DATA SHEET

TN14/9/5
Ferrite toroids

Supersedes data of September 2004 2008 Sep 01

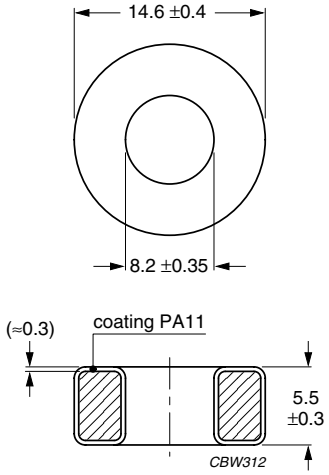
FERROXCUBE
A YAGEO COMPANY

Ferrite toroids TN14/9/5

RING CORES (TOROIDS)

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
Σ(l/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



Dimensions in mm.

Fig.1 TN14/9/5 ring core.

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: 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	TYPE NUMBER
4C65	55 ± 25%	≈ 125	TN14/9/5-4C65
4A11	310 ± 25%	≈ 700(1)	TN14/9/5-4A11
3R1(2)	–	≈ 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	$\hat{f}$ = 25 kHz; $\hat{B}$ = 200 mT; T = 100 °C	$\hat{f}$ = 100 kHz; $\hat{B}$ = 100 mT; T = 100 °C	$\hat{f}$ = 400 kHz; $\hat{B}$ = 50 mT; T = 100 °C
3C90	≥320	≤0.048	≤0.048	
3F3	≥320		≤0.05	≤0.08

DATA SHEET STATUS DEFINITIONS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS
Preliminary specification	Development	This data sheet contains preliminary data. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
Product specification	Production	This data sheet contains final specifications. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.

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PRODUCT STATUS DEFINITIONS

STATUS	INDICATION	DEFINITION
Prototype	prot	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	des	These products are recommended for new designs.
Preferred		These products are recommended for use in current designs and are available via our sales channels.
Support	sup	These products are **not** recommended for new designs and may not be available through all of our sales channels. Customers are advised to check for availability.