DATA SHEET

ER18/3.2/10
Planar ER cores and accessories

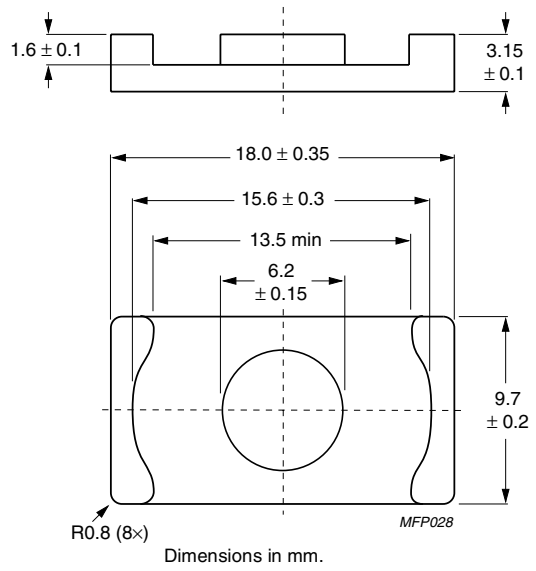
Supersedes data of September 2004 2008 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	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



Dimensions in mm.

Fig.1 ER18/3.2/10 core half.

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 (μm)	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	$\hat{f}$ = 100 kHz; $\hat{B}$ = 100 mT; T = 100 °C	$\hat{f}$ = 100 kHz; $\hat{B}$ = 200 mT; T = 25 °C	$\hat{f}$ = 100 kHz; $\hat{B}$ = 200 mT; T = 100 °C	$\hat{f}$ = 400 kHz; $\hat{B}$ = 50 mT; T = 100 °C	$\hat{f}$ = 500 kHz; $\hat{B}$ = 50 mT; T = 100 °C	$\hat{f}$ = 500 kHz; $\hat{B}$ = 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	$\hat{f}$ = 1 MHz; $\hat{B}$ = 30 mT; T = 100 °C	$\hat{f}$ = 1 MHz; $\hat{B}$ = 50 mT; T = 100 °C	$\hat{f}$ = 3 MHz; $\hat{B}$ = 10 mT; T = 100 °C
3F4	≥ 250	≤ 0.2	–	≤ 0.32
3F45	≥ 250	≤ 0.16	≤ 0.6	≤ 0.27

MOUNTING INFORMATION

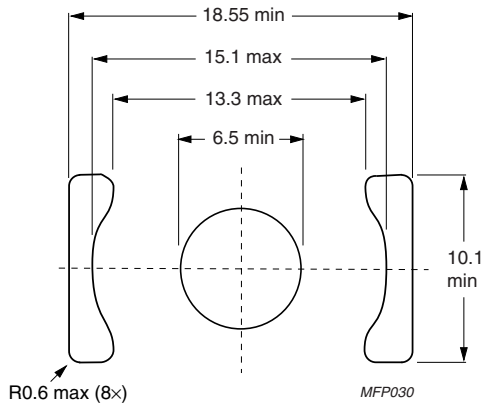


Fig.2 Recommended PCB cut-out for ER18/3.2/10 cores.

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
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