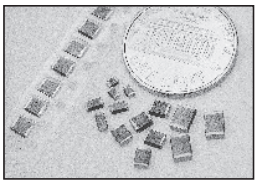
NCB-A Series
Surface Mount Ferrite Beads

FEATURES
- RUGGED CONSTRUCTION IN STANDARD EIA SIZES
- AEC-Q200 QUALIFIED
- EFFECTIVE EM/RFI SUPPRESSION UP TO 100MHz
- IMPEDANCE RATINGS UP TO 2700 OHMS
- OPERATING TEMPERATURE RANGE: -55°C TO +125˚C*

*+125°C includes ambient + self-heating

RoHS Compliant
includes all homogeneous materials

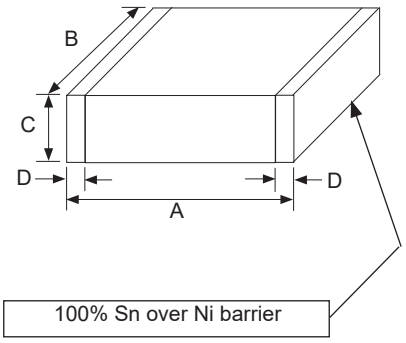
*See Part Number System for Details



STANDARD VALUES AND CASE SIZES (mm)

EIA Size	NIC Part Number	Impedance at 100MHz Ω ±25%	DC Resistance Max. (Ω)	DC Current Max. (mA)	A (mm)	B (mm)	C (mm)	D (mm)
0201	NCB-A0201V100TR050QYF	10	0.10	500	0.60 ± 0.03	0.30 ± 0.03	0.30 ± 0.03	0.10 min
	NCB-A0201V600TR015QYF	60	0.90	150				
	NCB-A0201V121TR030QYF	120	0.35	300				
	NCB-A0201V221TR020QYF	220	0.45	200				
	NCB-A0201V241TR020QYF	240	0.75	200				
	NCB-A0201V301TR020QYF	300	0.80	200				
	NCB-A0201V601TR010QYF	600	1.50	100				
0402	NCB-A0402K100TR030QYF	10	0.20	300	1.0 ± 0.10	0.5 ± 0.10	0.5 ± 0.10	0.10 min
	NCB-A0402K110TR050QYF	11	0.20	500				
	NCB-A0402V110TR050QYF	11	0.05	500				
	NCB-A0402V150TR060QYF	15	0.10	600				
	NCB-A0402K190TR050QYF	19	0.20	500				
	NCB-A0402V190TR050QYF	19	0.08	500				
	NCB-A0402K220TR050QYF	22	0.20	500				
	NCB-A0402V220TR050QYF	22	0.08	500				
	NCB-A0402V300TR030QYF	30	0.20	300				
	NCB-A0402K300TR050QYF	30	0.20	500				
	NCB-A0402V300TR050QYF	30	0.15	500				
	NCB-A0402V320TR050QYF	32	0.15	500				
	NCB-A0402V330TR050QYF	33	0.15	500				

STANDARD VALUES AND CASE SIZES CONTINUE ON NEXT PAGE



PART NUMBER SYSTEM

NCB-HA 0402 VR 100 TR 100 QY F

- F — RoHS Compliant
- QY — "QY" denotes suitable for Automotive equipment*
- 100 — DC Current Rating (see standard values and case size table)
- TR — Packaging: TR = Tape and Reel
- 100 — Impedance at 100Mhz; 3 digit code; first two digits are significant third digit is no. of zeros
- VR — Performance Code (1 or 2 characters)
- 0402 — Case Size
- NCB-HA — Series

*Suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site.

STANDARD VALUES AND CASE SIZES (mm)

EIA Size	NIC Part Number	Impedance at 100MHz Ω ±25%	DC Resistance Max. (Ω)	DC Current Max. (mA)	A (mm)	B (mm)	C (mm)	D (mm)
0402	NCB-A0402K400TR050QYF	40	0.25	500	1.0 ± 0.10	0.5 ± 0.10	0.5 ± 0.10	0.10 min
	NCB-A0402V400TR050QYF	40	0.15	500				
	NCB-A0402K470TR050QYF	47	0.25	500				
	NCB-A0402V470TR060QYF	47	0.13	600				
	NCB-A0402V500TR050QYF	50	0.10	500				
	NCB-A0402K600TR050QYF	60	0.25	500				
	NCB-A0402V600TR050QYF	60	0.15	500				
	NCB-A0402V600TR060QYF	60	0.15	600				
	NCB-A0402V600TR065QYF	60	0.20	650				
	NCB-A0402V700TR070QYF	70	0.14	700				
	NCB-A0402V750TR050QYF	75	0.20	500				
	NCB-A0402K800TR050QYF	80	0.19	500				
	NCB-A0402V800TR050QYF	80	0.15	500				
	NCB-A0402V900TR060QYF	90	0.25	600				
	NCB-A0402K101TR050QYF	100	0.30	500				
	NCB-A0402V101TR050QYF	100	0.25	500				
	NCB-A0402V121TR030QYF	120	0.55	300				
	NCB-A0402K121TR040QYF	120	0.30	400				
	NCB-A0402V121TR050QYF	120	0.25	500				
	NCB-A0402V121TR055QYF	120	0.19	550				
	NCB-A0402K121TR060QYF	120	0.30	600				
	NCB-A0402V151TR040QYF	150	0.40	400				
	NCB-A0402K181TR040QYF	180	0.40	400				
	NCB-A0402V181TR040QYF	180	0.30	400				
	NCB-A0402V221TR030QYF	220	0.30	300				
	NCB-A0402K221TR050QYF	220	0.40	500				
	NCB-A0402V221TR070QYF	220	0.28	700				
	NCB-A0402K241TR040QYF	240	0.40	400				
	NCB-A0402V241TR040QYF	240	0.33	400				
	NCB-A0402K301TR030QYF	300	0.50	300				
	NCB-A0402V301TR030QYF	300	0.40	300				
	NCB-A0402V331TR030QYF	330	0.50	300				
	NCB-A0402VF331TR030QYF	330	0.50	300				
	NCB-A0402V471TR030QYF	470	0.50	300				
	NCB-A0402V481TR030QYF	480	0.50	300				
	NCB-A0402V601TR020QYF	600	0.80	200				
	NCB-A0402V601TR030QYF	600	0.60	300				
	NCB-A0402VR601TR030QYF	600	0.50	300				
	NCB-A0402V102TR020QYF	1000	1.00	200				
	NCB-A0402V102TR030QYF	1000	0.58	300				
	NCB-A0402V182TR010QYF	1800	1.15	100				
0603	NCB-A0603V100TR050QYF	10	0.05	500	1.6 ± 0.15	0.8 ± 0.15	0.8 ± 0.15	0.10 min.
	NCB-A0603K100TR050QYF	10	0.20	500				
	NCB-A0603V110TR050QYF	11	0.05	500				
	NCB-A0603K300TR040QYF	30	0.20	400				
	NCB-A0603V300TR040QYF	30	0.10	400				
	NCB-A0603K310TR040QYF	31	0.20	400				
	NCB-A0603V310TR040QYF	31	0.10	400				
	NCB-A0603K600TR040QYF	60	0.20	400				
	NCB-A0603V600TR050QYF	60	0.10	500				
	NCB-A0603V750TR050QYF	75	0.30	500				
	NCB-A0603K800TR040QYF	80	0.20	400				
	NCB-A0603V800TR040QYF	80	0.15	400				
	NCB-A0603V800TR045QYF	80	0.25	450				
	NCB-A0603V800TR080QYF	80	0.10	800				
	NCB-A0603V121TR020QYF	120	0.20	200				

STANDARD VALUES AND CASE SIZES CONTINUE ON NEXT PAGE

STANDARD VALUES AND CASE SIZES (mm)

EIA Size	NIC Part Number	Impedance at 100MHz Ω ±25%	DC Resistance Max. (Ω)	DC Current Max. (mA)	A (mm)	B (mm)	C (mm)	D (mm)
0603	NCB-A0603K121TR040QYF	120	0.25	400	1.6 ± 0.15	0.8 ± 0.15	0.8 ± 0.15	0.10 min.
	NCB-A0603V121TR040QYF	120	0.15	400				
	NCB-A0603V221TR020QYF	220	0.20	200				
	NCB-A0603K221TR030QYF	220	0.30	300				
	NCB-A0603V221TR040QYF	220	0.20	400				
	NCB-A0603K301TR030QYF	300	0.35	300				
	NCB-A0603V301TR040QYF	300	0.30	400				
	NCB-A0603V331TR020QYF	330	0.25	200				
	NCB-A0603K471TR030QYF	470	0.45	300				
	NCB-A0603V471TR030QYF	470	0.50	300				
	NCB-A0603V471TR035QYF	470	0.45	350				
	NCB-A0603K471TR060QYF	470	0.45	600				
	NCB-A0603V601TR020QYF	600	0.50	200				
	NCB-A0603K601TR030QYF	600	0.50	300				
	NCB-A0603V601TR030QYF	600	0.35	300				
	NCB-A0603V102TR005QYF	1000	1.10	50				
	NCB-A0603V102TR020QYF	1000	0.60	200				
	NCB-A0603K102TR030QYF	1000	0.70	300				
	NCB-A0603V102TR030QYF	1000	0.55	300				
	NCB-A0603V102TR040QYF	1000	0.50	400				
	NCB-A0603V102TR080QYF	1000	0.25	800				
	NCB-A0603H152TR030QYF	1500	1.00	300				
	NCB-A0603V152TR030QYF	1500	0.60	300				
	NCB-A0603V152TR050QYF	1500	0.40	500				
	NCB-A0603H182TR020QYF	1800	1.00	200				
	NCB-A0603V182TR020QYF	1800	0.75	200				
	NCB-A0603H202TR020QYF	2000	1.20	200				
	NCB-A0603V202TR020QYF	2000	0.75	200				
	NCB-A0603V222TR005QYF	2200	0.80	50				
	NCB-A0603V222TR020QYF	2200	0.75	200				
	NCB-A0603V252TR005QYF	2500	1.00	50				
	NCB-A0603H252TR010QYF	2500	1.50	100				
	NCB-A0603V252TR020QYF	2500	0.80	200				
	NCB-A0603V272TR020QYF	2700	0.80	200				
0805	NCB-A0805K600TR050QYF	60	0.10	500	2.0 ± 0.20	1.25 ± 0.20	0.90 ± 0.25	0.20 min.
	NCB-A0805V600TR050QYF	60	0.15	500				
	NCB-A0805V750TR070QYF	75	0.16	700				
	NCB-A0805K800TR050QYF	80	0.20	500				
	NCB-A0805V800TR050QYF	80	0.15	500				
	NCB-A0805K121TR030QYF	120	0.20	300				
	NCB-A0805V121TR030QYF	120	0.20	300				
	NCB-A0805VF121TR030QYF	120	0.20	300				
	NCB-A0805K221TR030QYF	220	0.30	300				
	NCB-A0805V221TR030QYF	220	0.25	300				
	NCB-A0805K301TR030QYF	300	0.30	300				
	NCB-A0805V301TR030QYF	300	0.25	300				
	NCB-A0805V431TR030QYF	430	0.35	300				
	NCB-A0805K471TR030QYF	470	0.35	300				
	NCB-A0805V471TR030QYF	470	0.35	300				
	NCB-A0805K601TR030QYF	600	0.40	300				
	NCB-A0805V601TR030QYF	600	0.35	300				
	NCB-A0805V601TR050QYF	600	0.30	500				
	NCB-A0805K102TR020QYF	1000	0.45	200				
	NCB-A0805V102TR020QYF	1000	0.45	200				
	NCB-A0805VF102TR020QYF	1000	0.45	200				
	NCB-A0805V122TR030QYF	1200	0.60	300				
	NCB-A0805H152TR020QYF	1500	0.50	200				
	NCB-A0805V152TR020QYF	1500	0.45	200				
	NCB-A0805V152TR050QYF	1500	0.40	500				
	NCB-A0805V182TR020QYF	1800	0.60	200				

STANDARD VALUES AND CASE SIZES CONTINUE ON NEXT PAGE

STANDARD VALUES AND CASE SIZES (mm)

EIA Size	NIC Part Number	Impedance at 100MHz Ω ±25%	DC Resistance Max. (Ω)	DC Current Max. (mA)	A (mm)	B (mm)	C (mm)	D (mm)
0805	NCB-A0805V202TR020QYF	2000	0.45	200	2.0 ± 0.20	1.25 ± 0.20	0.90 ± 0.25	0.20 min
	NCB-A0805VR202TR020QYF	2000	0.60	200				
	NCB-A0805H202TR020QYF	2000	0.60	250				
	NCB-A0805V222TR020QYF	2200	0.50	200				
	NCB-A0805VK222TR020QYF	2200	0.60	200				
	NCB-A0805V252TR020QYF	2500	0.70	200				
	NCB-A0805V252TR040QYF	2500	0.50	400				
	NCB-A0805V272TR020QYF	2700	0.70	200				
	NCB-A0805H222TR020QYF	2200	0.70	200	2.0 ± 0.20	1.25 ± 0.20	1.25 ± 0.20	0.20 min
	NCB-A0805H252TR020QYF	2500	1.10	200				
	NCB-A0805H272TR020QYF	2700	1.10	200				
1206	NCB-A1206K900TR050QYF	90	0.20	500	3.2 ± 0.20	1.6 ± 0.20	1.1 ± 0.20	0.20 min.
	NCB-A1206K121TR050QYF	120	0.15	500				
	NCB-A1206V121TR050QYF	120	0.15	500				
	NCB-A1206K471TR040QYF	470	0.35	400				
	NCB-A1206V471TR040QYF	470	0.20	400				
	NCB-A1206V601TR035QYF	600	0.25	350				
	NCB-A1206K601TR040QYF	600	0.40	400				
	NCB-A1206V601TR040QYF	600	0.23	400				
	NCB-A1206V900TR050QYF	900	0.15	500				
	NCB-A1206H102TR020QYF	1000	0.60	200				
	NCB-A1206V102TR035QYF	1000	0.40	350				
	NCB-A1206V102TR050QYF	1000	0.35	500				
	NCB-A1206V122TR035QYF	1200	0.35	350				
	NCB-A1206K152TR020QYF	1500	0.70	200				
	NCB-A1206V152TR035QYF	1500	0.40	350				
	NCB-A1206V152TR050QYF	1500	0.30	500				
	NCB-A1206V252TR020QYF	2500	0.70	200				

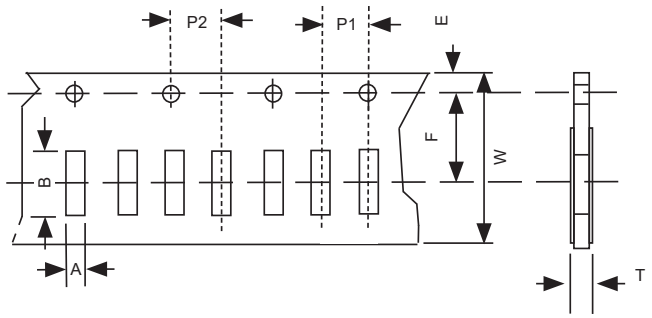
ENVIRONMENTAL TEST

ITEM	TEST	TEST METHOD	TEST CONDITIONS
1	High Temperature Exposure (Storage)	MIL-STD-202 Method 108	150°C, 1,000 Hours
2	Temperature Cycling	JESD22 Method JA-104	Min temp. → 25°C → Max temp., 1,000 cycle
3	Biased Humidity	MIL-STD-202 Method 103	85°C, 85% RH, Max. Rated Current, 1,000 Hours
4	High Temperature Operating Life	MIL-STD-202 Method 108	Max temp, Max. Rated Current for 1,000 Hours
5	Resistance to Solvents	MIL-STD-202 Method 215	OKEM clean or equivalent
6	Vibration	MIL-STD-202 Method 204	10~2,000Hz, 5G's for 20 minutes, Total 36 cycles
7	Resistance to Solder Heat	Immersion	260°C, 10 seconds
8	Thermal Shock	MIL-STD-202 Method 107	Min temp (15 minutes)→Max temp (15 minutes), air to air, 300 cycle
9	ESD	Direct Contact Discharge	2kV
10	Solderability (Dry heat)	J-STD-002	155°C, 4 Hours @ 245°C, 5 seconds
11	Board Flex	AEC-Q200-005	Deflection Point = 2mm min. for 60 seconds
12	Terminal Strength (SMD)	AEC-Q200-006	1.8Kg. for 60±1 sec.
13	Flammability	UL94-V0/V1	Electrical Test Not Required

TAPE DIMENSIONS (mm)

Dimensions	NCB-A0201	NCB-A0402
A	0.38 ± 0.04	0.62 ± 0.05
B	0.68 ± 0.04	1.12 ± 0.05
T	0.65 max.	0.65 max.
W	8.00 ± 0.30	
E	1.75 ± 0.05	1.75 ± 0.10
F	3.50 ± 0.05	
P1	2.00 ± 0.05	
P2	2.00 ± 0.10	
Chips/Reel	15,000	10,000
Fig.	1	1

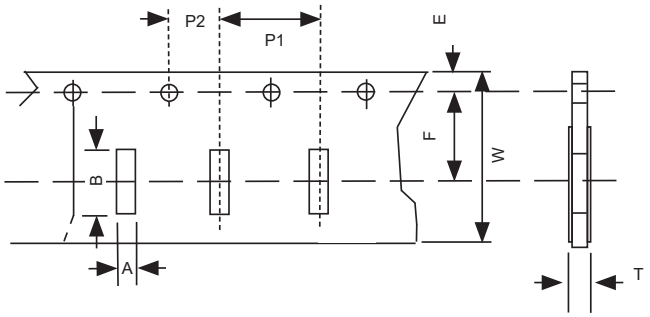
FIGURE 1 PAPER CARRIER



TAPE DIMENSIONS (mm)

Dimensions	NCB-A0603	NCB-A0805
A	1.03 ± 0.10	1.45 ± 0.20
B	1.85 ± 0.10	2.25 ± 0.20
T	1.00 max.	1.00 max.
W	8.00 ± 0.10	
E	1.75 ± 0.10	
F	3.50 ± 0.10	
P1	4.00 ± 0.10	
P2	2.00 ± 0.10	
Chips/Reel	4,000	4,000
Fig.	2	2

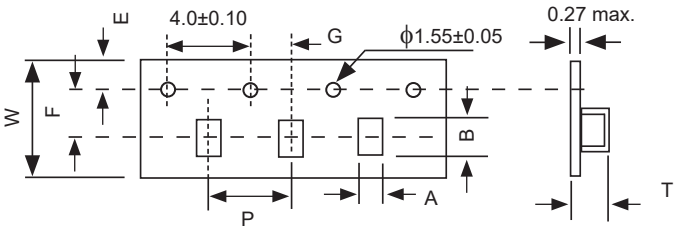
FIGURE 2 PAPER CARRIER



TAPE DIMENSIONS (mm)

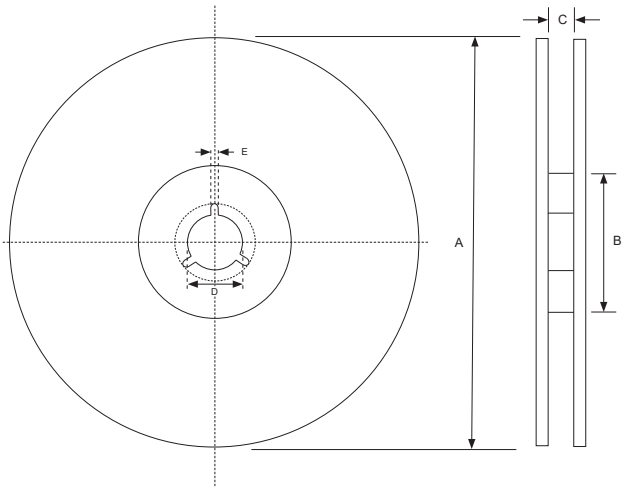
Dimensions	NCB-A1206
A	1.88 ± 0.25
B	3.50 ± 0.25
T	1.74 max.
W	8.0 ± 0.20
E	1.75 ± 0.10
F	3.50 ± 0.05
P	4.00 ± 0.10
Chips/Reel	3,000
Fig.	3

FIGURE 3 EMBOSSED PLASTIC CARRIER



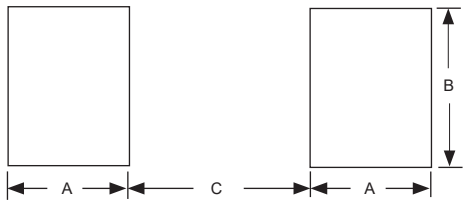
REEL DIMENSIONS

Case Size	REEL DIMENSIONS (mm)				
	A	B	C	D	E
0201	178 ± 2.0	50 min.	8.5 min.	13.0 min.	2.0 nom.
0402					
0603					
0805					
1206					



LAND PATTERN DIMENSIONS (mm)

Size	A	B	C
0201	0.22	0.32	0.25
0402	0.50	0.60	0.40
0603	0.80	0.95	0.85
0805	1.05	1.45	1.00
1206	1.05	1.80	2.20



REFLOW SOLDERING PROFILE