Ferrite for Telecommunication

Low THD materials for xDSL modem transformers

DN70

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- All specifications are subject to change without notice.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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Low THD Materials for xDSL Modem Transformers DN70

The use of xDSL technique becomes wide spread as a high broad-band access to the internet. In order to utilize such network access as sufficient as possible, low THD (Total Harmonic Distortion) of transformer for xDSL modem is quite important to transfer the significant signals.
Materials DN70, TDK achieved such requirements recently, are developed to meet low THD over a wide temperature range(0 to 85°C) and wide frequency range(≧ 5kHz).
Therefore, They are suitable for the high performance transformer design for xDSL modem applications.
Standardization of AL-value will help you to select the optimum core at the transformer design.

FEATURES

- Meet low THD over a wide temperature range(0 to 85°C) and wide frequency range (≧ 5kHz).
- DN70 materials are best suited to high-performance transformers for xDSL modems.
- Selecting an appropriate core for transformer design is made easy by standardization of the AL-value in cores that have practical shapes.

APPLICATIONS

- Transformer for xDSL modem

APPLIED CORE TYPE AND AL-value

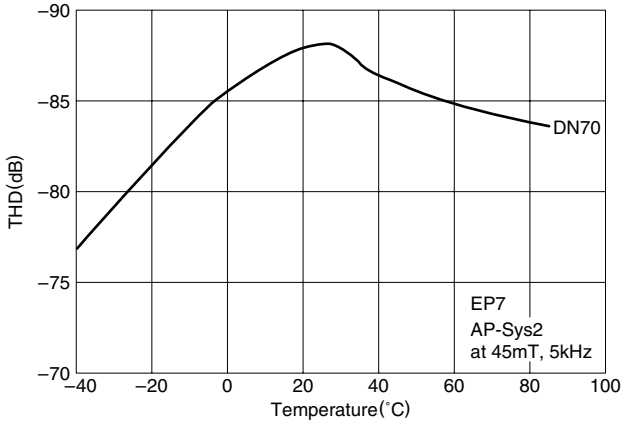
Core	Type	AL-value
EP	EP7	40, 63, 100, 160, 250
	EP10	40, 63, 100, 160, 250
	EP13	63, 100, 160, 250, 400, 500

MATERIAL CHARACTERISTICS

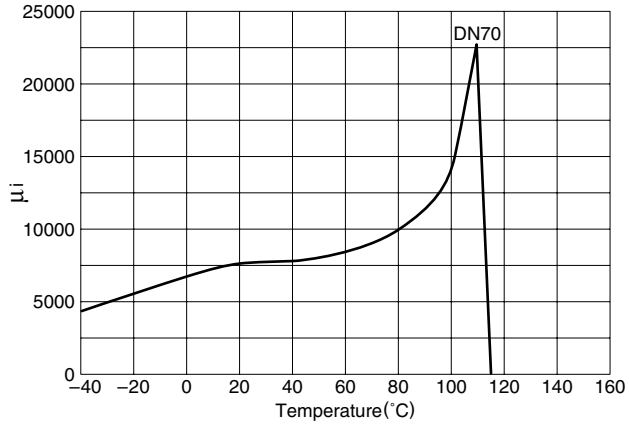
Material				**DN70**
Initial permeability	μi		25°C	7500±25%
Relative loss factor [10kHz]	tanδ/μi	$\times 10^{-6}$	25°C	<2.0
Temperature factor of intial permeability	αμir		–30 to +20°C 20 to 70°C	–0.5 to +1.5 –0.5 to +1.5
Saturation magnetic flux density [1000A/m]	Bs	mT	25°C	390
Hysteresis material constant [25°C, 1.5 to 3.0mT, 10kHz]	η_B	$\frac{10^{-6}}{mT}$		<0.2
Curie temperature	Tc	°C	min.	105
Density	db	kg/m^3		5.0×10^3
Electrical resistivity	ρv	Ω • m		0.3

• Unless otherwise specify the tolerance, the values are shown as a typical.

THD TEMPERATURE DEPENDENCE CHARACTERISTICS (Typical)



μi vs. TEMPERATURE CHARACTERISTICS (Typical)



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