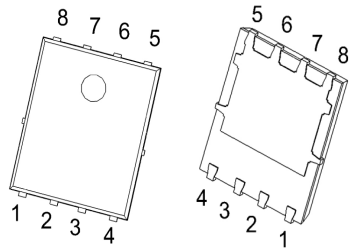
SZCJ Shenzhen Changji Semiconductor Co., LTD.

PDFNWB5×6-8L Plastic-Encapsulate MOSFETS

CJAC80SN10 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$TYP	I_D
100 V	6.2mΩ@10V	80A
	8.8mΩ@4.5V	

PDFNWB5×6-8L



DESCRIPTION

The CJAC80SN10 uses shielded gate trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications

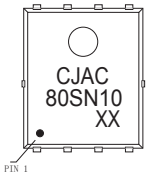
FEATURE

- Excellent package for good heat dissipation
- Ultra low gate charge
- Low reverse transfer capacitance
- Fast switching capability
- Avalanche energy specified

APPLICATION

- Power switching application

MARKING

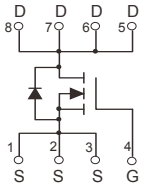


CJAC80SN10 = Part No.

Solid dot = Pin1 indicator.

XX = Code .

EQUIVALENT CIRCUIT



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

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C =25℃	I_D	80	A
	T_C =100℃		51	
Pulsed Drain Current		I_{DM}①②	320	A
Continuous Drain Current	T_A =25℃	I_D	11.5	A
	T_A =75℃		8.9	
Avalanche Current		I_{AS}③	33.5	A
Single Pulsed Avalanche Energy		E_{AS}③	280	mJ
Power Dissipation		P_D①	100	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	$R_{\theta JC}$	0.85	1.25	℃/W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$⑥	45	62.5	℃/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		100			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =80V, V_{GS} =0V	T_J =25℃			1.0	μA
			T_J =125℃			100	
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		1.3	1.8	2.5	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =20A			6.2	8.5	mΩ
		V_{GS} =4.5V, I_D =15A			8.8	10.5	mΩ
Dynamic characteristics ④⑤							
Input capacitance	C_{iss}	V_{DS} =50V,V_{GS} =0V, f =500KHz			2200	4400	pF
Output capacitance	C_{oss}				420	840	
Reverse transfer capacitance	C_{rss}				6.3	12.5	
Gate resistance	R_g	f =1MHz			2.9		Ω
Switching characteristics ④⑤							
Total gate charge	Q_g	V_{GS}=10V, V_{DS}=50V, I_D=20A			46	92	nC
Gate-source charge	Q_{gs}				6.4	12	
Gate-drain charge	Q_{gd}				15.4	31	
Turn-on delay time	$t_{d(on)}$	V_{DD}=50V,I_D=20A, V_{GS}=10V, R_G=3Ω			6.0		ns
Turn-on rise time	t_r				4.8		
Turn-off delay time	$t_{d(off)}$				22		
Turn-off fall time	t_f				5.6		
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					80	A
Pulsed drain-source diode forward current	I_{SM} ②					320	A
Reverse recovery time	trr	di_S/dt = 100A/μs, I_S = 20A, V_{DD} = 50V			51		ns
Reverse recovery charge	Qrr				88		nC

Notes:

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

2.P_W≤10μs, Duty cycle≤1%.

3.EAS condition: V_{DD}=50V,V_{GS}=10V, L=0.5mH, R_g=25Ω Starting T_J = 25°℃.

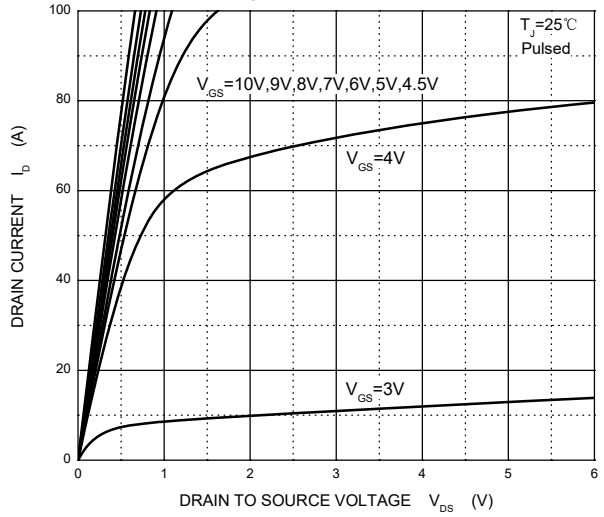
4.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

5.Guaranteed by design, not subject to production.

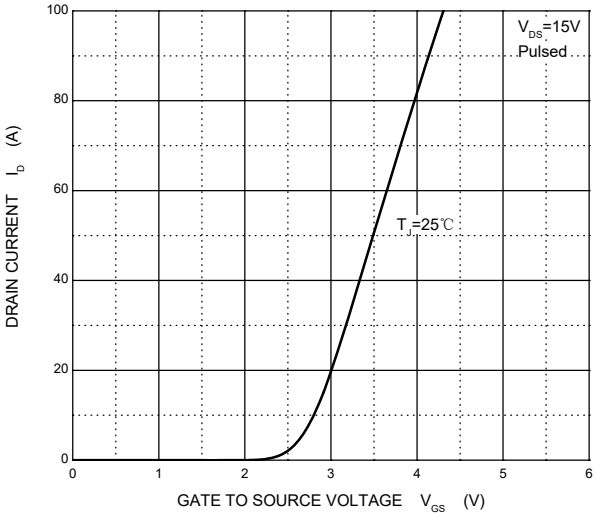
6.Device mounted on 1 in^2 FR-4 board with 2oz. double-sided Copper, in a still air environment with TA=25℃.

Typical Characteristics

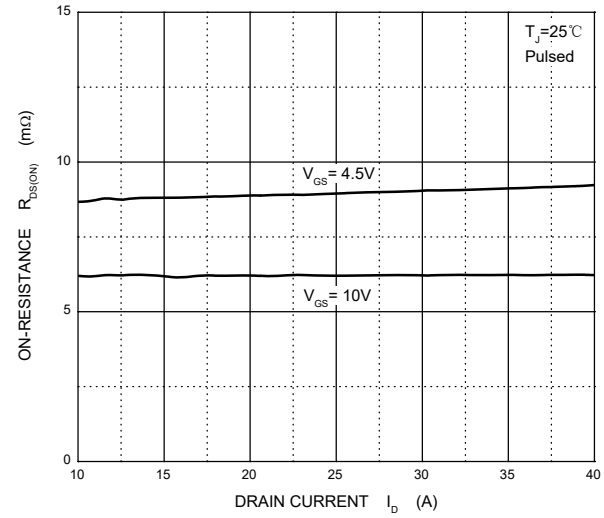
Output Characteristics



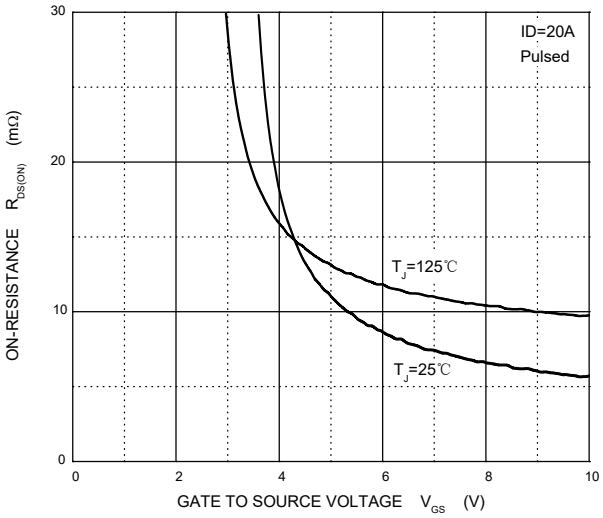
Transfer Characteristics



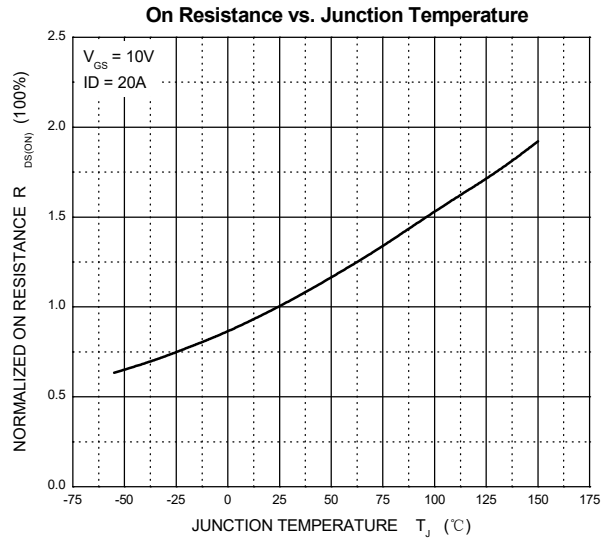
$R_{DS(ON)}$ —— I_D



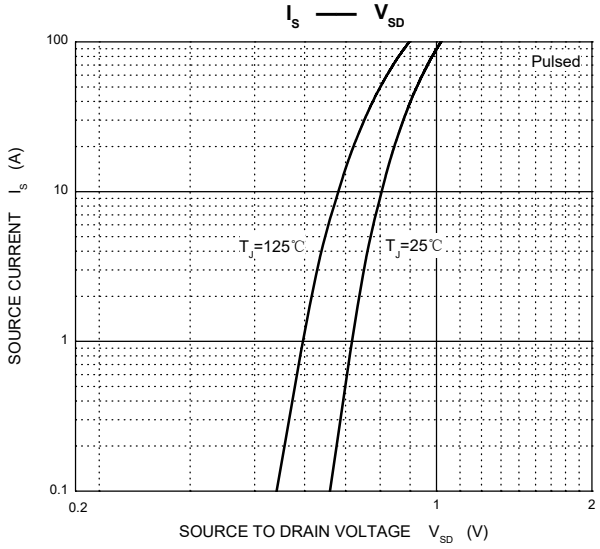
$R_{DS(ON)}$—— V_{GS}



On Resistance vs. Junction Temperature

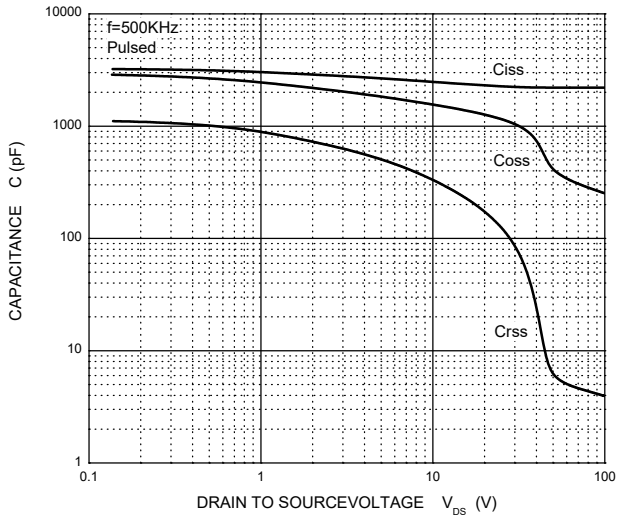


I_S —— V_{SD}

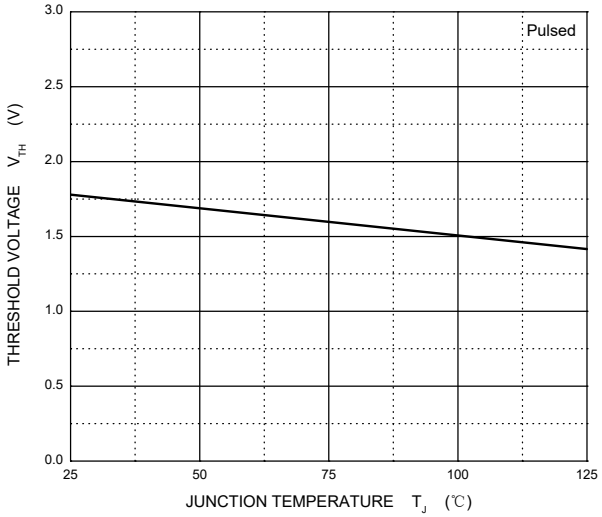


Typical Characteristics

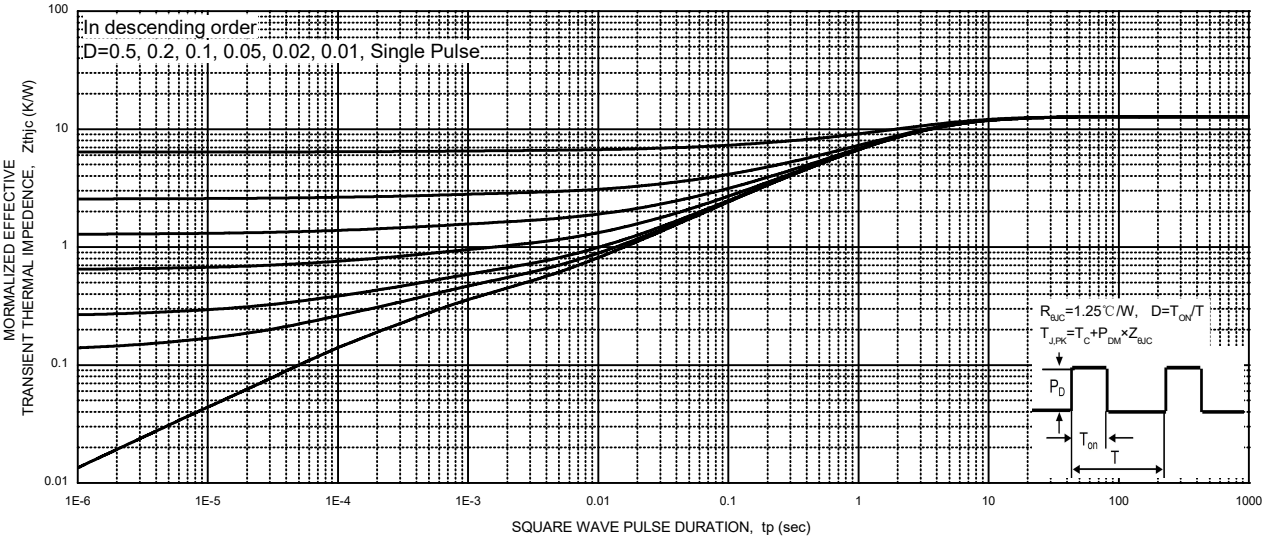
Capacitances



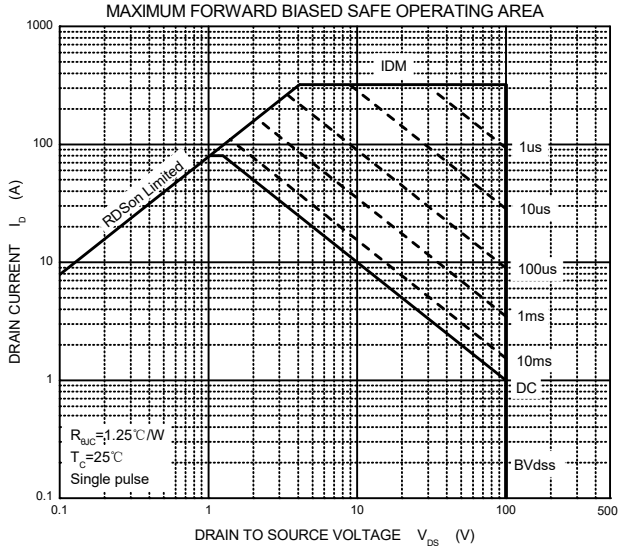
Threshold Voltage



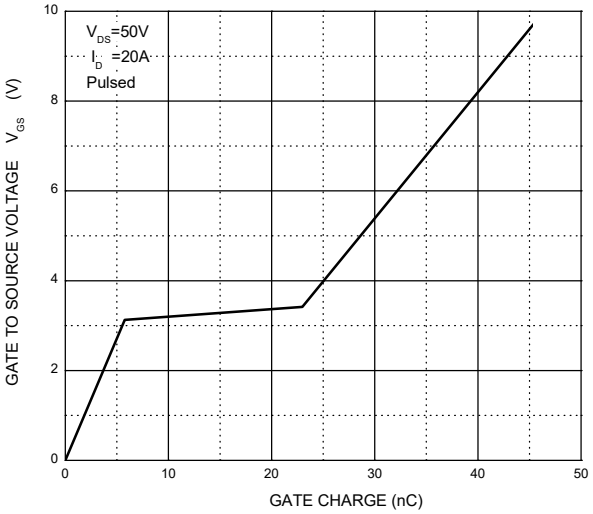
NORMALIZED MAXIMUM TRAISIENT THERMAL IMPENDANCE



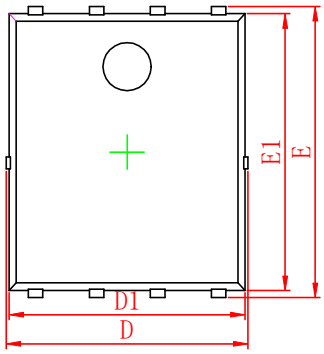
MAXIMUM FORWARD BIASED SAFE OPERATING AREA



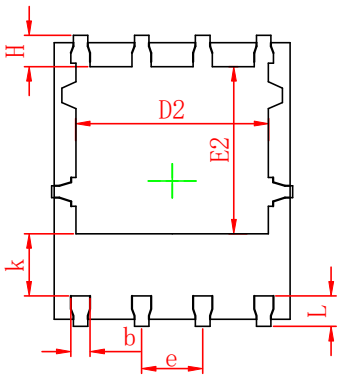
Gate Charge



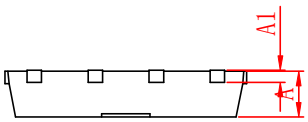
PDFNWB5×6-8L PACKAGE OUTLINE DIMENSIONS



Top View
[顶视图]



Bottom View
[背视图]

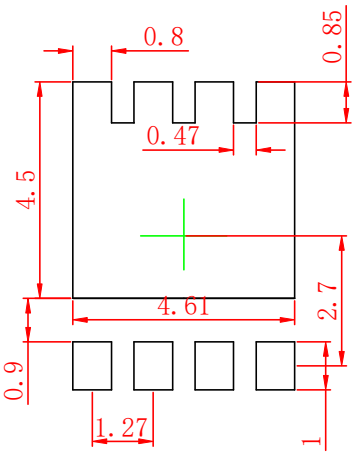


Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.10	0.035	0.043
A1	0.25 REF.		0.010 REF.	
D4.90		5.10	0.193 0.201	
D14.80		5.00	0.189 0.197	
D23.90		4.10	0.154 0.161	
E	5.90	6.10	0.232	0.240
E15.65		5.85	0.222 0.230	
E23.35		3.65	0.132 0.144	
k1.20		1.50	0.047 0.059	
b0.20		0.45	0.008 0.018	
e	1.27 BSC		0.050 BSC	
L0.55		0.75	0.022 0.030	
H0.45		0.75	0.018 0.030	

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

PDFNWB5×6-8L Suggested Pad Layout



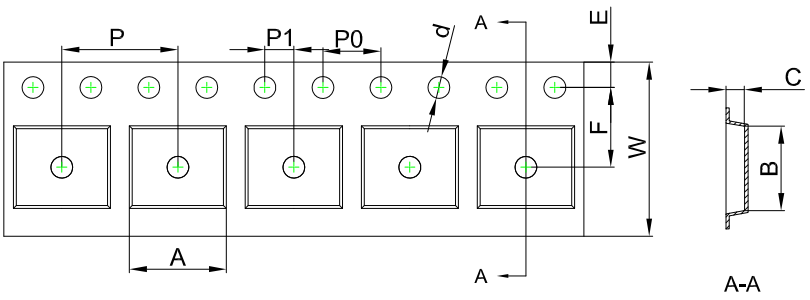
Notes：
1 Controlling dimension：in millimeters.
2 General tolerance:±0.05mm.
3 The pad layout is for referance purpose only.

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.

PDFNWB5×6-8L Tape and Reel

PDFNWB5×6-8L Embossed Carrier Tape

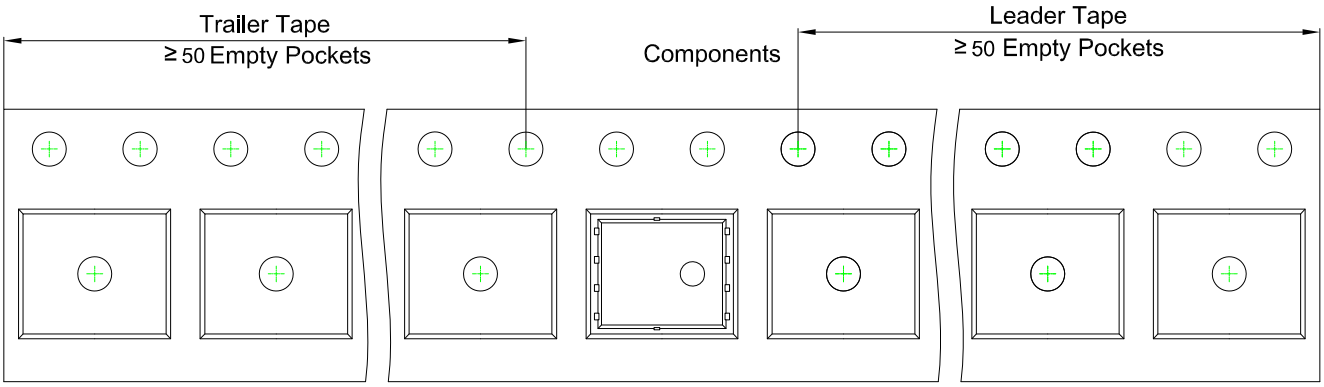


Packaging Description:

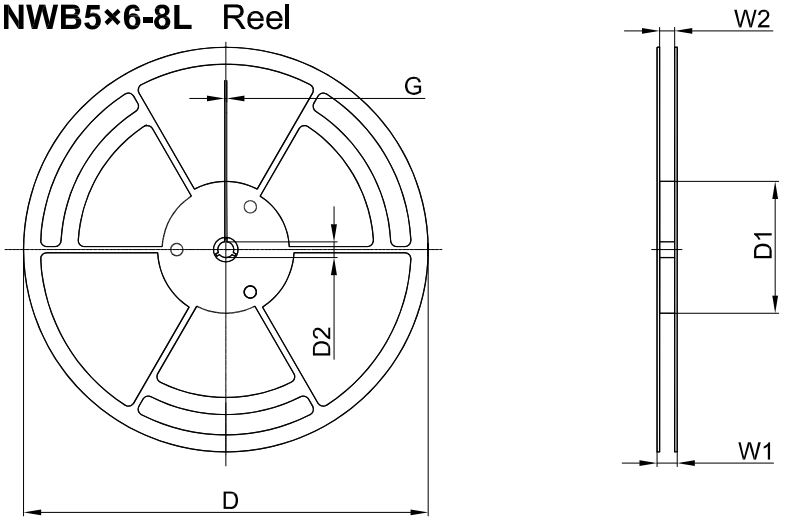
PDFNWB5×6-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts 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
PDFNWB5×6-8L	6.30	5.30	1.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

PDFNWB5×6-8L Tape Leader and Trailer



PDFNWB5×6-8L Reel



Dimensions are in millimeter						
Reel Option	**D**	**D1**	**D2**	**G**	**W1**	**W2**
13" Dia	φ330.00	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

szcsemi.com