DATA SHEET

TN36/23/15
Ferrite toroids

Supersedes data of November 2000

2003 July 24

FERROXCUBE
A YAGEO COMPANY

RING CORES (TOROIDS)

Effective core parameters

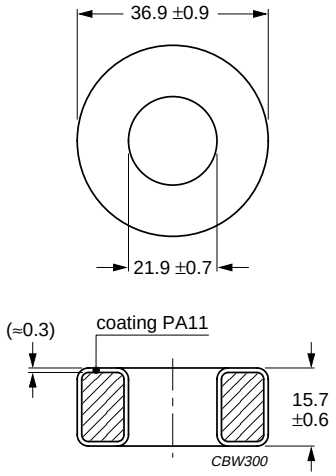
SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.935	mm^{-1}
V_e	effective volume	8600	mm^3
l_e	effective length	89.6	mm
A_e	effective area	95.9	mm^2
m	mass of core	≈ 42	g

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: 2000 V.
Contacts are applied on the edge of the ring core, which is also the critical point for the winding operation.



Dimensions in mm.

Fig.1 TN36/23/15 ring core.

Ring core data

GRADE	A_L (nH)	μ_i	COLOUR CODE	TYPE NUMBER
4C65	170 ± 25%	≈ 125	violet	TN36/23/15-4C65
4A11	940 ± 25%	≈ 700	pink	TN36/23/15-4A11
3R1(1)	–	≈ 800	black	TN36/23/15-3R1
3S4 des	2285 ± 25%	≈ 1700	no color	TN36/23/15-3S4
3F3	2420 ± 25%	≈ 1800	blue	TN36/23/15-3F3
3C90	3090 ± 25%	≈ 2300	ultramarine	TN36/23/15-3C90
3C11	5800 ± 25%	≈ 4300	white	TN36/23/15-3C11
3E25	7390 ± 25%	≈ 5500	orange	TN36/23/15-3E25

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.

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; $\hat{B}$ = 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	≤0.96	≤0.96	
3F3	≥320		≤0.95	≤1.7

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.