Ferrite

DN45

For 100Base-T Pulse Transformers
DC Superposition Suitable, High Inductance Material

Pulse transformers for high-speed LANs must provide low insertion loss at a wide range of frequencies, high inductance at low frequency ranges, and the suppression of coil resistance and leakage inductance at high frequency ranges. In particular, 100Base-T pulse transformers must be able to maintain an inductance of 350µH minimum at DC bias 8mA and a temperature range from 0 to 70°C.
This product meets these requirements and realizes a 30% improvement in DC superposition over our previous material HP5, and is therefore the optimum solution for 100Base-T pulse transformer cores.

FEATURES

- Provides high inductance and excellent DC superposition over a wide temperature range (0 to 70°C).
- Provides 30% improvement in DC superposition over our previous material HP5.
- Coil windings can be reduced by 20% compared to material HP5.

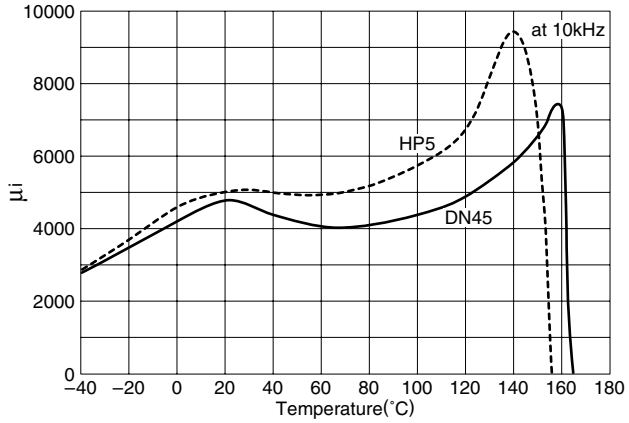
MATERIAL CHARACTERISTICS

COMPARISON TO PREVIOUS MATERIAL (HP5)

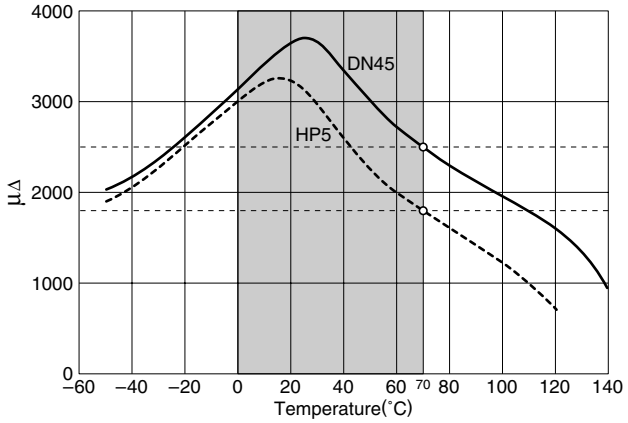
Material				DN45(NEW)	HP5
Initial permeability	µi		25°C	4500±25%	5000±25%
Relative loss factor [10kHz]	tanδ/µi	$\times10^{-6}$	25°C	<3.5	<3.5
Saturation magnetic flux density [1000A/m]	Bs	mT	25°C	460	400
Curie temperature	Tc	°C	min.	150	140
Density	db	kg/m^3		4.85×10^3	4.8×10^3
Electrical resistivity	ρv	Ω • m		0.3	0.15

• Various toroidal cores of small sizes are available. Please contact us for details.

µi vs. TEMPERATURE CHARACTERISTICS



µΔ vs. TEMPERATURE CHARACTERISTICS



Toroidal core(OD3.05×ID2.54×T1.27mm)
DC bias current=8mA(H_{DC}=32.1A/m), 100kHz, 100mV, N=24Ts