High Current Ferrite Beads For Automotive Use NCB-HA Series

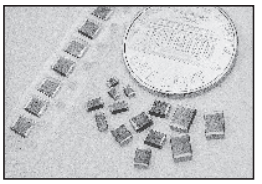
FEATURES

- RUGGED CONSTRUCTION IN STANDARD EIA SIZES
- AEC-Q200 QUALIFIED
- EFFECTIVE EM/RFI SUPPRESSION UP TO 100MHz
- IMPEDANCE RATINGS UP TO 2000 OHMS
- CURRENT RATINGS UP TO 6 AMPS
- OPERATING TEMPERATURE RANGE: -55˚C TO +125˚C*

*+125°C includes ambient + self-heating

RoHS Compliant
includes all homogeneous materials

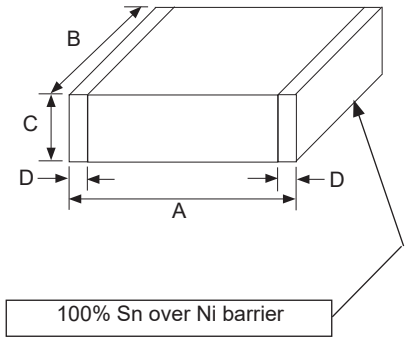
*See Part Number System for Details



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-HA0201V100TR100QYF	10	0.05	1000	0.60 ± 0.03	0.30 ± 0.03	0.30 ± 0.03	0.10 min
0402	NCB-HA0402V100TR100QYF	10	0.05	1000	1.0 ± 0.10	0.5 ± 0.10	0.5 ± 0.10	0.10 min
	NCB-HA0402VR100TR100QYF	10	0.025	1000				
	NCB-HA0402K100TR200QYF	10	0.10	2000				
	NCB-HA0402V300TR100QYF	30	0.08	1000				
	NCB-HA0402V300TR170QYF	30	0.05	1700				
	NCB-HA0402V700TR120QYF	70	0.09	1200				
	NCB-HA0402K121TR200QYF	120	0.10	2000				
	NCB-HA0402K221TR150QYF	220	0.15	1500				
0603	NCB-HA0603V300TR100QYF	30	0.05	1000	1.6 ± 0.15	0.8 ± 0.15	0.8 ± 0.15	0.10 min.
	NCB-HA0603K300TR300QYF	30	0.04	3000				
	NCB-HA0603V300TR500QYF	30	0.01	5000				
	NCB-HA0603K800TR300QYF	80	0.04	3000				
	NCB-HA0603K121TR200QYF	120	0.10	2000				
	NCB-HA0603V121TR200QYF	120	0.05	2000				
	NCB-HA0603V121TR300QYF	120	0.04	3000				
	NCB-HA0603K151TR200QYF	150	0.10	2000				

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)
0603	NCB-HA0603K221TR200QYF	220	0.10	2000	1.6 ± 0.15	0.8 ± 0.15	0.8 ± 0.15	0.10 min.
	NCB-HA0603K221TR250QYF	220	0.05	2500				
	NCB-HA0603V221TR300QYF	220	0.05	3000				
	NCB-HA0603K301TR100QYF	300	0.20	1000				
	NCB-HA0603K471TR100QYF	470	0.20	1000				
	NCB-HA0603K601TR100QYF	600	0.20	1000				
	NCB-HA0603V601TR100QYF	600	0.30	1000				
0805	NCB-HA0805V270TR300QYF	27	0.04	3000	2.0 ± 0.20	1.25 ± 0.20	0.9 ± 0.25	0.20 min.
	NCB-HA0805K300TR300QYF	30	0.04	3000				
	NCB-HA0805V300TR500QYF	30	0.01	5000				
	NCB-HA0805K300TR600QYF	30	0.01	6000				
	NCB-HA0805V600TR400QYF	60	0.02	4000				
	NCB-HA0805V750TR100QYF	75	0.10	1000				
	NCB-HA0805K800TR300QYF	80	0.04	3000				
	NCB-HA0805K101TR400QYF	100	0.02	4000				
	NCB-HA0805K121TR200QYF	120	0.10	2000				
	NCB-HA0805V121TR300QYF	120	0.04	3000				
	NCB-HA0805K151TR200QYF	150	0.10	2000				
	NCB-HA0805K221TR200QYF	220	0.10	2000				
	NCB-HA0805V221TR200QYF	220	0.09	2000				
	NCB-HA0805V221TR300QYF	220	0.04	3000				
	NCB-HA0805K301TR100QYF	300	0.20	1000				
	NCB-HA0805V331TR150QYF	330	0.09	1500				
	NCB-HA0805V331TR300QYF	330	0.05	3000				
	NCB-HA0805K471TR100QYF	470	0.20	1000				
	NCB-HA0805K601TR100QYF	600	0.20	1000				
	NCB-HA0805V601TR200QYF	600	0.10	2000				
	NCB-HA0805V102TR150QYF	1000	0.12	1500				
	NCB-HA0805V152TR100QYF	1500	0.30	1000				
	NCB-HA0805V202TR100QYF	2000	0.30	1000				
1206	NCB-HA1206V260TR300QYF	26	0.03	3000	3.2 ± 0.20	1.6 ± 0.20	1.1 ± 0.20	0.20 min.
	NCB-HA1206K300TR300QYF	30	0.04	3000				
	NCB-HA1206K330TR600QYF	33	0.01	6000				
	NCB-HA1206K500TR300QYF	50	0.04	3000				
	NCB-HA1206V500TR350QYF	50	0.015	3500				
	NCB-HA1206K500TR600QYF	50	0.01	6000				
	NCB-HA1206K800TR300QYF	80	0.04	3000				
	NCB-HA1206V800TR400QYF	80	0.02	4000				
	NCB-HA1206K121TR200QYF	120	0.10	2000				
	NCB-HA1206V121TR300QYF	120	0.025	3000				
	NCB-HA1206K121TR500QYF	120	0.02	5000				
	NCB-HA1206V121TR600QYF	120	0.012	6000				
	NCB-HA1206K151TR200QYF	150	0.10	2000				
	NCB-HA1206K301TR100QYF	300	0.20	1000				
	NCB-HA1206V301TR300QYF	300	0.06	3000				
	NCB-HA1206K471TR100QYF	470	0.20	1000				
	NCB-HA1206K501TR300QYF	500	0.04	3000				
	NCB-HA1206K601TR200QYF	600	0.10	2000				
	NCB-HA1206V601TR200QYF	600	0.08	2000				
	NCB-HA1206V102TR100QYF	1000	0.30	1000				
	NCB-HA1206V102TR150QYF	1000	0.15	1500				
1806	NCB-HA1806K600TR600QYF	60	0.01	6000	4.5 ± 0.20	1.6 ± 0.20	1.6 ± 0.20	0.20 min.
	NCB-HA1806K800TR300QYF	80	0.04	3000				
1812	NCB-HA1812K800TR600QYF	80	0.01	6000	4.5 ± 0.20	3.2 ± 0.20	1.5 ± 0.20	0.20 min.
	NCB-HA1812K121TR500QYF	120	0.02	5000				
	NCB-HA1812K131TR300QYF	130	0.04	3000				
	NCB-HA1812K151TR500QYF	150	0.02	5000				

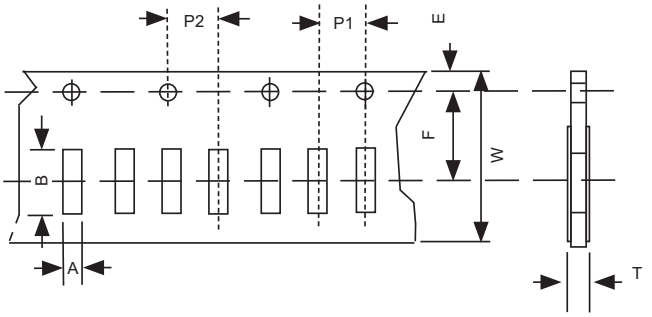
ENVIRONMENTAL TEST

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-HA0201	NCB-HA0402
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

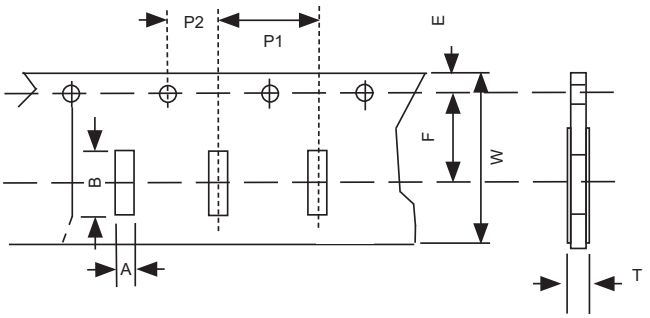
FIGURE 1 PAPER CARRIER



TAPE DIMENSIONS (mm)

Dimensions	NCB-HA0603	NCB-HA0805
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

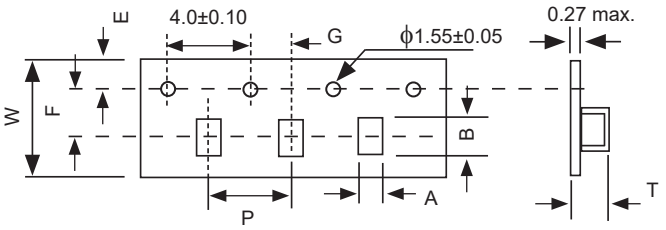
FIGURE 2 PAPER CARRIER



TAPE DIMENSIONS (mm)

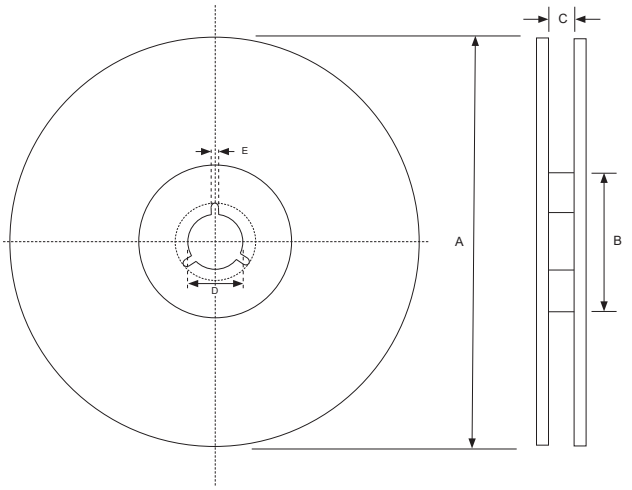
Dimensions	NCB-HA1206	NCB-HA1806	NCB-HA1812
A	1.88 ± 0.25	1.75 ± 0.10	3.45 ± 0.10
B	3.50 ± 0.25	4.70 ± 0.10	4.70 ± 0.10
T	1.74 max.	1.75 ± 0.10	1.60 ± 0.10
W	8.0 ± 0.20	12.0 ± 0.10	12.0 ± 0.10
E	1.75 ± 0.10	1.75 ± 0.10	1.75 ± 0.10
F	3.50 ± 0.05	5.50 ± 0.05	5.50 ± 0.05
P	4.00 ± 0.10	4.00 ± 0.10	8.00 ± 0.10
Chips/Reel	3,000	2,000	1,000
Fig.	3	3	3

FIGURE 3 EMBOSSED PLASTIC CARRIER



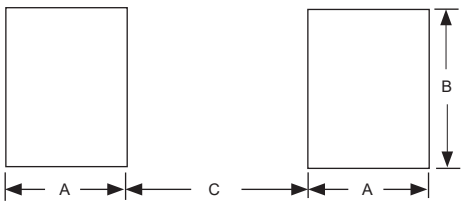
REEL DIMENSIONS

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					
1806			13.5 ± 0.5	13.5 ± 0.5	
1812					



LAND PATTERN DIMENSIONS (mm)

Size	A	B	C
0201	0.25	0.32	0.19
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
1806	1.05	3.30	1.80
1812	1.05	3.30	3.40



REFLOW SOLDERING PROFILE