

COMMON MODE CHOKES

PRODUCT SUMMARY

Description N80 series common mode choke cores are made of nanocrystalline alloy of high permeability .

Recently, electromagnetic interference(EMI) considerations are increasingly important as electronic devices become part of our daily lives. This has rapidly increased the required performances for electromagnetic compatibility(EMC) components such as common mode chokes coils, which provide protection against incoming and outgoing high frequency noise. They also protect electronic devices against high voltage pulse noise generated by spark discharge, etc. These types of noise are created whenever there rapid transitions in voltage and/or current waveforms. In switching power supplies, the waveforms are periodic, but it's waveforms are non-periodic in case of data line for telecommunication. The application area of common chokes covers all products from telecommunication product for signal transmitting to switch-mode power supplies, frequency converters, and UPS units.

Common mode chokes are mainly used to provide attenuation of asymmetrical conducted interferences. Their design is determined by the specifications of the corresponding international standards and the specific interference suppression problem.

N80 series common mode chokes shows a higher insertion attenuation, that is insertion damping, overall the wide-range of frequency. The typical permeability of N80 series common mode choke is 80,000. To satisfy these requirements, SHINHOM will provide a higher level of common mode chokes with N80 series flat loop cores.

- Feature**
- High permeability
 - Reduce in size
 - Reduce the winding turns
 - Low DC resistance
 - Low core loss
 - High impedance overall the wide-range of frequency
 - Meet the EN500081 and EN 500082 standards.
 - Getting a suitable insertion loss in wide-range of frequency
 - Low profile (1~5mm height)

- Application**
- EMI common mode filtering
 - Telecommunications and data communications interface transformers
 - High accuracy current transformers
 - High accuracy pulse transformers
 - Ground fault protection devices

COMMON MODE CHOKES CORES

STANDARD CORE DIMENSIONS & SPECIFICATIONS

N80 Series Nanocrystalline Common Mode Choke Cores

Part No.	Core Dimensions(mm)			Case Dimensions(mm) ①			L _{eff} ②	A _{eff} ③	V _{eff} ④	A _L ⑤	Box type ⑥
	OD	ID	HT	OD	ID	HT	(mm)	(mm ²)	(mm ³)	(μH)	
N80-0703	7.2	4.3	2.8	8.0	3.5	3.5	18.0	3.0	55.0	9.0	a)
N80-1004	10.0	6.5	4.5	11.2	5.1	5.7	25.9	5.9	153.0	15.0	a)
N80-1005	10.0	6.5	5.0	11.2	5.1	6.5	25.9	6.6	170.0	16.5	a)
N80-1204	12.0	8.0	4.5	13.5	6.5	6.5	31.4	6.8	212.0	15.0	b)
N80-1205	14.0	10.0	5.0	15.5	8.5	6.8	31.4	7.5	236.0	16.5	b)
N80-1608	16.0	10.0	8.0	17.2	8.5	10.0	40.8	18.0	735.0	22.0	b)
N80-1908	19.0	14.0	8.0	22.5	12.1	12.2	51.8	15.0	777.0	17.5	b)
N80-2008	20.0	12.0	8.0	22.3	10.0	10.3	50.2	24.0	206.0	22.0	b)
N80-2110	21.0	16.0	10.0	24.5	14.0	12.5	50.2	30.0	508.0	20.5	b)
N80-2610	26.0	16.0	10.0	27.5	14.0	12.5	66.0	37.0	2474.0	46.5	b)
N80-2815	28.0	18.0	15.0	30.2	16.0	17.6	72.3	56.0	4064.0	55.0	b)
N80-3015	30.0	20.0	15.0	33.1	17.8	17.5	78.5	56.0	4418.0	45.0	b)
N80-3210	32.0	20.0	10.0	34.0	17.8	12.5	81.7	45.0	3676.0	38.0	b)
N80-4010	40.0	25.0	10.0	42.5	22.5	13.0	102.1	56.3	5740.0	30.0	b)
N80-4013	40.0	25.0	12.5	42.5	22.5	14.5	102.1	70.3	7179.0	40.0	b)
N80-4015	40.0	25.0	15.0	43.2	21.9	18.9	102.1	84.4	8615.0	45.0	b)
N80-5015	50.0	32.0	15.0	53.2	29.0	18.2	128.8	101.3	13042.0	55.0	b)
N80-5020	50.0	32.0	20.0	53.2	29.5	23.5	128.8	135.0	17388.0	70.0	b)
N80-5920	59.0	40.0	20.0	62.0	37.0	23.0	155.5	142.5	22160.0	55.0	b)
N80-6420	64.0	40.0	20.0	67.0	37.0	24.0	163.3	180.0	29405.0	60.0	b)
N80-8020	80.0	50.0	20.0	84.0	47.0	24.0	204.2	225.0	45946.0	65.0	b)
N80-10020	100.0	60.0	20.0	105.0	56.0	25.0	251.3	300.0	75398.0	70.0	b)
N80-12020	120.0	70.0	20.0	125.0	67.0	25.0	298.5	375.0	111920.0	58.2	b)
N80-12025	120.0	70.0	20.5	125.0	67.0	31.0	298.5	468.8	139900.0	70.0	b)
N80-12030	120.0	70.0	30.0	125.0	67.0	36.0	298.5	562.5	167880.0	82.0	b)
N80-13040	130.0	80.0	40.0	135.0	75.0	45.0	329.9	750.0	247400.0	125.0	b)
N80-13050	130.0	80.0	50.0	135.0	75.0	55.0	329.9	937.5	309200.0	155.0	b)

Notes:

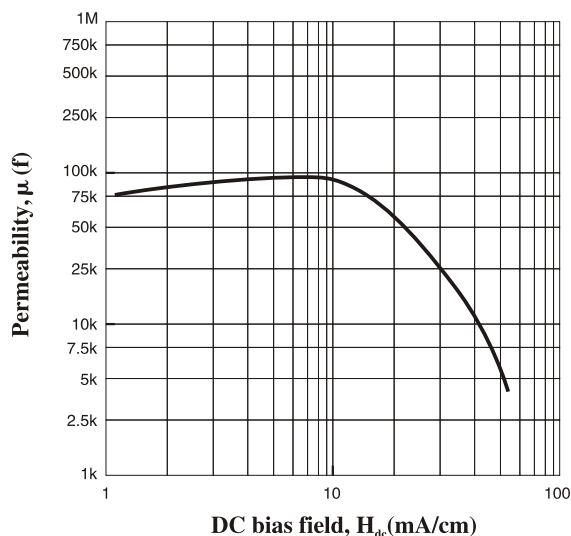
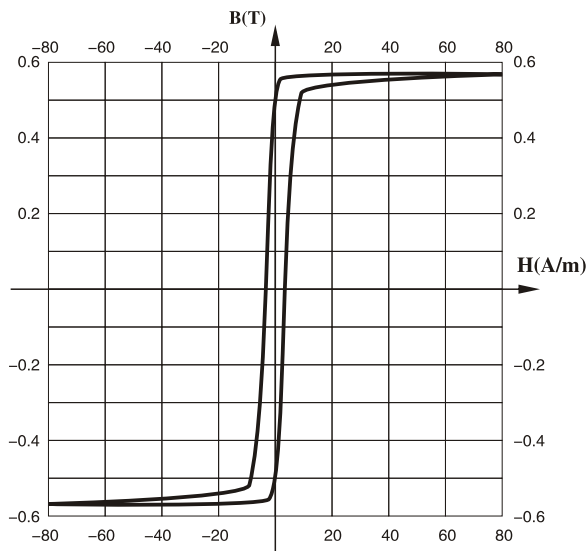
- ① The finished core dimensions shows a typical ones. Tolerance is ± 0.2mm.
- ② Norminal values of magnetic path length.
- ③ Norminal values of cross-section area.
- ④ Norminal values of volume.
- ⑤ Minimum values. Initial nominal inductance at 10kHz, 0.1Vosc@RT.
- ⑥ Finished box type
 - a) Epoxy coating.
 - b) Plastic case.

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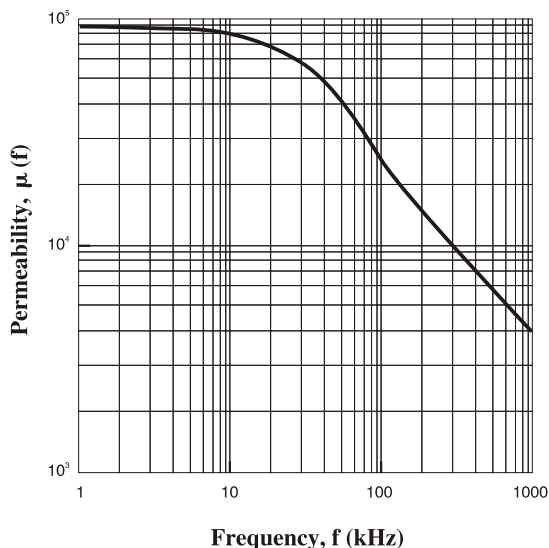
TYPICAL MAGNETIC CHARACTERISTICS OF N80 SERIES

Typical Frequency & DC Current Dependency of Common Mode Chokes

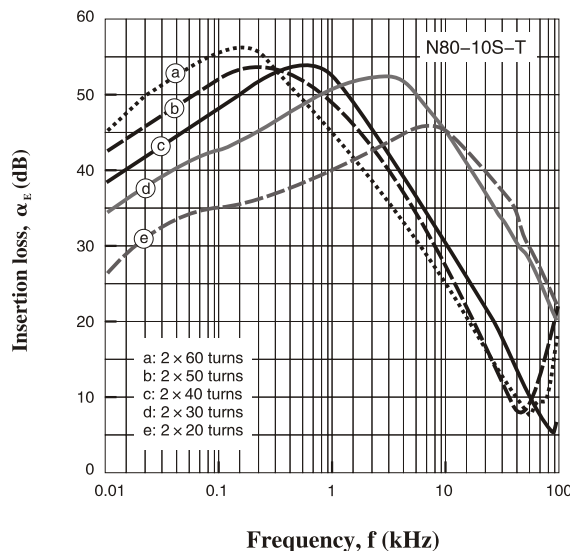
Typical B-H loop and it's incremental permeability with DC bias at 10kHz



Typical frequency properties



Insertion damping curve

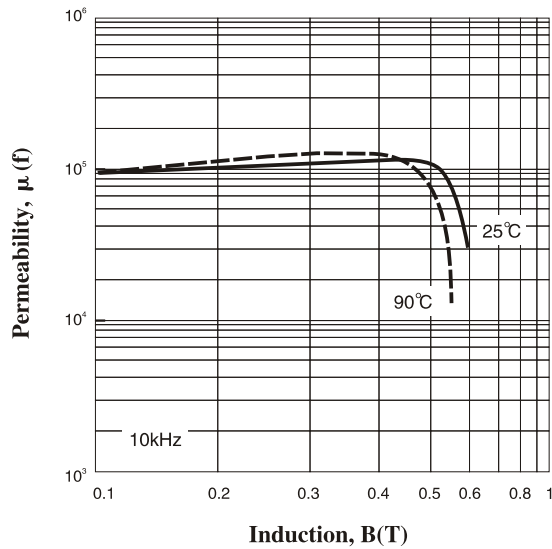


* All characteristics as shown above are measured at room temperature ~25°C

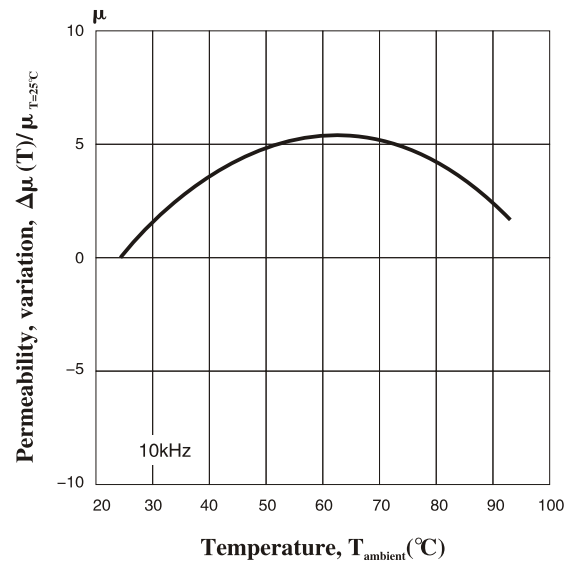
COMMON MODE CHOKES

TYPICAL MAGNETIC CHARACTERISTICS OF N80 SERIES

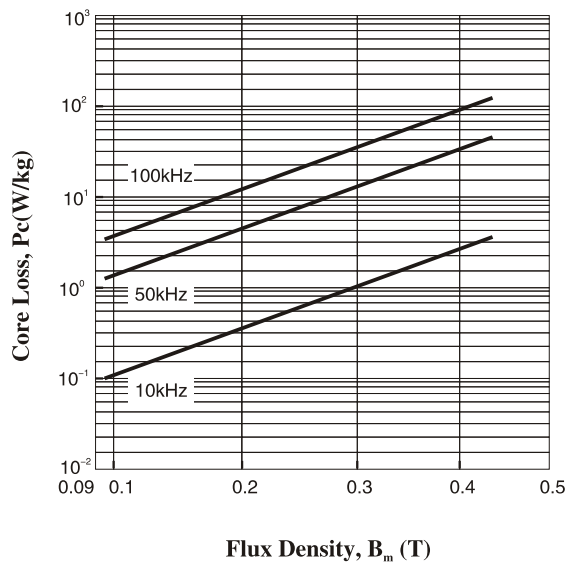
Typical μ_{peak} with flux density



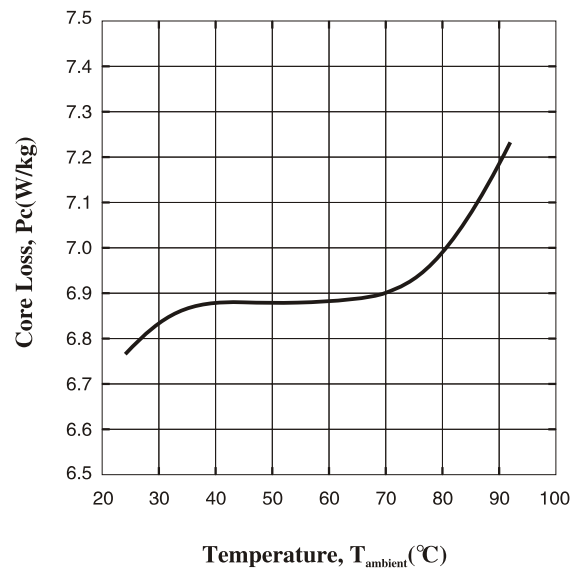
Typical temperature properties of μ



Typical core loss Pc(f)



Typical Pc(T)



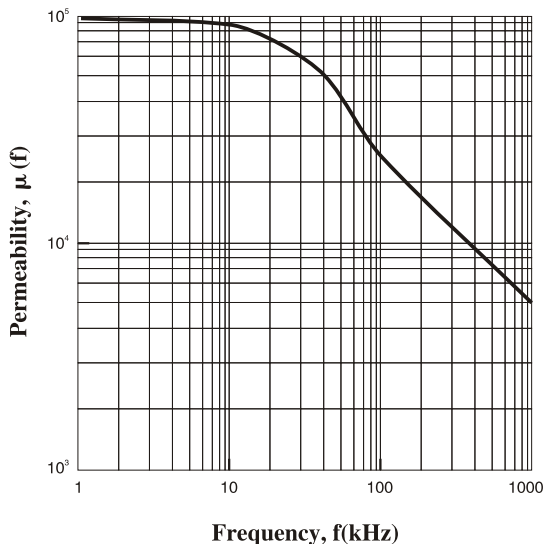
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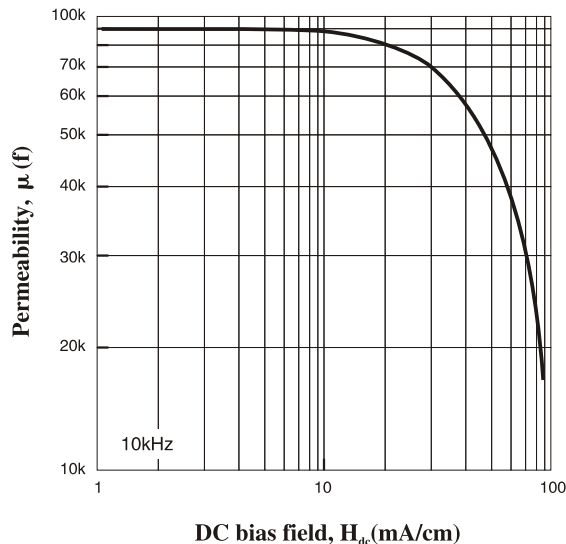
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Typical Frequency & DC Current Dependency of Common Mode Chokes

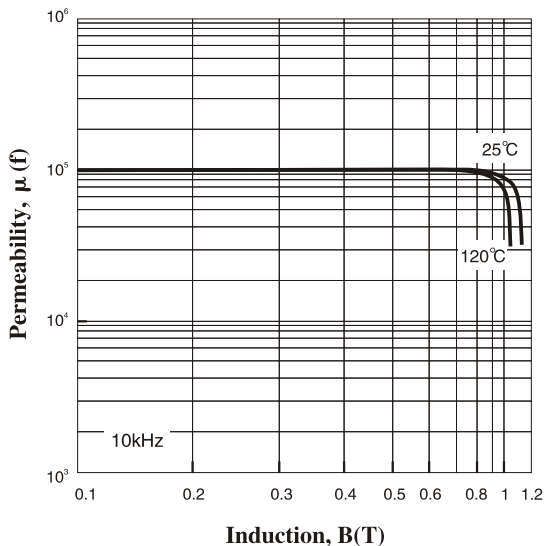
Typical frequency properties



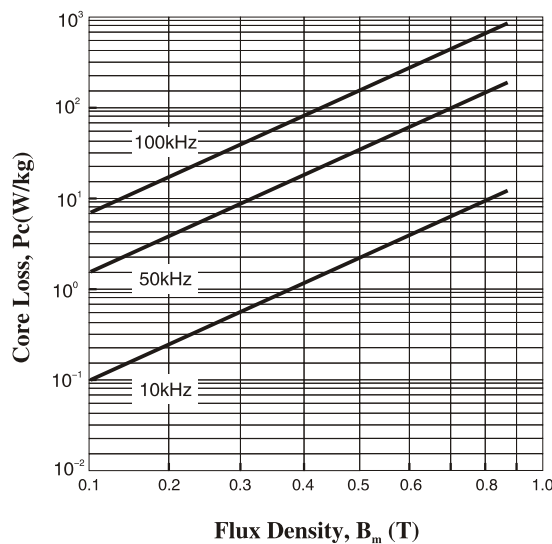
Typical incremental permeability



Typical μ_{peak} with flux density



Typical core loss $P_c(f)$



* All characteristics as shown above are measured at room temperature $\sim 25^\circ\text{C}$