

DATA SHEET

ER18/3.2/10

Planar ER cores and accessories

Supersedes data of September 2004

2008 Sep 01

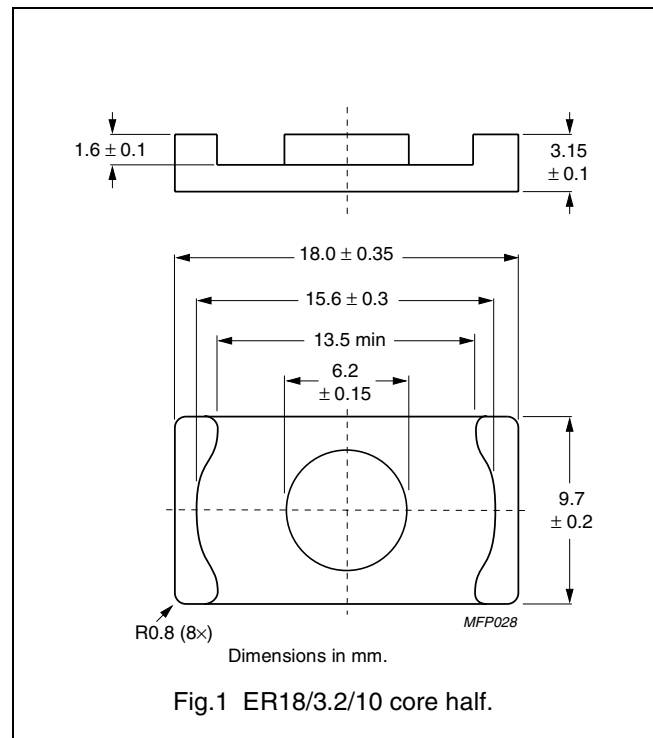


FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	0.730	mm ⁻¹
V_e	effective volume	667	mm ³
l_e	effective length	22.1	mm
A_e	effective area	30.2	mm ²
A_{min}	minimum area	30.1	mm ²
m	mass of core half	≈ 1.6	g



Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 15 ± 5 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μ m)	TYPE NUMBER
3C92 des	160 ± 3 %	≈ 93	≈ 260	ER18/3.2/10-3C92-A160-S
	250 ± 5 %	≈ 146	≈ 150	ER18/3.2/10-3C92-A250-S
	400 ± 8 %	≈ 232	≈ 85	ER18/3.2/10-3C92-A400-S
	1900 ± 25 %	≈ 1100	≈ 0	ER18/3.2/10-3C92-S
3C93 des	2200 ± 25 %	≈ 1270	≈ 0	ER18/3.2/10-3C93-S
3C95 des	3120 ± 25 %	≈ 1810	≈ 0	ER18/3.2/10-3C95-S
3C96 des	160 ± 3 %	≈ 93	≈ 260	ER18/3.2/10-3C96-A160-S
	250 ± 5 %	≈ 146	≈ 155	ER18/3.2/10-3C96-A250-S
	400 ± 8 %	≈ 232	≈ 90	ER18/3.2/10-3C96-A400-S
	2400 ± 25 %	≈ 1100	≈ 0	ER18/3.2/10-3C96-S
3F3	2400 ± 25 %	≈ 1100	≈ 0	ER18/3.2/10-3F3-S
3F35 des	160 ± 3 %	≈ 93	≈ 260	ER18/3.2/10-3F35-A160-S
	250 ± 5 %	≈ 146	≈ 150	ER18/3.2/10-3F35-A250-S
	400 ± 8 %	≈ 232	≈ 85	ER18/3.2/10-3F35-A400-S
	1800 ± 25 %	≈ 1100	≈ 0	ER18/3.2/10-3F35-S
3F4 des	1300 ± 25 %	≈ 794	≈ 0	ER18/3.2/10-3F4-S
3F45 prot	1300 ± 25 %	≈ 794	≈ 0	ER18/3.2/10-3F45-S

Properties of core sets under power condition

GRADE	B (mT) at	CORE LOSS (W) at					
	H = 250 A/m; f = 25 kHz; T = 100 °C	f̂ = 100 kHz; B̂ = 100 mT; T = 100 °C	f̂ = 100 kHz; B̂ = 200 mT; T = 25 °C	f̂ = 100 kHz; B̂ = 200 mT; T = 100 °C	f̂ = 400 kHz; B̂ = 50 mT; T = 100 °C	f̂ = 500 kHz; B̂ = 50 mT; T = 100 °C	f̂ = 500 kHz; B̂ = 100 mT; T = 100 °C
3C92	≥ 370	≤ 0.052	–	≤ 0.35	–	–	–
3C93	≥ 320	≤ 0.052 ⁽¹⁾	–	≤ 0.35 ⁽¹⁾	–	–	–
3C95	≥ 320	–	≤ 0.4	≤ 0.38	–	–	–
3C96	≥ 340	≤ 0.035	–	≤ 0.26	–	≤ 0.22	–
3F3	≥ 300	≤ 0.07	–	–	≤ 0.13	–	–
3F35	≥ 300	–	–	–	–	≤ 0.078	≤ 0.61

1. Measured at 140 °C.

Properties of core sets under power condition (continued)

GRADE	B (mT) at	CORE LOSS (W) at		
	H = 1200 A/m; f = 25 kHz; T = 100 °C	f̂ = 1 MHz; B̂ = 30 mT; T = 100 °C	f̂ = 1 MHz; B̂ = 50 mT; T = 100 °C	f̂ = 3 MHz; B̂ = 10 mT; T = 100 °C
3F4	≥ 250	≤ 0.2	–	≤ 0.32
3F45	≥ 250	≤ 0.16	≤ 0.6	≤ 0.27

MOUNTING INFORMATION

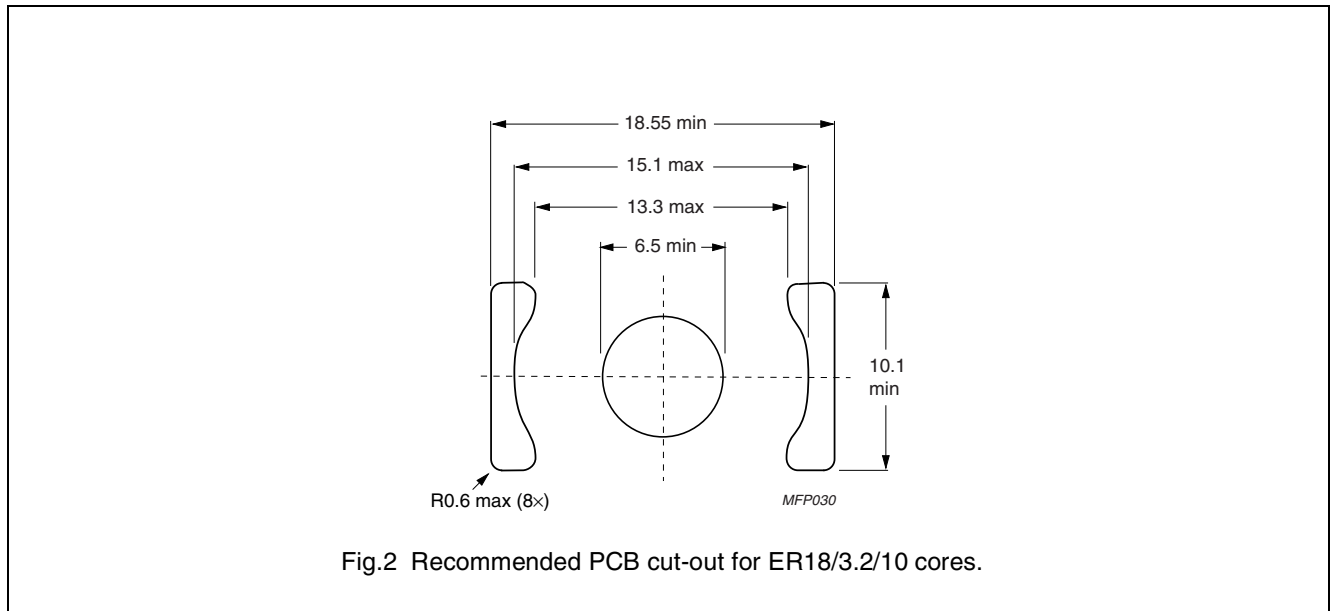


Fig.2 Recommended PCB cut-out for ER18/3.2/10 cores.

Winding data for ER18/3.2/10 planar core

WINDING AREA (mm ²)	AVERAGE TRACK LENGTH (mm)	FOOTPRINT AREA (mm ²)
15.0	34.2	225




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.
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