

Soft Ferrites

Gapped ferrite toroids



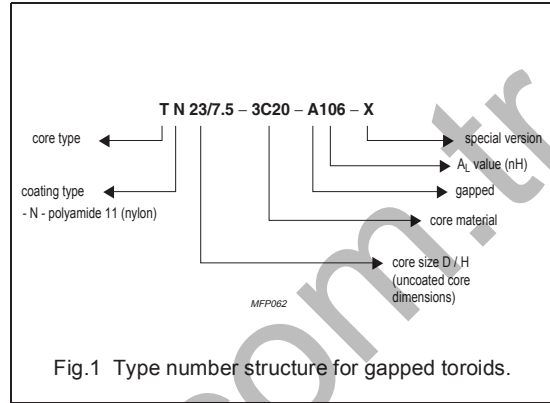
Soft Ferrites

Gapped ferrite toroids

PRODUCT OVERVIEW AND
TYPE NUMBER STRUCTURE

Product overview gapped ferrite toroids

CORE TYPE	V_e (mm ³)	A_e (mm ²)	MASS (g)
TN10/6/4	188	7.8	0.95
TN13/7.5/5	368	12.2	1.8
TN17/11/6.4	787	18.7	3.7
TN20/10/6.4	1330	30.5	6.9
TN23/14/7.5	1845	33.1	9.0
TN26/15/11	3700	61.5	19



Gapped ferrite toroids

TN10/6/4

RING CORES (TOROIDS)

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	3.07	mm ⁻¹
V_e	effective volume	188	mm ³
l_e	effective length	24.1	mm
A_e	effective area	7.8	mm ²
m	mass of core	≈ 0.95	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: 1000 V.

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

Ring core data

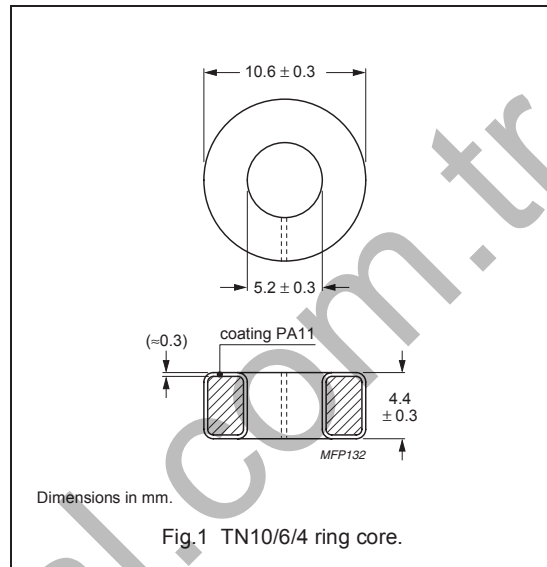
GRADE	$A_L^{(1)}$ (nH)	μ_e	TYPE NUMBER
3C20	48 ± 15%	≈ 90	TN10/4-3C20-A48
	66 ± 15%	≈ 125	TN10/4-3C20-A66
	78 ± 15%	≈ 147	TN10/4-3C20-A78
	84 ± 15%	≈ 160	TN10/4-3C20-A84
	92 ± 15%	≈ 173	TN10/4-3C20-A92

Note

1. Winding equally distributed over the circumference.

Properties of cores under power conditions

GRADE	B (mT) at	CORE LOSS (W) at	
	H = 1200 A/m; f = 10 kHz; T = 100 °C	f = 100 kHz; B = 100 mT; T = 100 °C	f = 100 kHz; B = 200 mT; T = 100 °C
3C20	~ 400	≤ 0.017	≤ 0.11



Gapped ferrite toroids

TN13/7.5/5

RING CORES (TOROIDS)

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	2.46	mm ⁻¹
V_e	effective volume	368	mm ³
l_e	effective length	30.1	mm
A_e	effective area	12.2	mm ²
m	mass of core	≈ 1.8	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

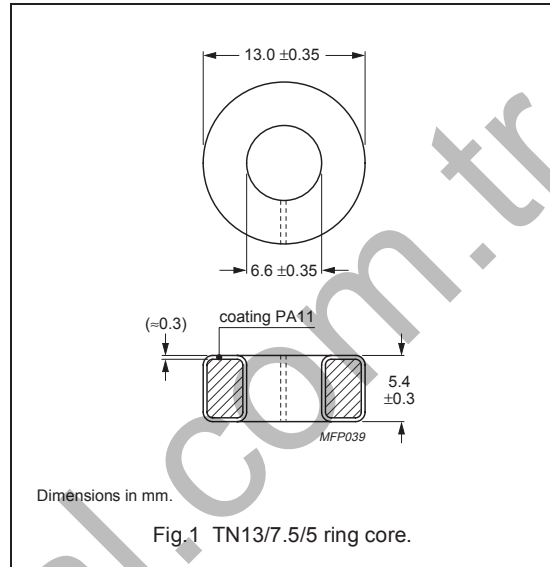
GRADE	$A_L^{(1)}$ (nH)	μ_e	TYPE NUMBER
3C20	40 ± 15%	≈ 90	TN13/5-3C20-A40
	56 ± 15%	≈ 125	TN13/5-3C20-A56
	67 ± 15%	≈ 147	TN13/5-3C20-A67
	72 ± 15%	≈ 160	TN13/5-3C20-A72
	79 ± 15%	≈ 173	TN13/5-3C20-A79

Note

1. Winding equally distributed over the circumference.

Properties of cores under power conditions

GRADE	B (mT) at	CORE LOSS (W) at	
	H = 1200 A/m; f = 10 kHz; T = 100 °C	f = 100 kHz; B = 100 mT; T = 100 °C	f = 100 kHz; B = 200 mT; T = 100 °C
3C20	~ 400	≤ 0.033	≤ 0.22



Gapped ferrite toroids

TN17/11/6.4

RING CORES (TOROIDS)

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	2.24	mm ⁻¹
V_e	effective volume	787	mm ³
l_e	effective length	42.0	mm
A_e	effective area	18.7	mm ²
m	mass of core	≈ 3.7	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.

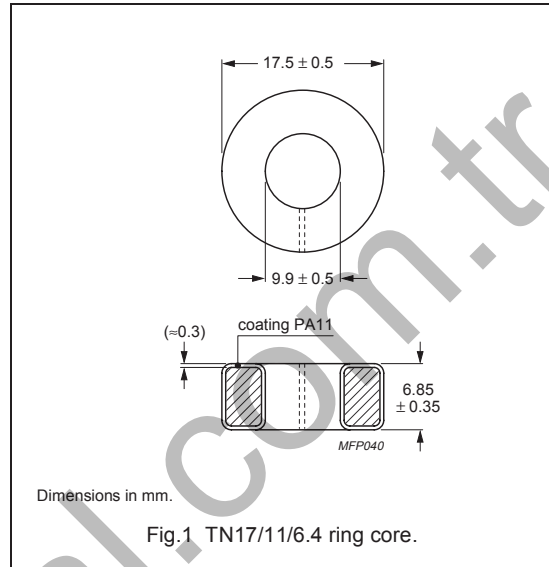


Fig.1 TN17/11/6.4 ring core.

Ring core data

GRADE	$A_L^{(1)}$ (nH)	μ_e	TYPE NUMBER
3C20	52 ± 15%	≈ 90	TN17/6.4-3C20-A52
	72 ± 15%	≈ 125	TN17/6.4-3C20-A72
	88 ± 15%	≈ 147	TN17/6.4-3C20-A88
	92 ± 15%	≈ 160	TN17/6.4-3C20-A92
	104 ± 15%	≈ 173	TN17/6.4-3C20-A104

Note

1. Winding equally distributed over the circumference.

Properties of cores under power conditions

GRADE	B (mT) at	CORE LOSS (W) at	
	H = 1200 A/m; f = 10 kHz; T = 100 °C	f = 100 kHz; B = 100 mT; T = 100 °C	f = 100 kHz; B = 200 mT; T = 100 °C
3C20	~ 400	≤ 0.070	≤ 0.47

Gapped ferrite toroids

TN20/10/6.4

RING CORES (TOROIDS)

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	1.43	mm ⁻¹
V_e	effective volume	1330	mm ³
l_e	effective length	43.6	mm
A_e	effective area	30.5	mm ²
m	mass of core	≈ 6.9	g

Coating

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

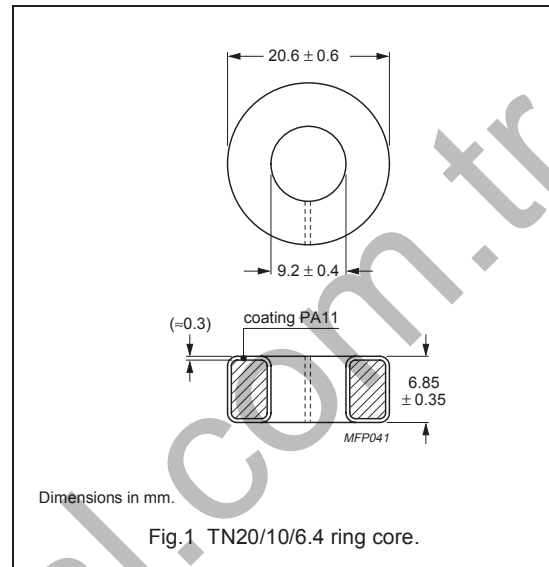
The colour is white.

Maximum operating temperature is 160 °C.

Isolation voltage

DC isolation voltage: 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	$A_L^{(1)}$ (nH)	μ_e	TYPE NUMBER
3C20	68 ± 15%	≈ 125	TN20/6.4-3C20-A68
	81 ± 15%	≈ 147	TN20/6.4-3C20-A81
	87 ± 15%	≈ 160	TN20/6.4-3C20-A87
	96 ± 15%	≈ 173	TN20/6.4-3C20-A96
	109 ± 15%	≈ 200	TN20/6.4-3C20-A109

Note

1. Winding equally distributed over the circumference.

Properties of cores under power conditions

GRADE	B (mT) at	CORE LOSS (W) at	
	H = 1200 A/m; f = 10 kHz; T = 100 °C	f = 100 kHz; B = 100 mT; T = 100 °C	f = 100 kHz; B = 200 mT; T = 100 °C
3C20	~ 400	≤ 0.12	≤ 0.80

Gapped ferrite toroids

TN23/14/7.5

RING CORES (TOROIDS)

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	1.69	mm ⁻¹
V_e	effective volume	1845	mm ³
l_e	effective length	55.8	mm
A_e	effective area	33.1	mm ²
m	mass of core	≈ 9.0	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: 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

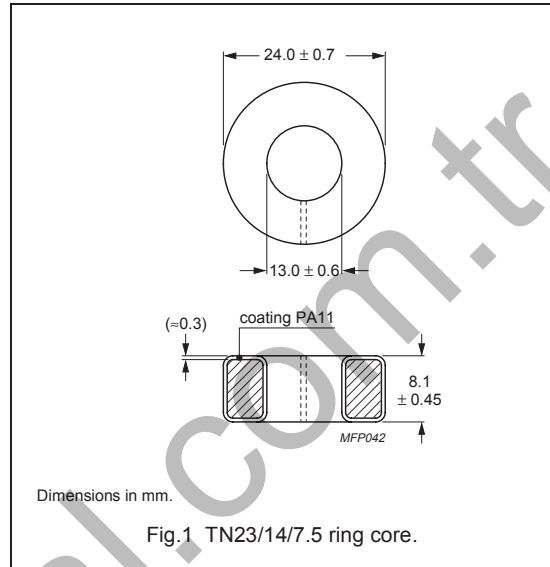
GRADE	$A_L^{(1)}$ (nH)	μ_e	TYPE NUMBER
3C20	65 ± 15%	≈ 90	TN23/7.5-3C20-A65
	90 ± 15%	≈ 125	TN23/7.5-3C20-A90
	106 ± 15%	≈ 147	TN23/7.5-3C20-A106
	115 ± 15%	≈ 160	TN23/7.5-3C20-A115
	124 ± 15%	≈ 173	TN23/7.5-3C20-A124

Note

1. Winding equally distributed over the circumference.

Properties of cores under power conditions

GRADE	B (mT) at	CORE LOSS (W) at	
	H = 1200 A/m; f = 10 kHz; T = 100 °C	f = 100 kHz; B = 100 mT; T = 100 °C	f = 100 kHz; B = 200 mT; T = 100 °C
3C20	~ 400	≤ 0.16	≤ 1.1



Gapped ferrite toroids

TN26/15/11

RING CORES (TOROIDS)

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	0.982	mm ⁻¹
V_e	effective volume	3700	mm ³
l_e	effective length	60.1	mm
A_e	effective area	61.5	mm ²
m	mass of core	≈ 19	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: 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	$A_L^{(1)}$ (nH)	μ_e	TYPE NUMBER
3C20	113 ± 15%	≈ 90	TN26/11-3C20-A113
	157 ± 15%	≈ 125	TN26/11-3C20-A157
	185 ± 15%	≈ 147	TN26/11-3C20-A185
	201 ± 15%	≈ 160	TN26/11-3C20-A201
	217 ± 15%	≈ 173	TN26/11-3C20-A217

Note

1. Winding equally distributed over the circumference.

Properties of cores under power conditions

GRADE	B (mT) at	CORE LOSS (W) at	
	H = 1200 A/m; f = 10 kHz; T = 100 °C	f = 100 kHz; B = 100 mT; T = 100 °C	f = 100 kHz; B = 200 mT; T = 100 °C
3C20	~ 400	≤ 0.33	≤ 2.2

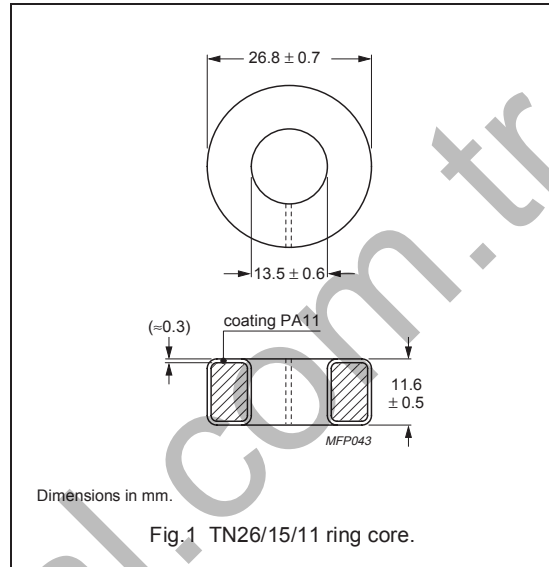


Fig.1 TN26/15/11 ring core.