



Holy Stone Enterprise Co., Ltd.

CERAMIC CAPACITOR CATALOG

HCN Series

Commerical grade

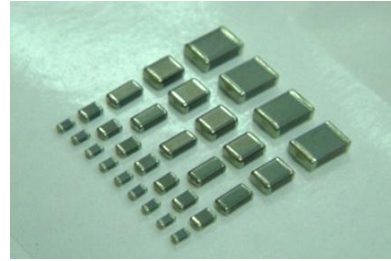
NPO-General Up to 50V

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Multilayer Ceramic Chip Capacitors [High Cap. NP0]

HCN Series



Replacement for Film Capacitor

◆ Features

- Small size & high Capacitance
- Suitable for wave and reflow soldering
- Excellent characteristics and tight tolerances
- Excellent Bias, high temperature stability & low Tan δ
- Replace Film Capacitors
- RoHS compliant

◆ Applications

- Suitable for ADSL filter circuits, cable Modem and coupling circuits, general Telecommunication use, power (Inverter for oscillation circuit), wireless charger and audio circuit

◆ Summary of Specifications

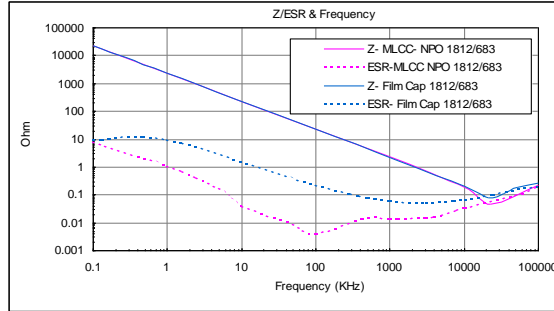
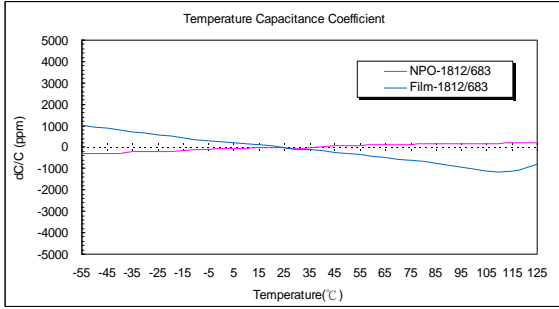
Operation Temperature	-55 °C ~ +125 °C
Rated Voltage	16Vdc to 50Vdc
Temperature Coefficient	NP0 : $\leq 30\text{ppm}/^\circ\text{C}$, -55 °C ~ +125 °C (EIA Class I)
Capacitance Range	1nF ~ 120nF
Dissipation Factor	$Q \geq 1000$ at 1KHz 20 °C
Insulation Resistance	10G Ω or 500/C Ω whichever is smaller (C in Farad)
Dielectric Strength	250% Rated Voltage for 1~ 5 seconds @ 50mA max. current
Aging	0% per decade hr.

◆ How To Order

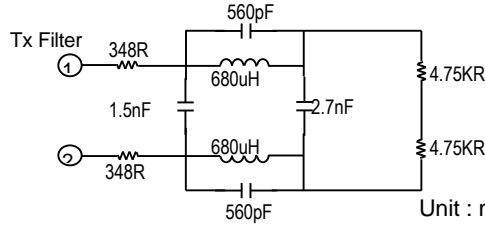
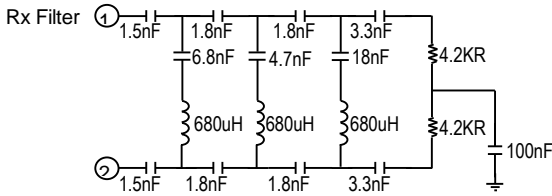


Product Code	Chip Size	Dielectric	Capacitance Unit : pF	Tolerance	Rated Voltage	Packaging
C: MLCC (Multilayer Ceramic Chip of Capacitor)	Ex.: 0603 0805 1206 1210 1812	N: NP0	Ex.: 102 : 10×10^2 103 : 10×10^3 124 : 12×10^4	Ex.: F : +/- 1% G : +/- 2% J : +/- 5%	Ex.: 016:16Vdc 025:25Vdc 050:50Vdc	T: T&R 7" R: T&R 13" B: Bulk

◆ Characteristics

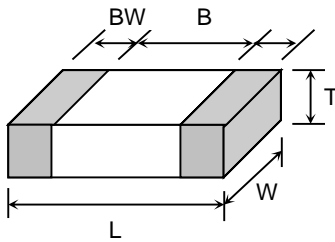


◆ Application Example Circuits



Unit : mm [inches]

◆ Dimensions



TYPE	L	W	T (max)	B (min)	BW (min)
0603	1.60±0.10 [.063±.004]	0.80±0.10 [.031±.004]	1.00 [.039]	0.40 [.016]	0.15 [.006]
0805	2.00±0.20 [.079±.012]	1.25±0.20 [.049±.012]	1.45 [.057]	0.70 [.028]	0.20 [.008]
1206	3.20±0.30 [.126±.012]	1.60±0.20 [.063±.012]	1.80 [.071]	1.50 [.059]	0.30 [.012]
1210	3.20±0.30 [.126±.012]	2.50±0.20 [.098±.012]	2.60 [.102]	1.60 [.059]	0.30 [.012]
1812	4.60±0.30 [.181±.012]	3.20±0.30 [.126±.012]	3.00 [.118]	2.50 [.098]	0.30 [.012]
1825	4.60±0.30 [.181±.012]	6.35±0.40 [.250±.016]	3.00 [.118]	2.50 [.098]	0.30 [.012]
2220	5.70±0.40 [.220±.016]	5.00±0.40 [.197±.016]	3.00 [.118]	3.50 [.137]	0.30 [.012]
2225	5.70±0.40 [.220±.016]	6.35±0.40 [.250±.016]	3.00 [.118]	3.50 [.137]	0.30 [.012]

◆ Capacitance Range

Dielectric Characteristic	Size	Voltage	Capacitance Range																												
			102	122	152	182	222	272	332	392	472	562	682	822	103	123	153	183	223	273	333	393	473	563	683	823	104	124	154	224	
NP0	0603	16V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
		25V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
		50V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0805	16V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
		25V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
		50V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	1206	16V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
		25V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
		50V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	1210	16V	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
		25V	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
		50V	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	1812	16V	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
		25V	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
		50V	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	2220	16V	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
		25V	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
		50V	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	1825	16V	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
		25V	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
		50V	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	2225	16V	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
		25V	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
		50V	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D

Symbol Code	S	O	A	B	C	D	E	F
Thickness(mm)	0.3±0.03	0.5±0.05	0.6±0.1	0.85±0.1	1.0±0.1	1.25±0.2	1.6±0.2	2.0±0.2

■ Other dimensions, capacitance values and voltages rating are available. Please contact Holy Stone.

Cap	Size	Thickness	Cap. Tol.	Catalog Number		
				Rated Voltage Vdc 16V	Rated Voltage Vdc 25V	Rated Voltage Vdc 50V
102 (1nF)	0603	B/0.85±0.15mm	J	C0603N102J016T	C0603N102J025T	C0603N102J050T
	0805	B/0.85±0.15mm	J	C0805N102J016T	C0805N102J025T	C0805N102J050T
	1206	B/0.85±0.15mm	J	C1206N102J016T	C1206N102J025T	C1206N102J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N102J016T	C1210N102J025T	C1210N102J050T
	1812	D/1.25±0.2mm	J	C1812N102J016T	C1812N102J025T	C1812N102J050T
122 (1.2nF)	0603	B/0.85±0.15mm	J	C0603N122J016T	C0603N122J025T	C0603N122J050T
	0805	B/0.85±0.15mm	J	C0805N122J016T	C0805N122J025T	C0805N122J050T
	1206	B/0.85±0.15mm	J	C1206N122J016T	C1206N122J025T	C1206N122J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N122J016T	C1210N122J025T	C1210N122J050T
	1812	D/1.25±0.2mm	J	C1812N122J016T	C1812N122J025T	C1812N122J050T
152 (1.5nF)	0603	B/0.85±0.15mm	J	C0603N152J016T	C0603N152J025T	C0603N152J050T
	0805	B/0.85±0.15mm	J	C0805N152J016T	C0805N152J025T	C0805N152J050T
	1206	B/0.85±0.15mm	J	C1206N152J016T	C1206N152J025T	C1206N152J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N152J016T	C1210N152J025T	C1210N152J050T
	1812	D/1.25±0.2mm	J	C1812N152J016T	C1812N152J025T	C1812N152J050T
182 (1.8nF)	0603	B/0.85±0.15mm	J	C0603N182J016T	C0603N182J025T	C0603N182J050T
	0805	B/0.85±0.15mm	J	C0805N182J016T	C0805N182J025T	C0805N182J050T
	1206	B/0.85±0.15mm	J	C1206N182J016T	C1206N182J025T	C1206N182J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N182J016T	C1210N182J025T	C1210N182J050T
	1812	D/1.25±0.2mm	J	C1812N182J016T	C1812N182J025T	C1812N182J050T
222 (2.2nF)	0603	B/0.85±0.15mm	J	C0603N222J016T	C0603N222J025T	C0603N222J050T
	0805	C/1.0 +0.1mm -0.05mm	J	C0805N222J016T	C0805N222J025T	C0805N222J050T
	1206	B/0.85±0.15mm	J	C1206N222J016T	C1206N222J025T	C1206N222J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N222J016T	C1210N222J025T	C1210N222J050T
	1812	D/1.25±0.2mm	J	C1812N222J016T	C1812N222J025T	C1812N222J050T
272 (2.7nF)	0603	B/0.85±0.15mm	J	C0603N272J016T	C0603N272J025T	C0603N272J050T
	0805	D/1.25±0.2mm	J	C0805N272J016T	C0805N272J025T	C0805N272J050T
	1206	B/0.85±0.15mm	J	C1206N272J016T	C1206N272J025T	C1206N272J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N272J016T	C1210N272J025T	C1210N272J050T
	1812	D/1.25±0.2mm	J	C1812N272J016T	C1812N272J025T	C1812N272J050T
332 (3.3nF)	0603	B/0.85±0.15mm	J	C0603N332J016T	C0603N332J025T	C0603N332J050T
	0805	D/1.25±0.2mm	J	C0805N332J016T	C0805N332J025T	C0805N332J050T
	1206	B/0.85±0.15mm	J	C1206N332J016T	C1206N332J025T	C1206N332J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N332J016T	C1210N332J025T	C1210N332J050T
	1812	D/1.25±0.2mm	J	C1812N332J016T	C1812N332J025T	C1812N332J050T
392 (3.9nF)	0805	D/1.25±0.2mm	J	C0805N392J016T	C0805N392J025T	C0805N392J050T
	1206	B/0.85±0.15mm	J	C1206N392J016T	C1206N392J025T	C1206N392J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N392J016T	C1210N392J025T	C1210N392J050T
	1812	D/1.25±0.2mm	J	C1812N392J016T	C1812N392J025T	C1812N392J050T
472 (4.7nF)	0805	D/1.25±0.2mm	J	C0805N472J016T	C0805N472J025T	C0805N472J050T
	1206	B/0.85±0.15mm	J	C1206N472J016T	C1206N472J025T	C1206N472J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N472J016T	C1210N472J025T	C1210N472J050T
	1812	D/1.25±0.2mm	J	C1812N472J016T	C1812N472J025T	C1812N472J050T

Cap	Size	Thickness	Cap. Tol.	Catalog Number		
				Rated Voltage Vdc 16V	Rated Voltage Vdc 25V	Rated Voltage Vdc 50V
562 (5.6nF)	0805	D/1.25±0.2mm	J	C0805N562J016T	C0805N562J025T	C0805N562J050T
	1206	B/0.85±0.15mm	J	C1206N562J016T	C1206N562J025T	C1206N562J050T
		C/1.0 +0.1mm -0.05mm	J			C1206N562J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N562J016T	C1210N562J025T	C1210N562J050T
		D/1.25±0.2mm	J			C1210N562J050T
1812	D/1.25±0.2mm	J	C1812N562J016T	C1812N562J025T	C1812N562J050T	
682 (6.8nF)	0805	D/1.25±0.2mm	J	C0805N682J016T	C0805N682J025T	C0805N682J050T
	1206	B/0.85±0.15mm	J	C1206N682J016T	C1206N682J025T	C1206N682J050T
		D/1.25±0.2mm	J			C1206N682J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N682J016T	C1210N682J025T	C1210N682J050T
	1812	D/1.25±0.2mm	J	C1812N682J016T	C1812N682J025T	C1812N682J050T
822 (8.2nF)	0805	D/1.25±0.2mm	J	C0805N822J016T	C0805N822J025T	C0805N822J050T
	1206	B/0.85±0.15mm	J	C1206N822J016T	C1206N822J025T	C1206N822J050T
		D/1.25±0.2mm	J			C1206N822J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N822J016T	C1210N822J025T	C1210N822J050T
	1812	D/1.25±0.2mm	J	C1812N822J016T	C1812N822J025T	C1812N822J050T
		D/1.25±0.2mm	J			C2220N822J050T
	2220	E/1.6±0.2mm	J			C2220N822J050T
2225	D/1.25±0.2mm	J			C2225N822J050T	
103 (10nF)	0805	D/1.25±0.2mm	J	C0805N103J016T	C0805N103J025T	C0805N103J050T
	1206	C/1.0 +0.1mm -0.05mm	J	C1206N103J016T	C1206N103J025T	C1206N103J050T
		C/1.0 +0.1mm -0.05mm	J	C1210N103J016T	C1210N103J025T	C1210N103J050T
	1812	D/1.25±0.2mm	J	C1812N103J016T	C1812N103J025T	C1812N103J050T
		D/1.25±0.2mm	J			C2220N103J050T
	2225	D/1.25±0.2mm	J			C2225N103J050T
123 (12nF)	0805	D/1.25±0.2mm	J	C0805N123J016T	C0805N123J025T	C0805N123J050T
	1206	D/1.25±0.2mm	J	C1206N123J016T	C1206N123J025T	C1206N123J050T
		C/1.0 +0.1mm -0.05mm	J	C1210N123J016T	C1210N123J025T	C1210N123J050T
	1812	D/1.25±0.2mm	J	C1812N123J016T	C1812N123J025T	C1812N123J050T
		D/1.25±0.2mm	J			C2220N123J050T
	2225	D/1.25±0.2mm	J			C2225N123J050T
153 (15nF)	1206	D/1.25±0.2mm	J	C1206N153J016T	C1206N153J025T	C1206N153J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N153J016T	C1210N153J025T	C1210N153J050T
		D/1.25±0.2mm	J			C2220N153J050T
	1812	D/1.25±0.2mm	J	C1812N153J016T	C1812N153J025T	C1812N153J050T
		D/1.25±0.2mm	J			C2225N153J050T
2225	D/1.25±0.2mm	J			C2225N153J050T	
183 (18nF)	1206	D/1.25±0.2mm	J	C1206N183J016T	C1206N183J025T	C1206N183J050T
	1210	C/1.0 +0.1mm -0.05mm	J	C1210N183J016T	C1210N183J025T	C1210N183J050T
		D/1.25±0.2mm	J			C2220N183J050T
	1812	D/1.25±0.2mm	J	C1812N183J016T	C1812N183J025T	C1812N183J050T
		D/1.25±0.2mm	J			C2225N183J050T
2225	D/1.25±0.2mm	J			C2225N183J050T	

Cap	Size	Thickness	Cap. Tol.	Catalog Number		
				Rated Voltage Vdc 16V	Rated Voltage Vdc 25V	Rated Voltage Vdc 50V
223 (22nF)	1206	D/1.25±0.2mm	J	C1206N223J016T	C1206N223J025T	C1206N223J050T
	1210	D/1.25±0.2mm	J	C1210N223J016T	C1210N223J025T	C1210N223J050T
		F/2.0±0.2mm	J		C1210N223J025T	C1210N223J050T
	1812	D/1.25±0.2mm	J	C1812N223J016T	C1812N223J025T	C1812N223J050T
		E/1.6±0.2mm	J			C1812N223J050T
	2220	D/1.25±0.2mm	J			C2220N223J050T
2225	D/1.25±0.2mm	J			C2225N223J050T	
273 (27nF)	1206	E/1.6±0.2mm	J	C1206N273J016T	C1206N273J025T	C1206N273J050T
	1210	D/1.25±0.2mm	J	C1210N273J016T	C1210N273J025T	C1210N273J050T
	1812	D/1.25±0.2mm	J	C1812N273J016T	C1812N273J025T	C1812N273J050T
		D/1.25±0.2mm	J			C2220N273J050T
	2220	E/1.6±0.2mm	J			C2220N273J050T
		D/1.25±0.2mm	J			C2225N273J050T
333 (33nF)	1206	E/1.6±0.2mm	J	C1206N333J016T	C1206N333J025T	C1206N333J050T
	1210	D/1.25±0.2mm	J	C1210N333J016T	C1210N333J025T	C1210N333J050T
	1812	D/1.25±0.2mm	J	C1812N333J016T	C1812N333J025T	C1812N333J050T
		E/1.6±0.2mm	J			C1812N333J050T
	2220	D/1.25±0.2mm	J			C2220N333J050T
	2225	D/1.25±0.2mm	J			C2225N333J050T
393 (39nF)	1206	E/1.6±0.2mm	J	C1206N393J016T	C1206N393J025T	C1206N393J050T
	1210	E/1.6±0.2mm	J	C1210N393J016T	C1210N393J025T	C1210N393J050T
	1812	D/1.25±0.2mm	J	C1812N393J016T	C1812N393J025T	C1812N393J050T
		D/1.25±0.2mm	J			C2220N393J050T
	2220	D/1.25±0.2mm	J			C2220N393J050T
		D/1.25±0.2mm	J			C2225N393J050T
473 (47nF)	1206	E/1.6±0.2mm	J	C1206N473J016T	C1206N473J025T	C1206N473J050T
	1210	E/1.6±0.2mm	J	C1210N473J016T	C1210N473J025T	C1210N473J050T
	1812	D/1.25±0.2mm	J	C1812N473J016T	C1812N473J025T	C1812N473J050T
		F/2.0±0.2mm	J			C1812N473J050T
	2220	D/1.25±0.2mm	J			C2220N473J050T
	2225	D/1.25±0.2mm	J			C2225N473J050T
563 (56nF)	1206	E/1.6±0.2mm	J	C1206N563J016T	C1206N563J025T	C1206N563J050T
	1210	F/2.0±0.2mm	J	C1210N563J016T	C1210N563J025T	C1210N563J050T
	1812	D/1.25±0.2mm	J	C1812N563J016T	C1812N563J025T	C1812N563J050T
		D/1.25±0.2mm	J			C2220N563J050T
	2220	D/1.25±0.2mm	J			C2220N563J050T
		D/1.25±0.2mm	J			C2225N563J050T
683 (68nF)	1206	E/1.6±0.2mm	J	C1206N683J016T	C1206N683J025T	C1206N683J050T
	1210	F/2.0±0.2mm	J	C1210N683J016T	C1210N683J025T	C1210N683J050T
	1812	D/1.25±0.2mm	J	C1812N683J016T	C1812N683J025T	C1812N683J050T
		D/1.25±0.2mm	J			C2220N683J050T
	2220	D/1.25±0.2mm	J			C2220N683J050T
		D/1.25±0.2mm	J			C2225N683J050T

Cap	Size	Thickness	Cap. Tol.	Catalog Number		
				Rated Voltage Vdc 16V	Rated Voltage Vdc 25V	Rated Voltage Vdc 50V
823 (82nF)	1206	E/1.6±0.2mm	J	C1206N823J016T	C1206N823J025T	C1206N823J050T
	1210	F/2.0±0.2mm	J	C1210N823J016T	C1210N823J025T	C1210N823J050T
	1812	E/1.6±0.2mm	J	C1812N823J016T	C1812N823J025T	C1812N823J050T
	2220	D/1.25±0.2mm	J			C2220N823J050T
	2225	D/1.25±0.2mm	J			C2225N823J050T
104 (100nF)	1206	E/1.6±0.2mm	J	C1206N104J016T	C1206N104J025T	C1206N104J050T
	1210	F/2.0±0.2mm	J	C1210N104J016T	C1210N104J025T	C1210N104J050T
	1812	E/1.6±0.2mm	J	C1812N104J016T	C1812N104J025T	C1812N104J050T
	2220	D/1.25±0.2mm	J			C2220N104J050T
	2225	D/1.25±0.2mm	J			C2225N104J050T
124 (120nF)	1812	F/2.0±0.2mm	J	C1812N124J016T	C1812N124J025T	C1812N124J050T
	2220	D/1.25±0.2mm	J			C2220N124J050T
	2225	D/1.25±0.2mm	J			C2225N124J050T