

Ferrite ring cores (toroids)

TN14/9/5

RING CORES (TOROIDS)

Effective core parameters

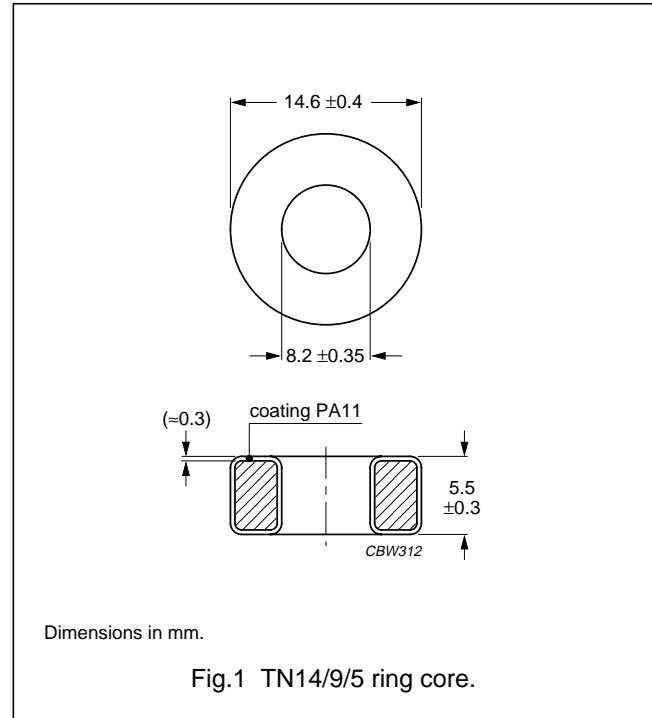
SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	2.84	mm ⁻¹
V_e	effective volume	430	mm ³
l_e	effective length	35	mm
A_e	effective area	12.3	mm ²
m	mass of core	≈2.1	g

Coating

The cores are coated with polyamide 11 (PA11), flame retardant in accordance with "UL 94V-2"; UL file number E 45228 (M).

Isolation voltage

DC isolation voltage: 1500 V.
 Contacts are applied on the edge of the ring core, which is also the critical point for the winding operation.



Ring core data

GRADE	A_L (nH)	μ_i	COLOUR CODE	TYPE NUMBER
4C65 ^{sup}	55 ±25%	≈125	violet	TN14/9/5-4C65
4A11 ^{sup}	310 ±25%	≈700	pink	TN14/9/5-4A11
3R1 ⁽¹⁾	–	≈800	black	TN14/9/5-3R1
3F3 ^{sup}	790 ±25%	≈1800	blue	TN14/9/5-3F3
3C90	1015 ±25%	≈2300	ultramarine	TN14/9/5-3C90
3C11 ^{sup}	1900 ±25%	≈4300	white	TN14/9/5-3C11
3E25	2430 ±30%	≈5500	orange	TN14/9/5-3E25
3E5 ⁽²⁾ ^{sup}	3760 ±30%	≈8500	yellow/white	TL14/9/5-3E5
3E6 ⁽²⁾ ^{des}	4415 ±30%	≈10000	purple/white	TL14/9/5-3E6

Notes

- Due to the rectangular BH-loop of 3R1, inductance values strongly depend on the magnetic state of the ring core and measuring conditions. Therefore no A_L value is specified. For the application in magnetic amplifiers A_L is not a critical parameter.
- Ring cores in 3E5 and 3E6 are lacquered (polyurethane) and have different dimensions:
 Outside diameter = 14.25 ±0.4 mm; inside diameter = 8.75 ±0.35 mm; height = 5.25 ±0.3 mm; flame retardant in accordance with "UL 94V-2"; UL file number E 192048.

WARNING
Do not use 3R1 cores close to their mechanical resonant frequency. For more information refer to "3R1" material specification in this data handbook.

Ferrite ring cores (toroids)

TN14/9/5

Properties of cores under power conditions

GRADE	B (mT) at	CORE LOSS (W) at		
	H = 250 A/m; f = 25 kHz; T = 100 °C	f = 25 kHz; \hat{B} = 200 mT; T = 100 °C	f = 100 kHz; \hat{B} = 100 mT; T = 100 °C	f = 400 kHz; \hat{B} = 50 mT; T = 100 °C
3C90	≥320	≤0.048	≤0.048	–
3F3	≥320	–	≤0.05	≤0.08