Amorphous Cores

For Common-Mode Choke
For High Voltage Pulse Noise

NA Series

NA SERIES/CORE

FEATURES

- High saturation magnetic flux density gives excellent attenuation characteristics for high voltage pulse noise.
- Shows high impedance characteristics up to the high frequency band of 1MHz.
- Little degradation of magnetic permeability after pulse application seen on conventional amorphous cores.

APPLICATIONS

- Common-mode choke coils for high voltage pulses
- Computers, control devices and other digital equipment

PRODUCT IDENTIFICATIONS

CORE

NA11	T	22	X	10	X	14
(1)	(2)	(3)		(4)		(5)

(1) Material name
(2) Shape
T:Toroidal
(3) Outer diameter dimension
(4) Height dimension
(5) Inner diameter dimension

INDUCTOR

NA11	T	22	X	10	X	14	-	132
(1)	(2)	(3)		(4)		(5)		(6)

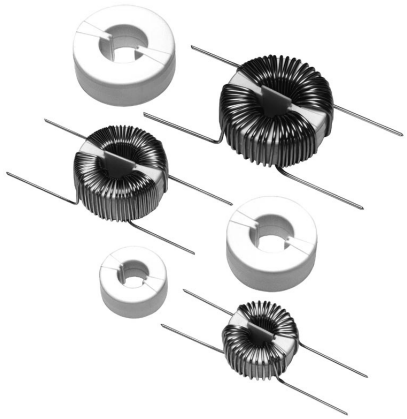
(1) Material name
(2) Shape
T:Toroidal
(3) Outer diameter dimension
(4) Height dimension
(5) Inner diameter dimension
(6) Inductance value code

OPERATING CONDITIONS

Temperature range	–40 to +120°C
Humidity range	0 to 95(%)RH[Maximum wet-bulb temperature:38°C]

STANDARD MATERIAL CHARACTERISTICS

Material			NA11
Initial permeability μi			4500±25%
Curie temperature Tc	(°C)		410
Saturation magnetic flux density Bs [H=8000A/m]	(mT)	at 25°C	1180
		at 60°C	1160
		at 80°C	1140
		at 100°C	1120
		at 120°C	1100
Remanent flux density Br	(mT)	at 25°C	80
		at 60°C	85
		at 80°C	94
		at 100°C	100
		at 120°C	106
Coercive force Hc	(A/m)	at 25°C	10
		at 60°C	9.4
		at 80°C	9.1
		at 100°C	8.9
		at 120°C	8.8
Density d_b	(kg/m^3)		7.2×10^3



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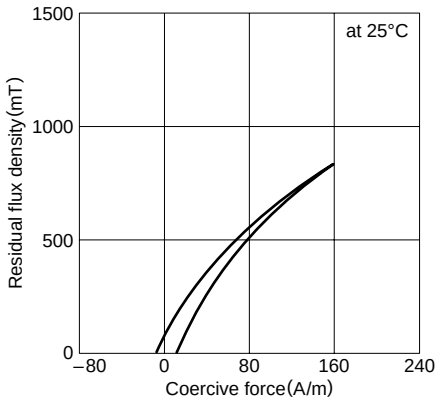
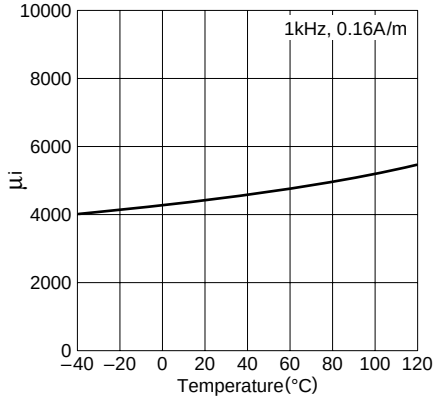
NA SERIES/CORE
TYPICAL MATERIAL CHARACTERISTICS

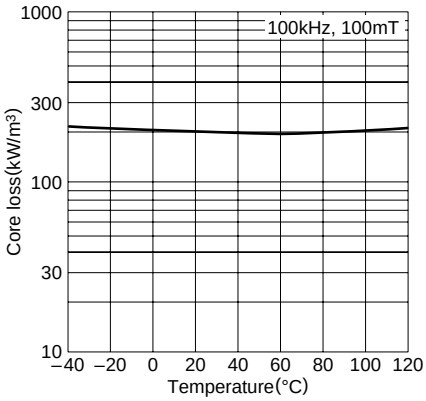
B-H CHARACTERISTICS



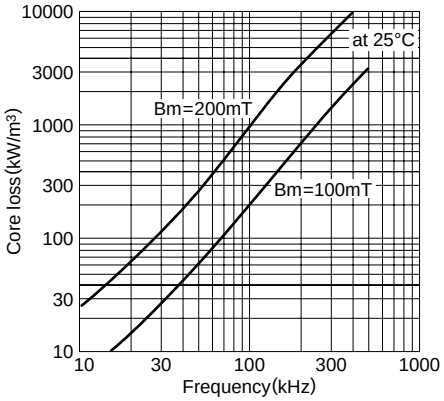
INITIAL PERMEABILITY vs. TEMPERATURE CHARACTERISTICS



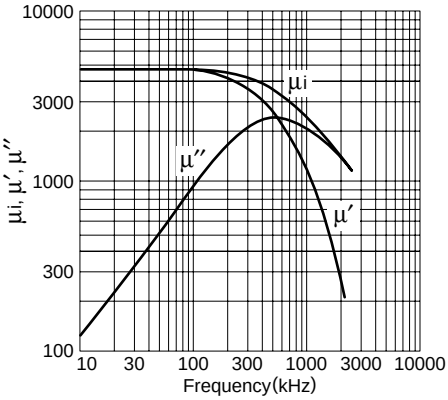
CORE LOSS vs. TEMPERATURE CHARACTERISTICS



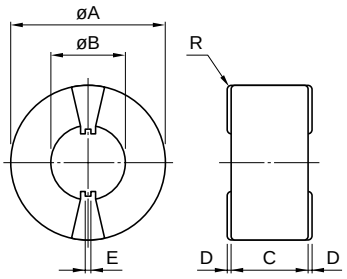
CORE LOSS vs. FREQUENCY CHARACTERISTICS

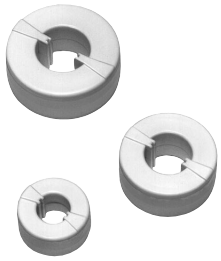


INITIAL PERMEABILITY vs. FREQUENCY CHARACTERISTICS



SHAPES AND DIMENSIONS/CHARACTERISTICS





Part No.	Dimensions(mm)max.						Core constant C_1 (mm^{-1})	Effective cross-sectional area Ae (mm^2)	Effective magnetic path length le (mm)	Effective core volume Ve (mm^3)	AL-value (nH/N^2) [at 16kHz]
	A	B	C	D	E	R					
NA11T22X10X14	24.8	11.5	12.5	0.5	1.2	1	1.434	37.89	54.32	2058	3490±25%
NA11T31X13X19	33.6	16.5	15.5	0.5	1.2	1	0.987	76.46	75.49	5772	5728±25%
NA11T38X13X22	40.7	19.5	15.5	0.5	1.2	1	0.906	98.4	89.17	8774	6240±25%
NA11T40X20X22	43.1	19.5	20.8	0.5	1.2	1	0.525	174.7	91.82	16044	10771±25%

• Case material: PBT(UL Grade 94V-0)

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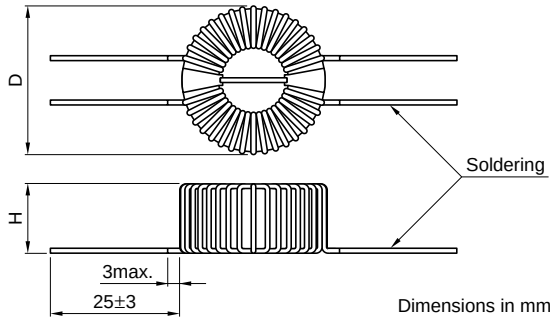
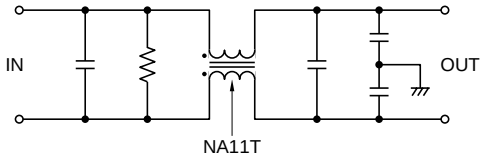
NA SERIES/INDUCTOR
COMMON-MODE CHOKE COILS

SHAPES AND DIMENSIONS/ELECTRICAL CHARACTERISTICS



Dimensions in mm

TYPICAL APPLICATION FOR COMMON-MODE CHOKE COIL

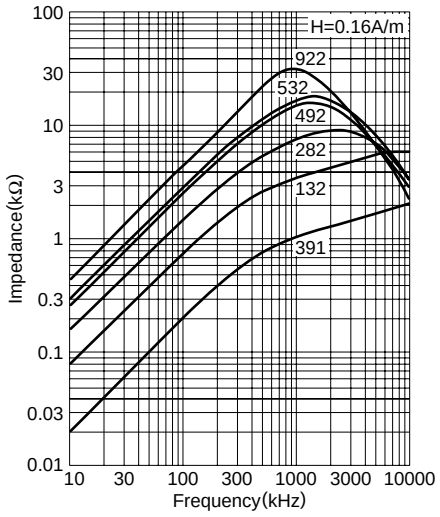


Part No.	Rated current Iac (A)	Inductance L (mH)[at 16kHz]	DC resistance Rdc (mΩ)max.	Winding diameter ø (mm)	Dimensions(mm)max. D	H
NA11T22X10X14-132	4	1.28±25%	35	0.8	28	17
NA11T22X10X14-391	5	0.39±25%	13	1	28	18
NA11T31X13X19-922	3	9.16±25%	129	0.7	36	21
NA11T31X13X19-282	7	2.77±25%	24	1.2	38	23
NA11T38X13X22-492	7	4.89±25%	33	1.2	45	23
NA11T38X13X22-532	5	5.25±25%	50	1	44	21

- Case material: PBT(UL Grade 94V-0)
- Coil:1UEW

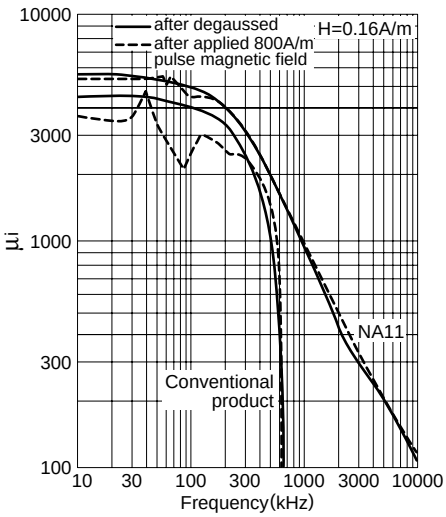
TYPICAL ELECTRICAL CHARACTERISTICS

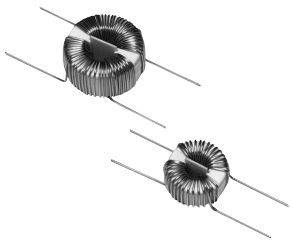
IMPEDANCE vs. FREQUENCY CHARACTERISTICS



•The number on the graph shows the last three digits of the product inductance code.

PULSE DEGRADATION OF THE INITIAL MAGNETIC PERMEABILITY





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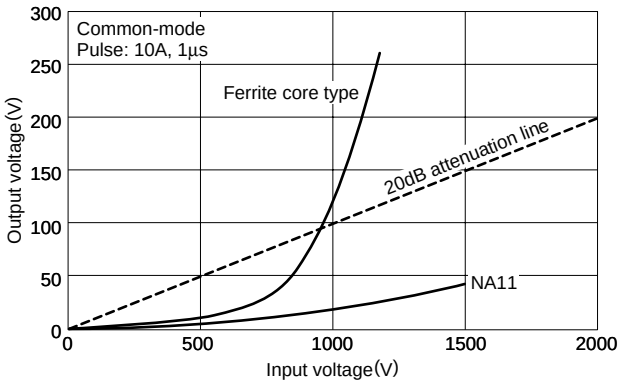
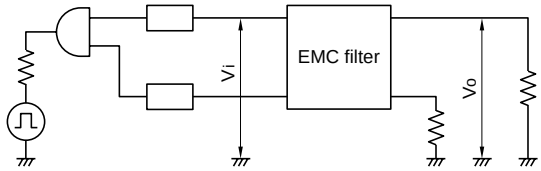
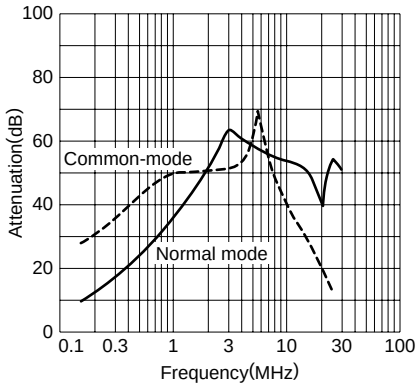
NA SERIES/INDUCTOR
TYPICAL ELECTRICAL CHARACTERISTICS
HIGH VOLTAGE PULSE ATTENUATION CHARACTERISTICS



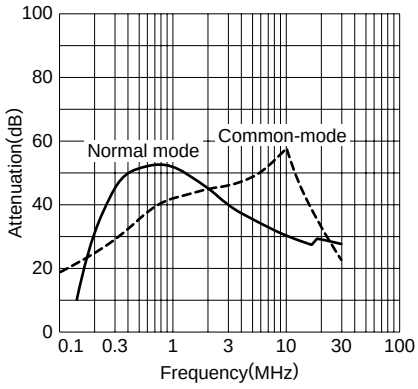


ATTENUATION CHARACTERISTICS

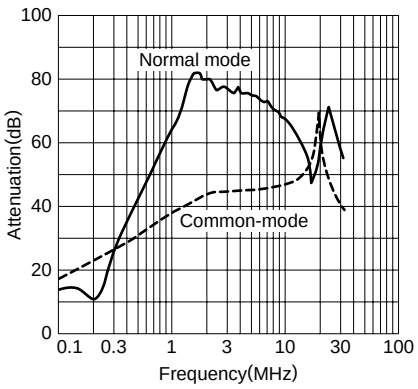
NA11T22X14X14



NA11T31X13X19



NA11T38X13X22



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