

Ferrite toroids

TN14/9/5

RING CORES (TOROIDS)

Effective core parameters

| SYMBOL        | PARAMETER        | VALUE | UNIT             |
|---------------|------------------|-------|------------------|
| $\Sigma(I/A)$ | 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

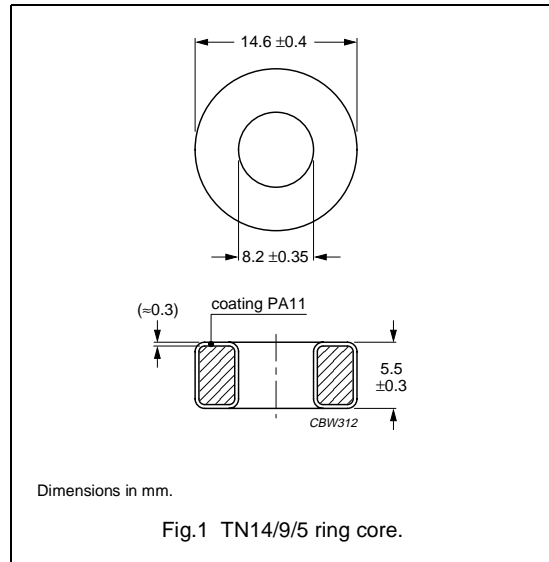
The cores are coated with polyamide 11 (PA11), flame retardant in accordance with "UL 94V-2"; UL file number E 45228 (M). The colour is white.

Maximum operating temperature is 160 °C.

Isolation voltage

DC isolation voltage: 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) | $\mu_i$              | 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;<br>f = 25 kHz;<br>T = 100 °C | f = 25 kHz;<br>B = 200 mT;<br>T = 100 °C | f = 100 kHz;<br>B = 100 mT;<br>T = 100 °C | f = 400 kHz;<br>B = 50 mT;<br>T = 100 °C |
| 3C90  | ≥320                                      | ≤0.048                                   | ≤0.048                                    |  |
| 3F3   | ≥320                                      |  | ≤0.05                                     | ≤0.08                                    |