

DATA SHEET

TN36/23/15 **Ferrite ring cores (toroids)**

Product specification
Supersedes data of 1997 Nov 21
File under Magnetic Products, MA01

1998 Jul 23

Ferrite ring cores (toroids)

TN36/23/15

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

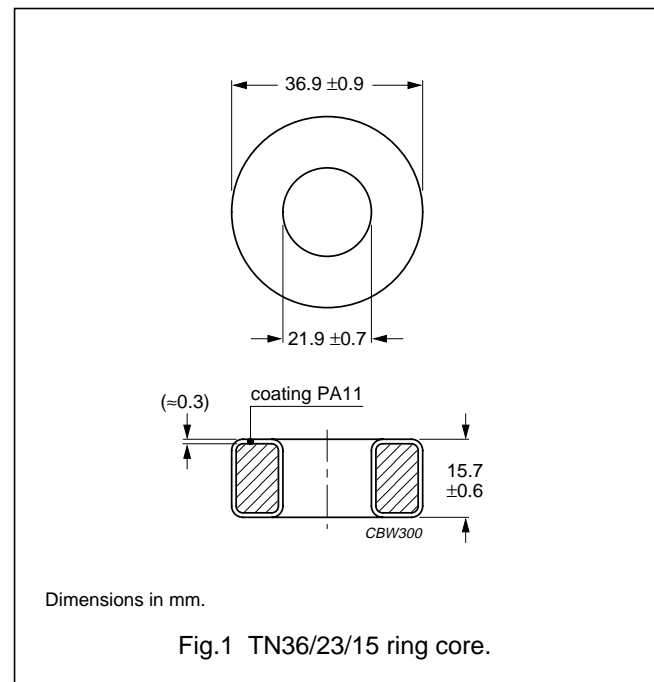
Coating

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

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.



Ring core data

GRADE	A_L (nH)	μ_i	COLOUR CODE	TYPE NUMBER
4C65	$170 \pm 25\%$	≈ 125	violet	TN36/23/15-4C65
4A11 <small>des</small>	$940 \pm 25\%$	≈ 700	uncoated	T36/23/15-4A11 ⁽¹⁾
3R1 <small>sup</small>	—	≈ 800	black	TN36/23/15-3R1 ⁽²⁾
3S4 <small>des</small>	$2285 \pm 25\%$	≈ 1700	uncoated	T36/23/15-3S4 ⁽¹⁾
3F3 <small>sup</small>	$2420 \pm 25\%$	≈ 1800	blue	TN36/23/15-3F3
3C85 <small>sup</small>	$2700 \pm 25\%$	≈ 2000	red	TN36/23/15-3C85
3C11	$5800 \pm 25\%$	≈ 4300	white	TN36/23/15-3C11
3E25	$7390 \pm 25\%$	≈ 5500	orange	TN36/23/15-3E25
3E5	$11400 \pm 30\%$	≈ 8500	yellow/white	TL36/23/15-3E5 ⁽³⁾

Notes

- Uncoated ring cores have the following dimensions: outside diameter = 36 ± 0.7 mm; inside diameter = 23 ± 0.5 mm; height = 15 ± 0.3 mm.
- 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.
- Ring cores in 3E5 are lacquered (polyurethane) and have different dimensions: outside diameter = 36.25 ± 0.9 mm; inside diameter = 22.75 ± 0.7 mm; height = 15.25 ± 0.6 mm.

WARNING

Do not use 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	≤1.4	≤1.6	–
3F3	≥320	–	≤0.95	≤1.7

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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.	

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