

Ferrite ring cores (toroids)

TN14/9/5

RING CORES (TOROIDS)

Effective core parameters

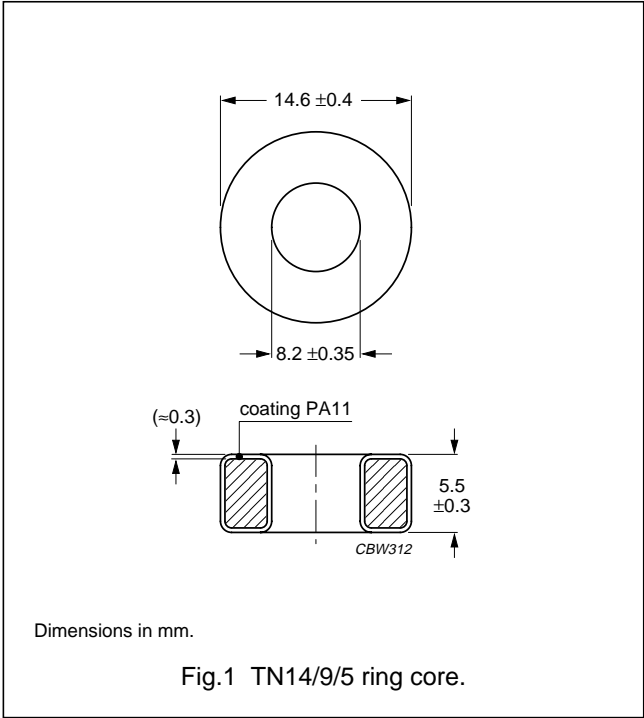
SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	2.84	$\text{mm}^{-1}$
$V_e$	effective volume	430	$\text{mm}^3$
$l_e$	effective length	35	mm
$A_e$	effective area	12.3	$\text{mm}^2$
m	mass of core	$\approx 2.1$	g

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)	$\mu_i$	COLOUR CODE	TYPE NUMBER
4C65 <sup>sup</sup>	55 ±25%	$\approx 125$	violet	TN14/9/5-4C65
4A11 <sup>sup</sup>	310 ±25%	$\approx 700$	pink	TN14/9/5-4A11
3R1 <sup>(1)</sup>	—	$\approx 800$	black	TN14/9/5-3R1
3F3 <sup>sup</sup>	790 ±25%	$\approx 1800$	blue	TN14/9/5-3F3
3C90	1015 ±25%	$\approx 2300$	ultramarine	TN14/9/5-3C90
3C11 <sup>sup</sup>	1900 ±25%	$\approx 4300$	white	TN14/9/5-3C11
3E25	2430 ±30%	$\approx 5500$	orange	TN14/9/5-3E25
3E5 <sup>(2)</sup> <sup>sup</sup>	3760 ±30%	$\approx 8500$	yellow/white	TL14/9/5-3E5
3E6 <sup>(2)</sup> <sup>des</sup>	4415 ±30%	$\approx 10000$	purple/white	TL14/9/5-3E6

Notes

- 1. 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.
- 2. 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