

# DATA SHEET

**TN14/9/5**  
Ferrite toroids

Supersedes data of September 2004

2008 Sep 01

# Ferrite toroids

TN14/9/5

## RING CORES (TOROIDS)

### Effective core parameters

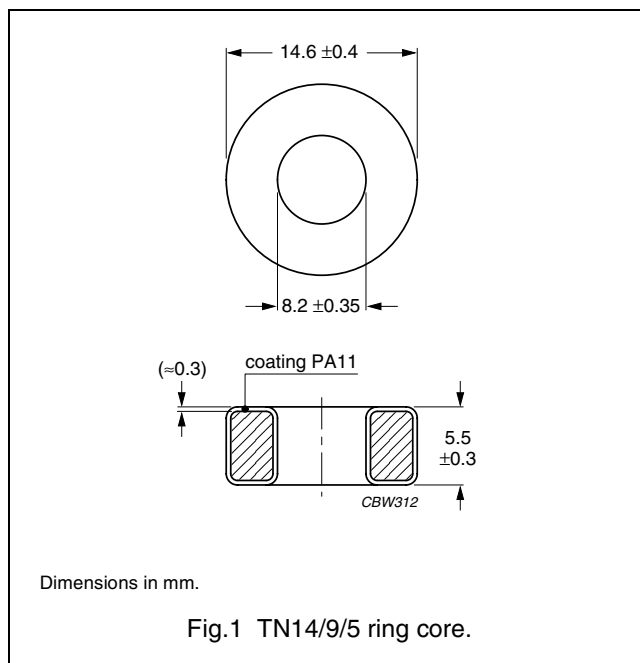
SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	2.84	mm <sup>-1</sup>
$V_e$	effective volume	430	mm <sup>3</sup>
$l_e$	effective length	35	mm
$A_e$	effective area	12.3	mm <sup>2</sup>
m	mass of core	≈ 2.1	g

### Coating

The cores are coated with polyamide 11 (PA11), flame retardant in accordance with "UL 94V-2"; UL file number E 45228 (M). The colour is white. Maximum operating temperature is 160 °C.

### Isolation voltage

DC isolation voltage: 1 500 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)	$\mu_i$	TYPE NUMBER
4C65	55 ± 25%	≈ 125	TN14/9/5-4C65
4A11	310 ± 25%	≈ 700 <sup>(1)</sup>	TN14/9/5-4A11
3R1 <sup>(2)</sup>	–	≈ 800	TN14/9/5-3R1
3F3	790 ± 25%	≈ 1800	TN14/9/5-3F3
3C90	1015 ± 25%	≈ 2300	TN14/9/5-3C90
3C11	1900 ± 25%	≈ 4300	TN14/9/5-3C11
3E25	2430 ± 30%	≈ 5500	TN14/9/5-3E25

1. Old permeability specification maintained.
2. 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.

### WARNING

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

### 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; B = 200 mT; T = 100 °C	f = 100 kHz; B = 100 mT; T = 100 °C	f = 400 kHz; B = 50 mT; T = 100 °C
3C90	≥320	≤0.048	≤0.048	
3F3	≥320		≤0.05	≤0.08

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DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS
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