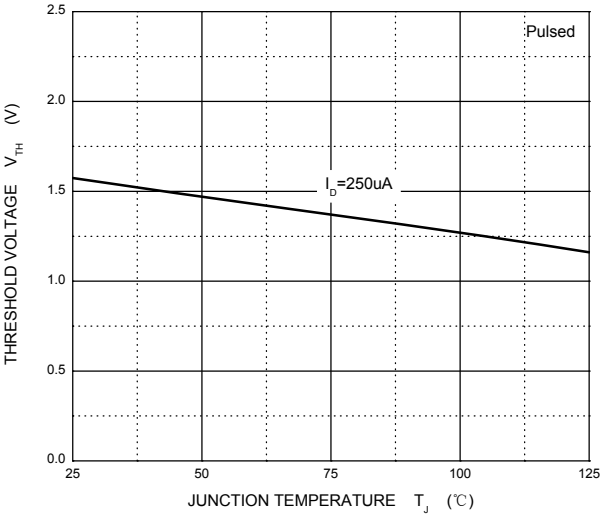
$R_{DS(ON)}$—— V_{GS}



I_S —— V_{SD}

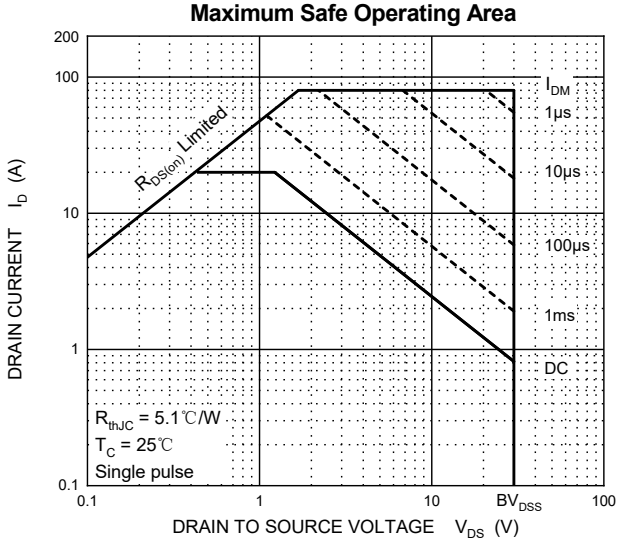


Threshold Voltage

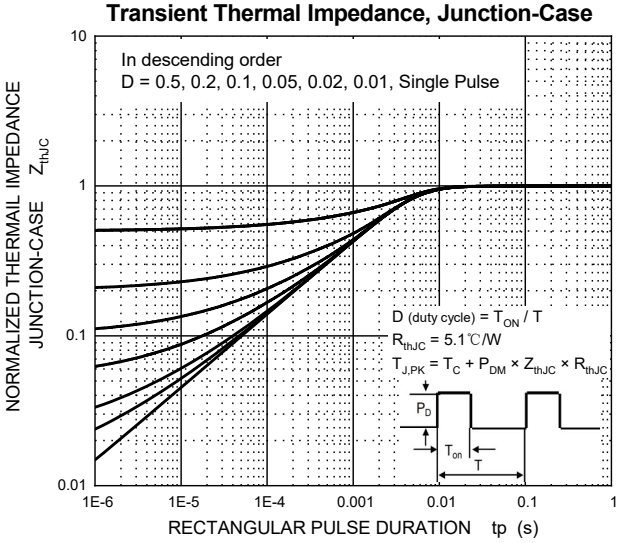


Typical Characteristics

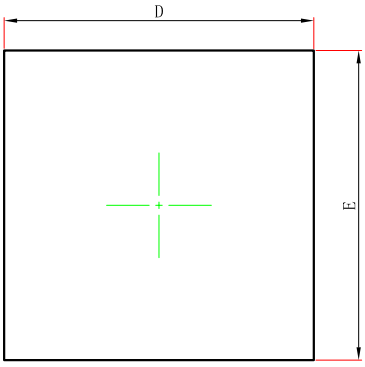
Maximum Safe Operating Area



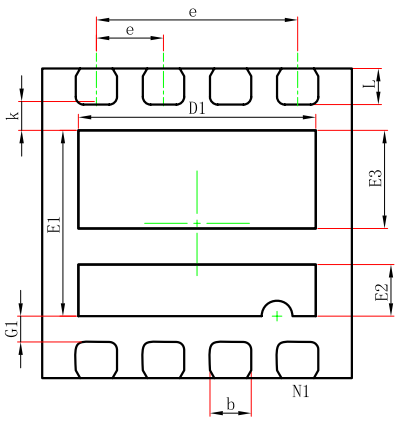
Transient Thermal Impedance, Junction-Case



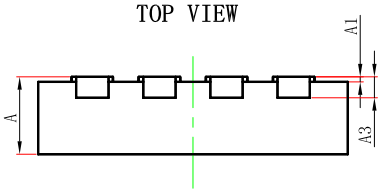
DFNWB3×3-8L-E Package Outline Dimensions



TOP VIEW



BOTTOM VIEW

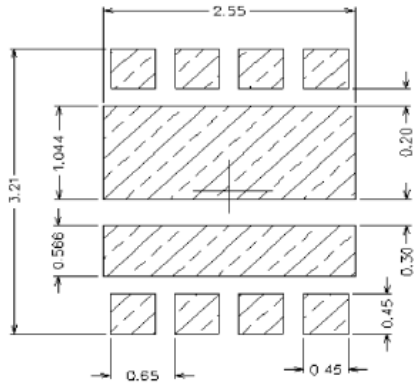


SIDE VIEW

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	2.950	3.050	0.116	0.120
E	2.950	3.050	0.116	0.120
D1	2.250	2.350	0.089	0.093
E1	1.700	1.900	0.067	0.075
E2	0.450	0.550	0.018	0.022
E3	0.900	1.000	0.035	0.039
k	0.200	0.300	0.008	0.012
G1	0.200	0.300	0.008	0.012
b	0.350	0.450	0.014	0.018
e	0.650BSC		0.026BSC	
e1	1.95BSC		0.077BSC	
L	0.300	0.400	0.012	0.016

DFNWB3×3-8L Suggested Pad Layout

RECOMMENDED LAND PATTERN

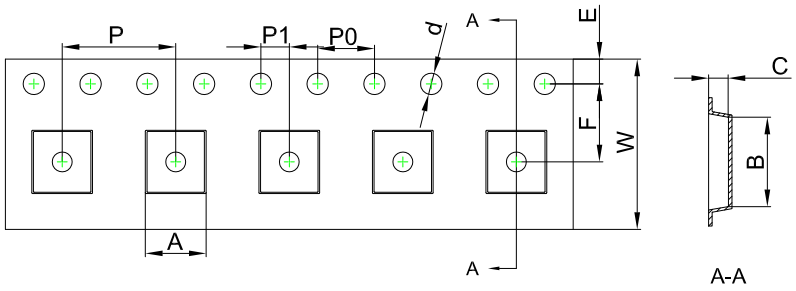


Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.050mm.
3.The pad layout is for reference purposes only.

NOTICE

SZCJ reserves the right to make modifications,enhan nts,improvements,corrections or other es without further notice to any product herein. SZCJ does not assume any liability arising out of the application or use of any product described h

DFNWB3×3-8L Embossed Carrier Tape

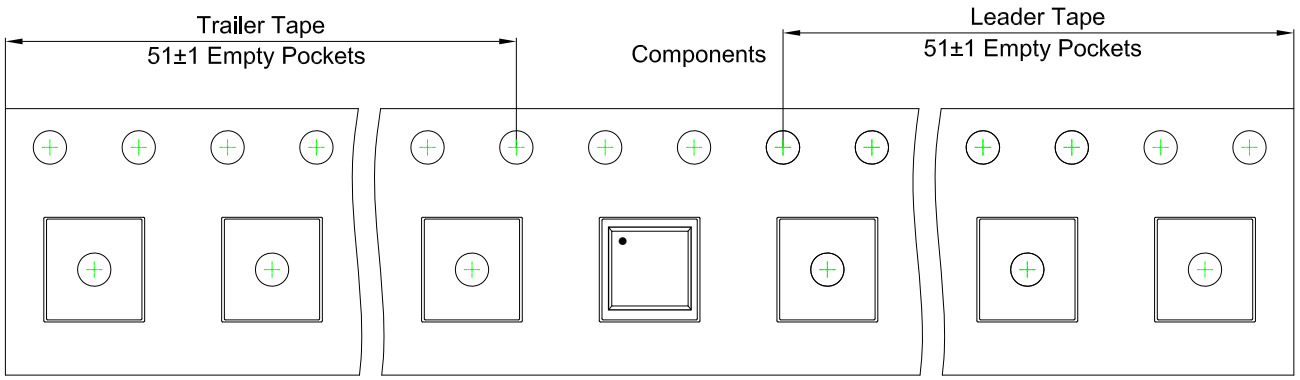


Packaging Description:

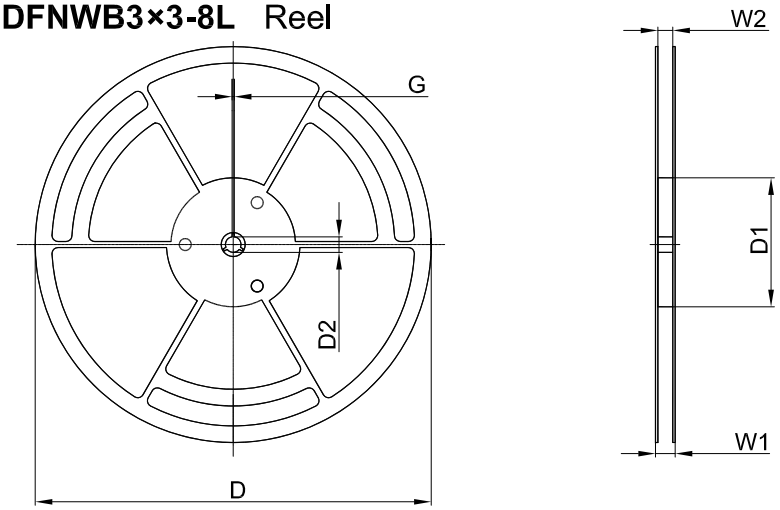
DFNWB3x3-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts 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
DFNWB3×3-8L	3.35	3.35	1.13	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

DFNWB3×3-8L Tape Leader and Trailer



DFNWB3×3-8L 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	10,000 pcs	360×360×65	50,000 pcs	378×358×382