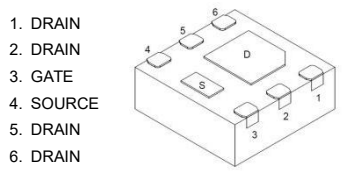
SZCJ

DFNWB2x2-6L Plastic-Encapsulate MOSFET

R N-Channel Power MOSFET

DFNWB2x2-6L



Key Performance Parameters

$V_{BR(DSS)}$	$R_{DS(on)}$TYP	I_D
30V	15mΩ@10V	7A
	17mΩ@4.5V	
	25mΩ@2.5V	

DESCRIPTION

This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance.

FEATURES

- Battery switch
- Load switch
- High density cell design for ultra low $R_{DS(ON)}$

APPLICATIONS

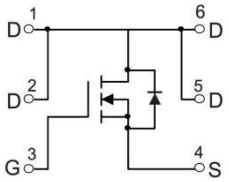
- SMPS and general purpose applications
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

MARKING



XXXXX = 3N02MR
Solid dot = Pin1 indicator.
YY = Code.

EQUIVALENT CIRCUIT



ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current	T_A=25℃	I_D⑥	7	A
	T_A =75℃		5.5	
Avalanche Current		I_{AS}③	8	A
Single Pulsed Avalanche Energy		E_{AS}③	16	mJ
Pulsed Drain Current		I_{DM}①②	28	A
Power Dissipation		P_D①⑥	2.5	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 Ambient	t≤10s	$R_{\theta JA}$⑥	35	50	℃/W
	Steady State		65	90	℃/W

Typical Characteristics

ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Static Characteristics

Parameter	Symbol	Test Condition		Value			Unit
				Min	Typ	Max	
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA		30	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS} =30V, V_{GS} =0V	T_J =25℃	-	-	1.0	μA
			T_J =125℃	-	-	100	
Gate-body leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} =0V		-	-	±100	nA
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA		0.6	0.9	1.5	V
Static drain-source on-sate resistance	$R_{DS(on)}$④	V_{GS} =10V, I_D =5.6A	T_J =25℃	-	15	26	mΩ
			T_J =125℃	-	24	42	
		V_{GS} =4.5V, I_D =5.0A		-	17	32	
		V_{GS} =2.5V, I_D =2.5A			25	46	
Forward transconductance	g_{FS}	V_{DS} =5V, I_D =5.6A		-	28	-	S

Dynamic Characteristics⑤

Input capacitance	C_{iss}	V_{GS}=0V, V_{DS}=15V, f =1MHz	-	782	-	pF
Output capacitance	C_{oss}		-	61	-	
Reverse transfer capacitance	C_{rss}		-	52	-	
Gate resistance	R_g	f =1MHz	-	2.0	-	Ω
Total gate charge	Q_g	V_{GS}=4.5V, V_{DS}=15V, I_D=5.6A	-	8.6	-	nC
Total gate charge	Q_g	V_{GS}=10V, V_{DS}=15V, I_D=5.6A	-	18.8	-	
Gate charge at threshold	$Q_{G(th)}$		-	0.7	-	
Gate-source charge	Q_{gs}		-	1.4	-	
Gate-drain charge	Q_{gd}		-	2.5	-	
Turn-on delay time	$t_{d(on)}$	V_{DD}=15V, V_{GS}=10V, I_D=5.6A, R_g=3Ω	-	2.3	-	ns
Turn-on rise time	t_r		-	1.2	-	
Turn-off delay time	$t_{d(off)}$		-	16.8	-	
Turn-off fall time	t_f		-	1.7	-	

Reverse Diode Characteristics

Drain-source diode forward voltage	V_{SD}④	V_{GS}=0V, I_S=3A	-	-	1.2	V
Continuous drain-source diode forward current	I_S①		-	-	7	A
Pulsed drain-source diode forward current	I_{SM}①②		-	-	28	A

Notes:

①.Limited only by maximum temperature allowed.

②.P_W≤10μs, Duty cycle≤1%.

③.EAS condition: V_{DD}=15V, V_{GS}=10V, L=0.5mH, R_g=25Ω Starting T_J= 25℃.

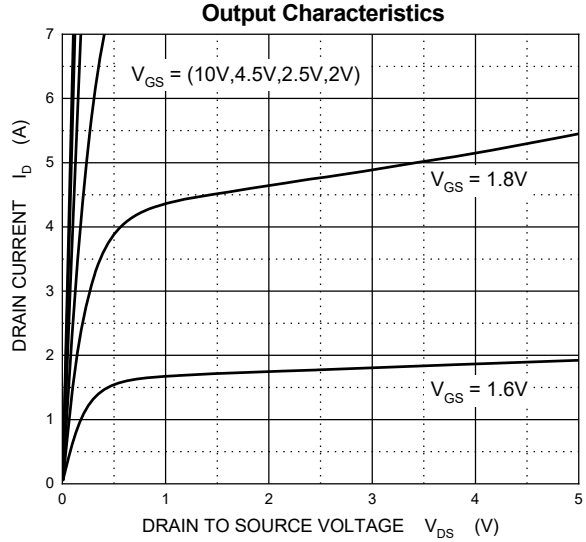
④.Pulse Test: Pulse Width≤380μs, duty cycle ≤2%.

⑤.Guaranteed by design, not subject to production.

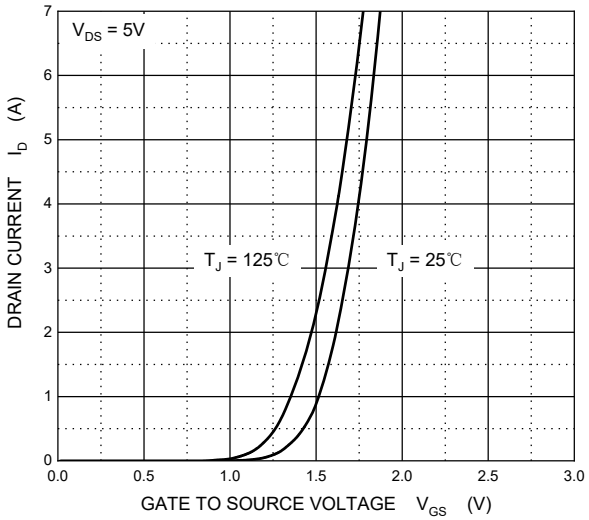
⑥.Device mounted on 1 in^2 FR-4 board with 2oz. double-sided Copper, in a still air environment with T_A=25℃.The current rating is based on the t≤10s thermal resistance rating.

Typical Characteristics

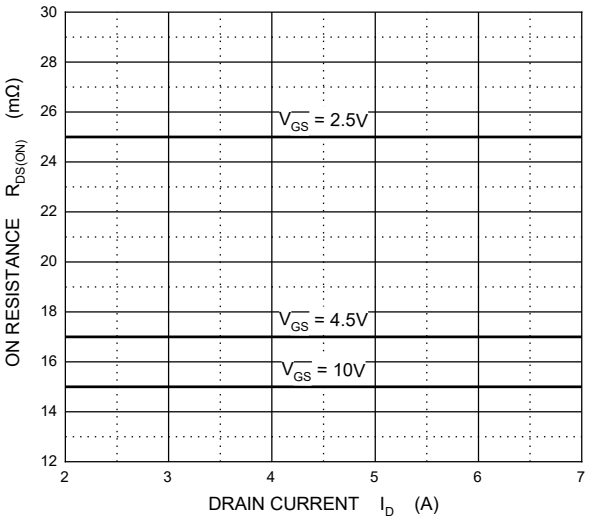
Output Characteristics



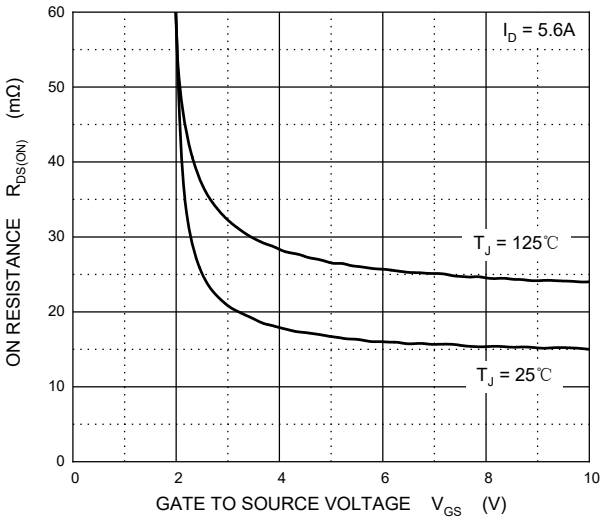
Transfer Characteristics



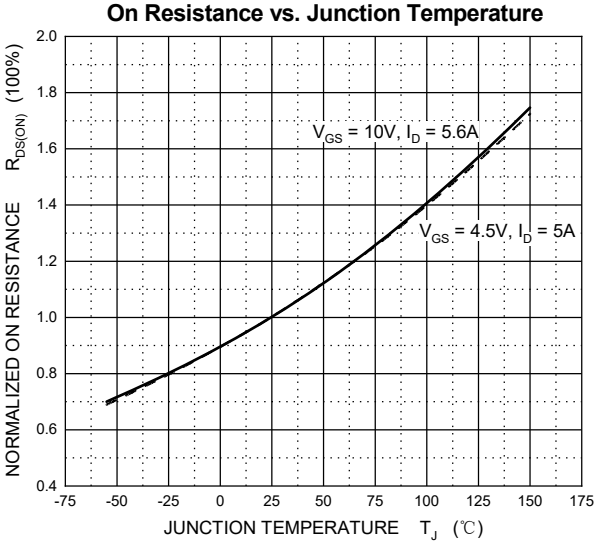
On Resistance vs. Drain Current



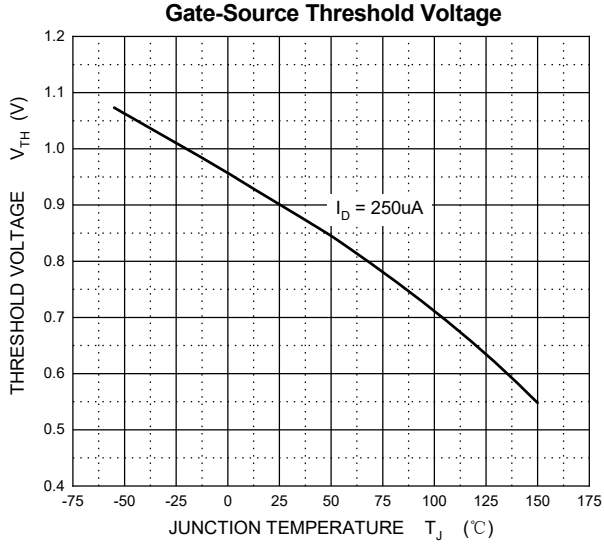
On Resistance vs. Gate-Source Bias



On Resistance vs. Junction Temperature

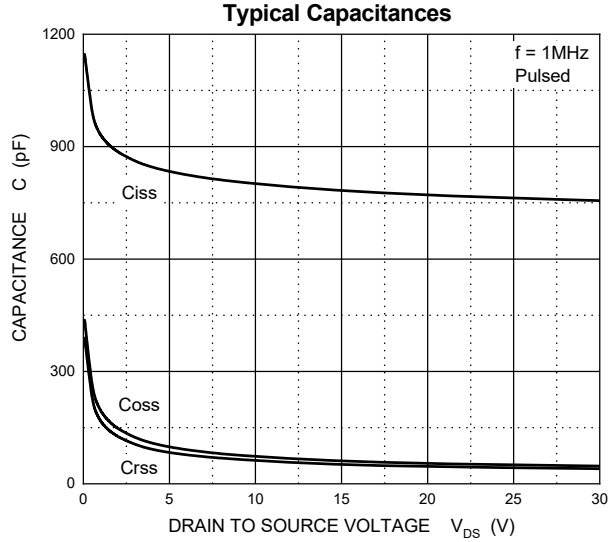


Gate-Source Threshold Voltage

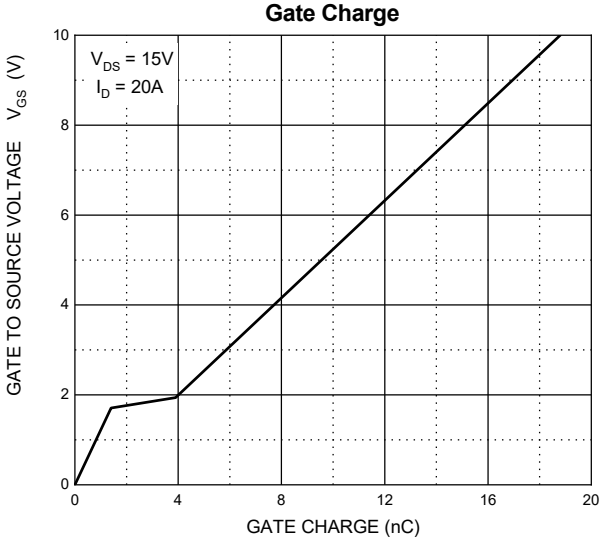


Typical Characteristics

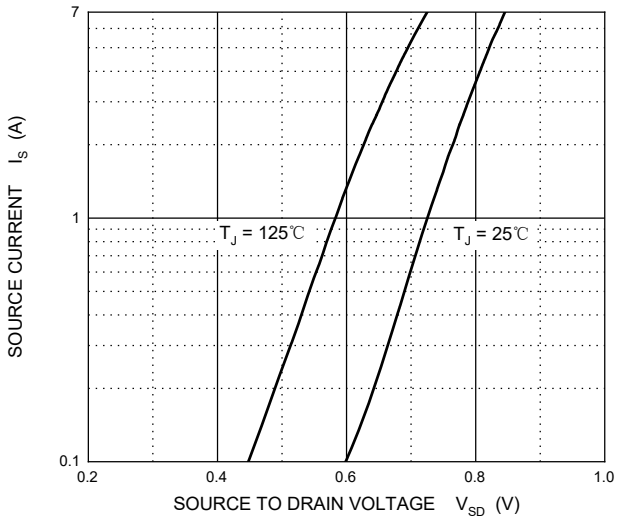
Typical Capacitances



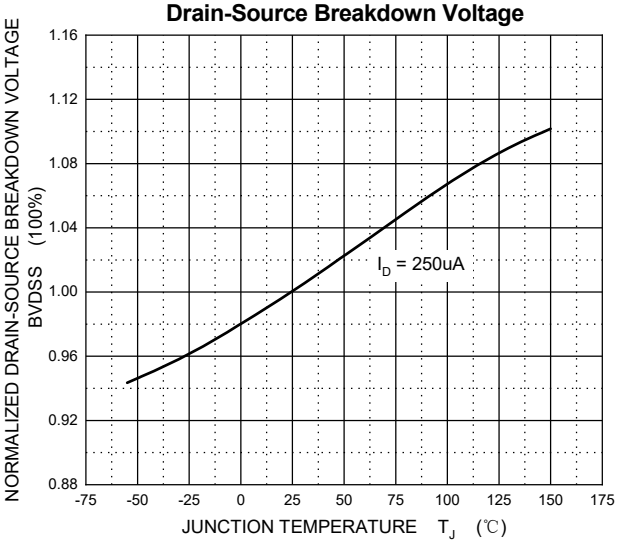
Gate Charge



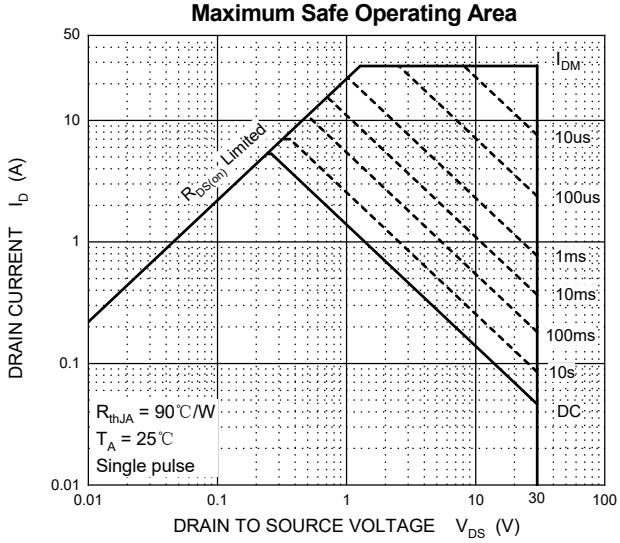
Source-Drain Diode Forward Characteristics



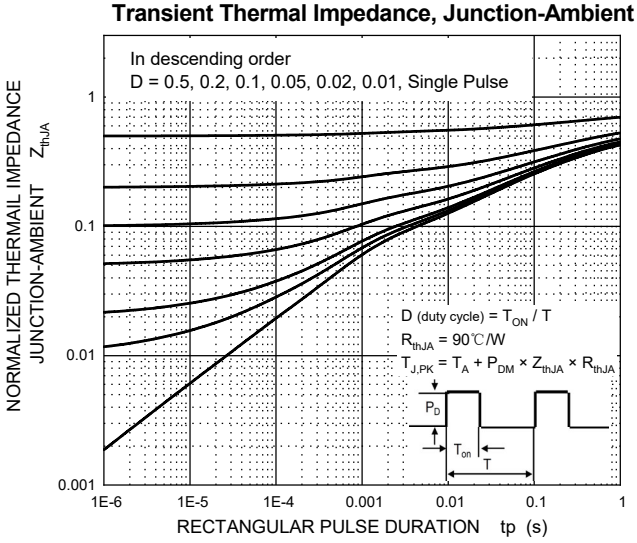
Drain-Source Breakdown Voltage



Maximum Safe Operating Area

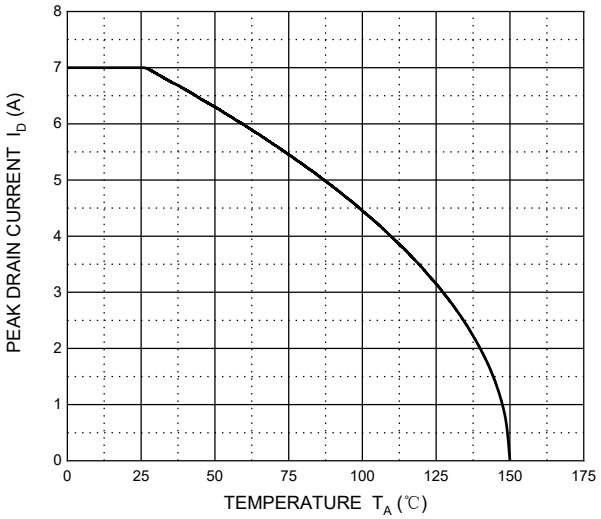


Transient Thermal Impedance, Junction-Ambient

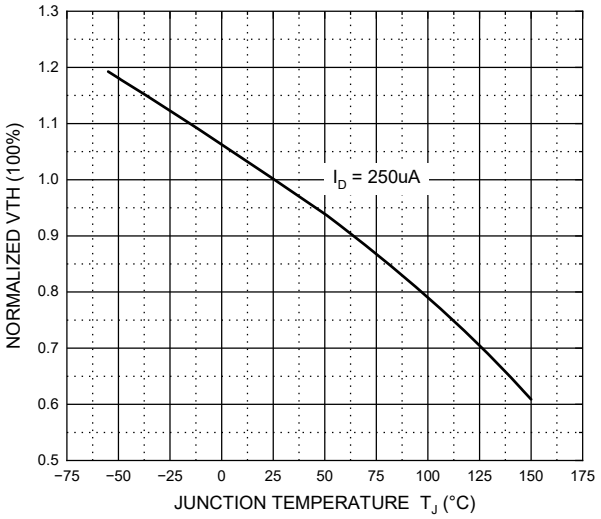


Typical Characteristics

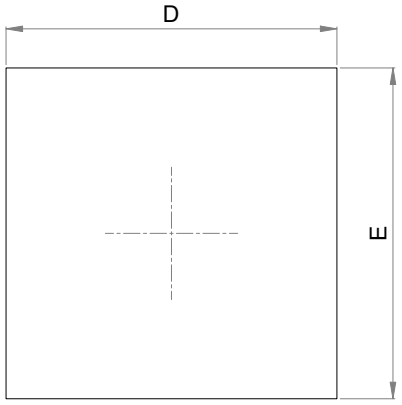
ID vs. TA



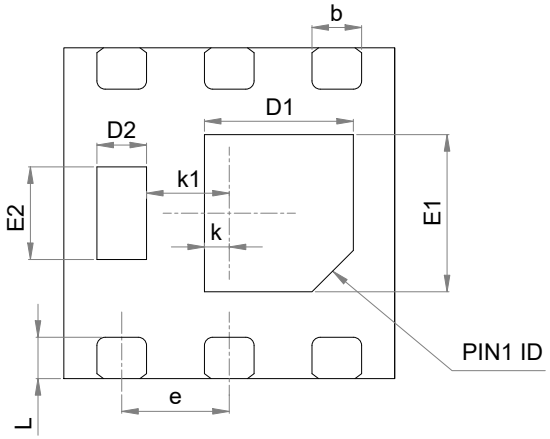
Normalized Threshold Voltage vs. Junction Temperature



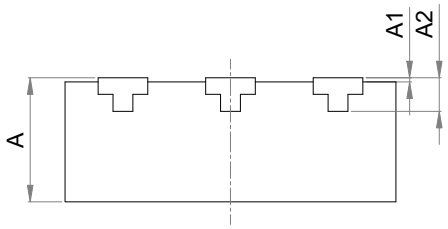
DFNWB2×2-6L-B Package Outline Dimensions



Top View



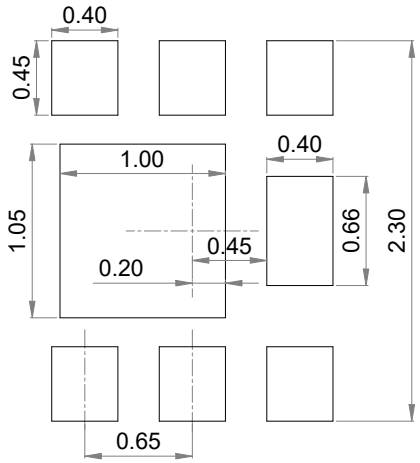
Bottom View



Side View

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.70	0.80	0.028	0.031
A1	0.00	0.05	0.000	0.002
A2	0.20 REF.		0.008 REF.	
b	0.25	0.35	0.010	0.014
D	1.90	2.10	0.075	0.083
D1	0.85	0.95	0.033	0.037
D2	0.25	0.35	0.010	0.014
E	1.90	2.10	0.075	0.083
E1	0.90	1.00	0.035	0.039
E2	0.51	0.61	0.020	0.024
e	0.65 BSC.		0.026 BSC.	
k	0.15 REF.		0.006 REF.	
k1	0.50 REF.		0.020 REF.	
L	0.20	0.30	0.008	0.012

DFNWB2×2-6L-B Suggested Pad Layout



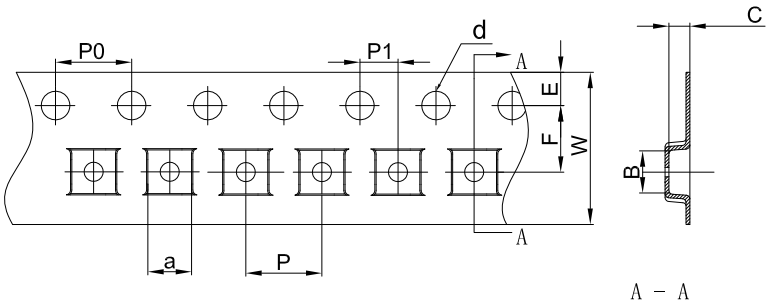
Controlling dimension：in millimeters.

NOTICE

SZCJ reserves the right to make modifications,enhanceme provements,corrections or changes without further notice to any product herein.SZCJ does not assume any liability arising out of the application or use of any product describ ein.

DFNWB2×2-6L Tape and Reel

DFNWB2×2-6L Embossed Carrier Tape

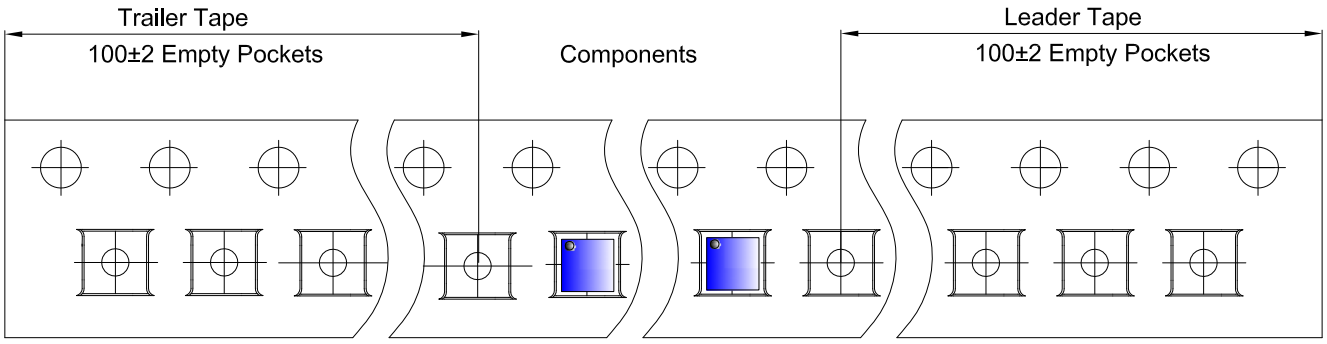


Packaging Description:

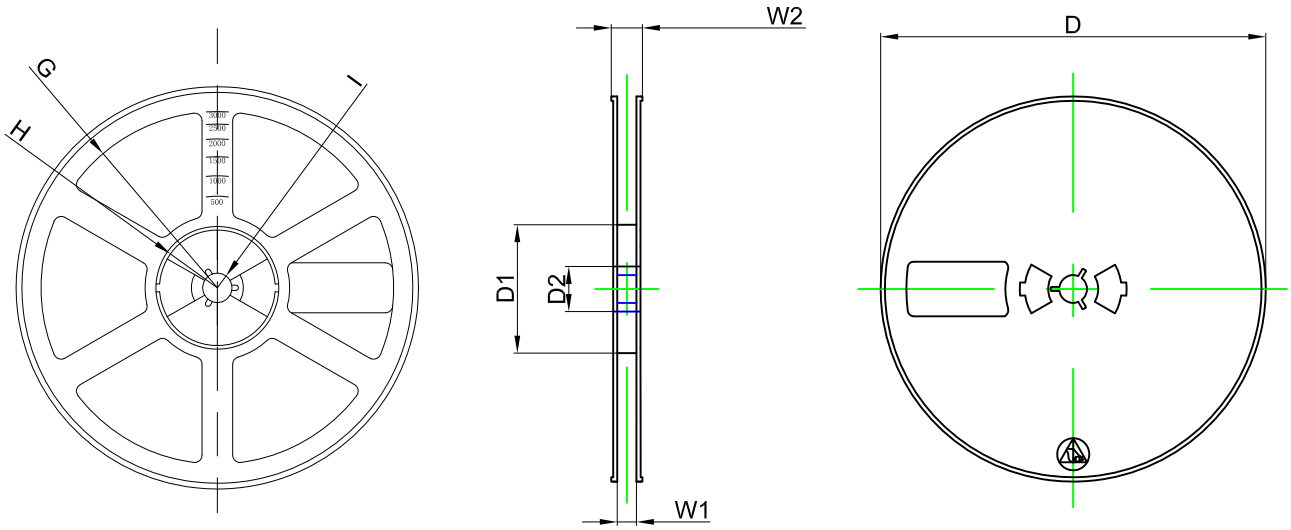
DFNWB2×2-6L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 18.0cm 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
DFNWB2×2-6L	2.30	2.30	1.10	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

DFNWB2×2-6L Tape Leader and Trailer



DFNWB2×2-6L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø180.00	60.00	13.00	R78.00	R25.60	R6.50	9.50	13.10

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	