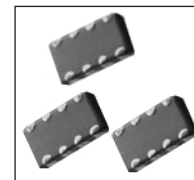


# Multilayer Ceramic Chip Capacitors

NCA Series

**RoHS  
Compliant**

Includes all homogeneous materials  
\*See Part Number System for Details



## FEATURES

- STANDARD EIA 0805 & 1206 PACKAGING
- EACH COMPONENT CONTAINS 4 ISOLATED CERAMIC CAPACITORS
- AVAILABLE IN A WIDE RANGE OF VALUES AND TEMPERATURE COEFFICIENTS

SPECIFICATIONS	NPO	X7R	X5R
OPERATING TEMPERATURE	-55°C~ +125°C	-55°C~ +125°C	-55°C~ +85°C
CAPACITANCE RANGE	10pF ~ 470pF	220pF ~ 0.1μF	0.1μF
VOLTAGE RANGE	16, 25, 50 & 100Vdc	10, 16, 25 & 50Vdc	16Vdc
CAPACITANCE TOLERANCE	±5% (J), ±10%(K)	±10%(K), ±20%(M)	±10%(K), ±20%(M)
TEMPERATURE CHARACTERISTICS	0±30ppm	±15%	±15%
DIELECTRIC WITHSTANDING VOLTAGE	2.5 x Rated Voltage for 1 minute		
INSULATION RESISTANCE (after 1 minute)	>10GΩ	>10GΩ	>10GΩ
DISSIPATION FACTOR	≤ 0.1%	≤ 5%	≤ 5%

## NPO 0805 STANDARD VALUES AND VOLTAGES

Part Number	Case Size	Voltage	Capacitance (pF)	Standard Tol.	
NCA0805NPO101J16TRPF	0805	16	100	±5%	
NCA0805NPO221J16TRPF			220	±5%	
NCA0805NPO100J25TRPF			10	±5%	
NCA0805NPO150J25TRPF		25	15	±5%	
NCA0805NPO220J25TRPF			22	±5%	
NCA0805NPO330J25TRPF			33	±5%	
NCA0805NPO470J25TRPF			47	±5%	
NCA0805NPO680J25TRPF			68	±5%	
NCA0805NPO820J25TRPF			82	±5%	
NCA0805NPO101J25TRPF			100	±5%	
NCA0805NPO151J25TRPF			150	±5%	
NCA0805NPO181J25TRPF			180	±5%	
NCA0805NPO221J25TRPF			220	±5%	
NCA0805NPO100J50TRPF			50	10	±5%
NCA0805NPO150J50TRPF				15	±5%
NCA0805NPO180J50TRPF		18		±5%	
NCA0805NPO220J50TRPF		22		±5%	
NCA0805NPO330J50TRPF		33		±5%	
NCA0805NPO390J50TRPF		39		±5%	
NCA0805NPO470J50TRPF		47		±5%	
NCA0805NPO560J50TRPF		56		±5%	
NCA0805NPO680J50TRPF		68		±5%	
NCA0805NPO820J50TRPF		82		±5%	
NCA0805NPO101J50TRPF		100		±5%	
NCA0805NPO121J50TRPF		120		±5%	
NCA0805NPO151J50TRPF		150		±5%	
NCA0805NPO181J50TRPF		180		±5%	
NCA0805NPO221J50TRPF		220		±5%	
NCA0805NPO100J100TRPF		100		10	±5%
NCA0805NPO150J100TRPF				15	±5%
NCA0805NPO220J100TRPF				22	±5%
NCA0805NPO330J100TRPF			33	±5%	
NCA0805NPO470J100TRPF			47	±5%	
NCA0805NPO680J100TRPF			68	±5%	
NCA0805NPO101J100TRPF			100	±5%	

NPO 0805 STANDARD VALUES AND VOLTAGES (CONTINUED ON NEXT PAGE)

## NPO 1206 STANDARD VALUES AND VOLTAGES

Part Number	Case Size	Voltage	Capacitance (pF)	Standard Tol.	
NCA1206NPO100J16TRPF	1206	16	10	±5%	
NCA1206NPO220J16TRPF			22	±5%	
NCA1206NPO330J16TRPF			33	±5%	
NCA1206NPO470J16TRPF			47	±5%	
NCA1206NPO680J16TRPF			68	±5%	
NCA1206NPO101J16TRPF			100	±5%	
NCA1206NPO221J16TRPF			220	±5%	
NCA1206NPO331J16TRPF			330	±5%	
NCA1206NPO471J16TRPF			470	±5%	
NCA1206NPO100J25TRPF		25	10	±5%	
NCA1206NPO150J25TRPF			15	±5%	
NCA1206NPO220J25TRPF			22	±5%	
NCA1206NPO330J25TRPF			33	±5%	
NCA1206NPO470J25TRPF			47	±5%	
NCA1206NPO680J25TRPF			68	±5%	
NCA1206NPO101J25TRPF			100	±5%	
NCA1206NPO151J25TRPF			150	±5%	
NCA1206NPO181J25TRPF			180	±5%	
NCA1206NPO221J25TRPF			220	±5%	
NCA1206NPO271J25TRPF			270	±5%	
NCA1206NPO331J25TRPF			330	±5%	
NCA1206NPO471J25TRPF			470	±5%	
NCA1206NPO100J50TRPF		50	10	±5%	
NCA1206NPO150J50TRPF			15	±5%	
NCA1206NPO180J50TRPF			18	±5%	
NCA1206NPO220J50TRPF			22	±5%	
NCA1206NPO330J50TRPF			33	±5%	
NCA1206NPO390J50TRPF			39	±5%	
NCA1206NPO470J50TRPF			47	±5%	
NCA1206NPO560J50TRPF			56	±5%	
NCA1206NPO680J50TRPF			68	±5%	
NCA1206NPO101J50TRPF			100	±5%	
NCA1206NPO121J50TRPF			120	±5%	
NCA1206NPO151J50TRPF			150	±5%	
NCA1206NPO181J50TRPF			180	±5%	
NCA1206NPO221J50TRPF			220	±5%	
NCA1206NPO271J50TRPF			270	±5%	
NCA1206NPO331J50TRPF			330	±5%	
NCA1206NPO391J50TRPF			390	±5%	
NCA1206NPO471J50TRPF			470	±5%	
NCA1206NPO100J100TRPF			100	10	±5%
NCA1206NPO150J100TRPF				15	±5%
NCA1206NPO220J100TRPF	22			±5%	
NCA1206NPO330J100TRPF	33	±5%			
NCA1206NPO470J100TRPF	47	±5%			
NCA1206NPO680J100TRPF	68	±5%			
NCA1206NPO101J100TRPF	100	±5%			
NCA1206NPO151J100TRPF	150	±5%			
NCA1206NPO221J100TRPF	220	±5%			
NCA1206NPO331J100TRPF	330	±5%			
NCA1206NPO471J100TRPF	470	±5%			

NPO 1206 STANDARD VALUES AND VOLTAGES (CONTINUED ON NEXT PAGE)



## X7R 0805 STANDARD VALUES AND VOLTAGES

Part Number	Case Size	Voltage	Capacitance (pF)	Standard Tol.	
NCA0805X7R102K10TRPF	0805	10	1,000	±10%	
NCA0805X7R222K10TRPF			2,200	±10%	
NCA0805X7R472K10TRPF			4,700	±10%	
NCA0805X7R103K10TRPF			10,000	±10%	
NCA0805X7R223K10TRPF			22,000	±10%	
NCA0805X7R473K10TRPF			47,000	±10%	
NCA0805X7R104K10TRPF			100,000	±10%	
NCA0805X7R102K16TRPF		16	16	1,000	±10%
NCA0805X7R222K16TRPF				2,200	±10%
NCA0805X7R472K16TRPF				4,700	±10%
NCA0805X7R103K16TRPF				10,000	±10%
NCA0805X7R223K16TRPF				22,000	±10%
NCA0805X7R273K16TRPF				27,000	±10%
NCA0805X7R473K16TRPF				47,000	±10%
NCA0805X7R104K16TRPF		100,000	±10%		
NCA0805X7R102K25TRPF		25	25	1,000	±10%
NCA0805X7R222K25TRPF				2,200	±10%
NCA0805X7R472K25TRPF				4,700	±10%
NCA0805X7R103K25TRPF				10,000	±10%
NCA0805X7R102K50TRPF		50	50	1,000	±10%

## X7R 1206 STANDARD VALUES AND VOLTAGES

Part Number	Case Size	Voltage	Capacitance (pF)	Standard Tol.	
NCA1206X7R103K16TRPF	1206	16	10,000	±10%	
NCA1206X7R223K16TRPF			22,000	±10%	
NCA1206X7R333K16TRPF			33,000	±10%	
NCA1206X7R473K16TRPF			47,000	±10%	
NCA1206X7R683K16TRPF			68,000	±10%	
NCA1206X7R104K16TRPF			100,000	±10%	
NCA1206X7R331K25TRPF		25	25	330	±10%
NCA1206X7R471K25TRPF				470	±10%
NCA1206X7R102K25TRPF				1,000	±10%
NCA1206X7R152K25TRPF				1,500	±10%
NCA1206X7R222K25TRPF				2,200	±10%
NCA1206X7R332K25TRPF				3,300	±10%
NCA1206X7R472K25TRPF				4,700	±10%
NCA1206X7R682K25TRPF				6,800	±10%
NCA1206X7R822K25TRPF				8,200	±10%
NCA1206X7R103K25TRPF				10,000	±10%
NCA1206X7R223K25TRPF				22,000	±10%
NCA1206X7R473K25TRPF				47,000	±10%
NCA1206X7R104K25TRPF				100,000	±10%

X7R 0805 STANDARD VALUES AND VOLTAGES (CONTINUED ON NEXT PAGE)

## X7R 1206 STANDARD VALUES AND VOLTAGES

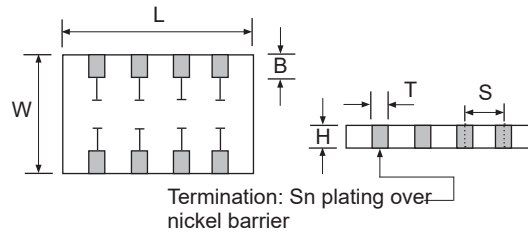
Part Number	Case Size	Voltage	Capacitance (pF)	Standard Tol.
NCA1206X7R221K50TRPF	1206	50	220	±10%
NCA1206X7R271K50TRPF			270	±10%
NCA1206X7R331K50TRPF			330	±10%
NCA1206X7R391K50TRPF			390	±10%
NCA1206X7R471K50TRPF			470	±10%
NCA1206X7R561K50TRPF			560	±10%
NCA1206X7R681K50TRPF			680	±10%
NCA1206X7R821K50TRPF			820	±10%
NCA1206X7R102K50TRPF			1,000	±10%
NCA1206X7R152K50TRPF			1,500	±10%
NCA1206X7R222K50TRPF			2,200	±10%
NCA1206X7R332K50TRPF			3,300	±10%
NCA1206X7R472K50TRPF			4,700	±10%
NCA1206X7R562K50TRPF			5,600	±10%
NCA1206X7R682K50TRPF			6,800	±10%
NCA1206X7R822K50TRPF			8,200	±10%
NCA1206X7R103K50TRPF			10,000	±10%
NCA1206X7R153K50TRPF			15,000	±10%
NCA1206X7R223K50TRPF			22,000	±10%
NCA1206X7R333K50TRPF			33,000	±10%
NCA1206X7R473K50TRPF	47,000	±10%		
NCA1206X7R104K50TRPF	100,000	±10%		

## X5R 0805 STANDARD VALUES AND VOLTAGES

Part Number	Case Size	Voltage	Capacitance (pF)	Standard Tol.
NCA0805X5R104K16TRPF	0805	16	100,000	±10%

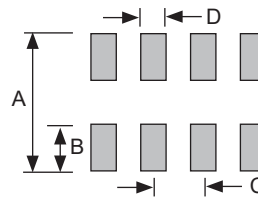
## PART DIMENSIONS (mm)

Series	NCA0805	NCA1206
L	2.00 ± 0.20	3.20 ± 0.20
W	1.25 ± 0.20	1.60 ± 0.20
H	1.00 max.	1.30 max.
S	0.50 ± 0.10	0.80 ± 0.20
T	0.28 ± 0.10	0.40 ± 0.15
B	0.25 ± 0.15	0.30 ± 0.20

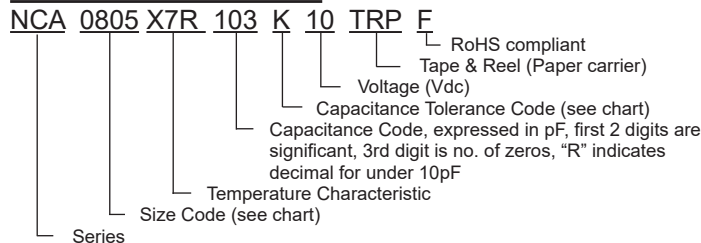


## RECOMMENDED LAND PATTERN (mm)

Series	A	B	C	D
NCA0805	1.65 ± 0.10	0.55 ± 0.05	0.5 ± 0.05	0.25 ± 0.05
NCA1206	2.60 ± 0.10	0.80 ± 0.05	0.8 ± 0.10	0.45 ± 0.1



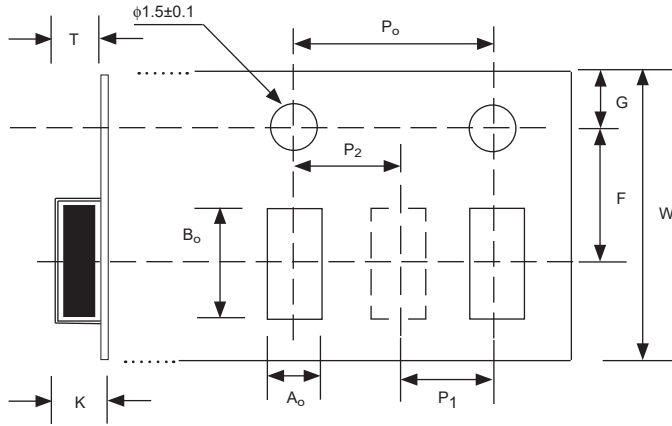
## PART NUMBER SYSTEM



## TAPE DIMENSIONS (mm)

A <sub>0</sub>	B <sub>0</sub>	F	G	K	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	T	W
See note 1		3.50 ±0.05	1.75 ±0.1	2.50 max.	4.0 ±0.1	4.0 ±0.1	2.0 ±0.05	0.6 max.	8.0 ±0.3

Note 1 - These dimensions are determined by the maximum dimensions of the part. Clearance between the sides of the components shall be 0.05mm (min.) and 0.50mm (max). The clearance shall not allow the component to rotate more than 20° within the carrier cavity.



## REEL DIMENSIONS (mm)

A	B	C	D	E	W
178 ± 2.0	50 min.	13.0 ± 0.2	20.2 min.	1.5 min.	8.4 ± 1.0

