

# DATA SHEET

## **TN14/9/5** **Ferrite ring cores (toroids)**

Product specification  
File under Magnetic Products, MA01

1997 Nov 21

## 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	mm <sup>-1</sup>
$V_e$	effective volume	430	mm <sup>3</sup>
$l_e$	effective length	35	mm
$A_e$	effective area	12.3	mm <sup>2</sup>
m	mass of core	≈2.1	g

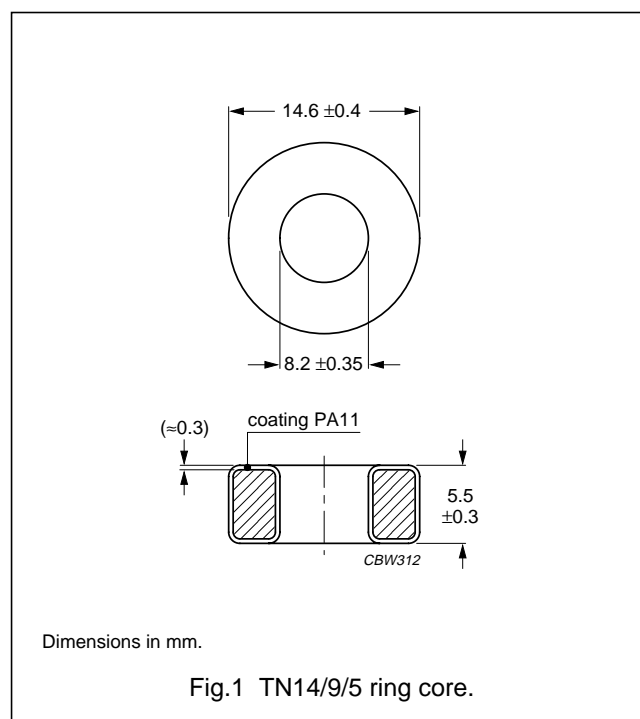
## Coating

The cores are coated with polyamide 11 (PA11), flame retardant in accordance with "UL 94V-2".

## 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%	≈125	violet	TN14/9/5-4C65
4A11 <sup>sup</sup>	310 ±25%	≈700	pink	TN14/9/5-4A11
3R1 <sup>(1)</sup>	–	≈800	black	TN14/9/5-3R1
3F3 <sup>sup</sup>	790 ±25%	≈1800	blue	TN14/9/5-3F3
3C85	880 ±25%	≈2000	red	TN14/9/5-3C85
3C11 <sup>sup</sup>	1900 ±25%	≈4300	white	TN14/9/5-3C11
3E25	2430 ±30%	≈5500	orange	TN14/9/5-3E25
3E5 <sup>(2)</sup> <sup>sup</sup>	3760 ±30%	≈8500	yellow/white	TL14/9/5-3E5
3E6 <sup>(2)</sup> <sup>des</sup>	4415 ±30%	≈10000	purple/white	TL14/9/5-3E6

## Notes

- Due to the rectangular BH-loop of grade 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 grades 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.

## WARNING

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

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## 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; Ḃ = 200 mT; T = 100 °C	f = 100 kHz; Ḃ = 100 mT; T = 100 °C	f = 400 kHz; Ḃ = 50 mT; T = 100 °C
3C85	≥320	≤0.07	≤0.08	–
3F3	≥320	–	≤0.05	≤0.08




## DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

## LIFE SUPPORT APPLICATIONS

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## PRODUCT STATUS DEFINITIONS

STATUS	INDICATION	DEFINITION
Prototype		These are products that have been made as development samples for the purposes of technical evaluation only. The data for these types is provisional and is subject to change.
Design-in		These products are recommended for new designs.
Preferred		These products are recommended for use in current designs and are available via our sales channels.
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COD16

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Printed in The Netherlands

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