

Ferrite ring cores (toroids)

TN36/23/15

RING CORES (TOROIDS)

Effective core parameters

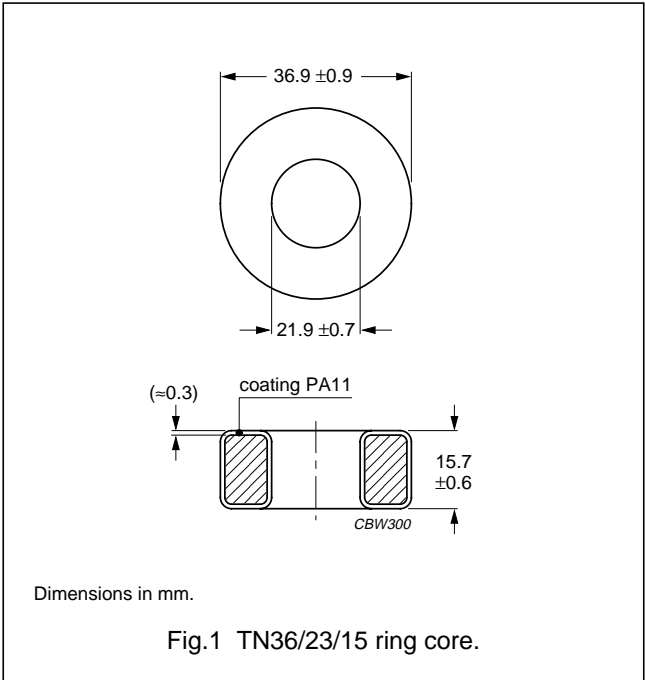
SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	0.935	mm^{-1}
V_e	effective volume	8600	mm^3
l_e	effective length	89.6	mm
A_e	effective area	95.9	mm^2
m	mass of core	≈ 42	g

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 des	$940 \pm 25\%$	≈ 700	uncoated	T36/23/15-4A11 ⁽¹⁾
3R1 sup	—	≈ 800	black	TN36/23/15-3R1 ⁽²⁾
3S4 des	$2285 \pm 25\%$	≈ 1700	uncoated	T36/23/15-3S4 ⁽¹⁾
3F3 sup	$2420 \pm 25\%$	≈ 1800	blue	TN36/23/15-3F3
3C85 sup	$2700 \pm 25\%$	≈ 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	$11\,400 \pm 30\%$	≈ 8500	yellow/white	TL36/23/15-3E5 ⁽³⁾

Notes

1. Uncoated ring cores have the following dimensions: outer dimension = 36 ± 0.7 mm; inner dimension = 25 ± 0.5 mm; height = 15 ± 0.3 mm.
2. 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.
3. Ring cores in grade 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 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; B̂ = 200 mT; T = 100 °C	f = 100 kHz; B̂ = 100 mT; T = 100 °C	f = 400 kHz; B̂ = 50 mT; T = 100 °C
3C85	≥320	≤1.4	≤1.6	–
3F3	≥320	–	≤0.95	≤1.7