

DATA SHEET

ER18/3/10

Planar ER cores and accessories

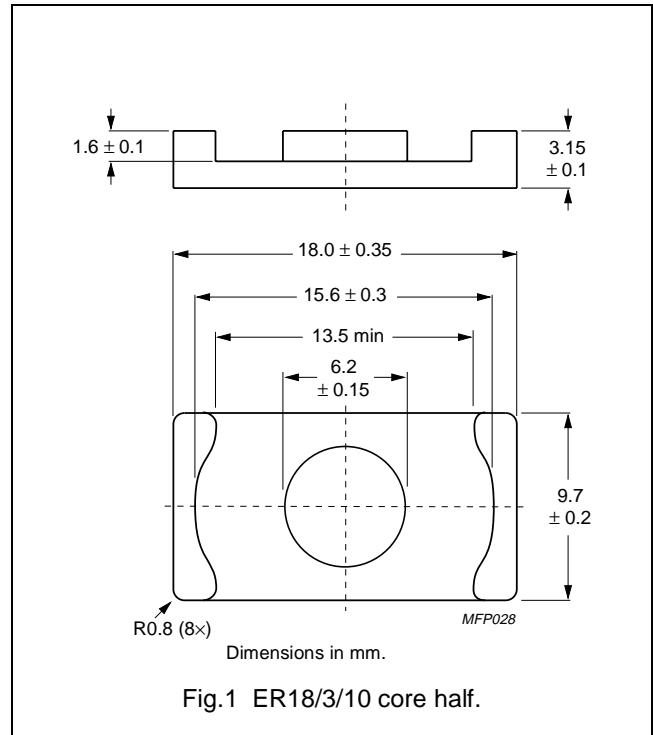
New data

2004 Sep 01

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 |



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 | ER18/3/10-3C92-A160-S |
| | 250 ± 5 % | ≈ 146 | ≈ 150 | ER18/3/10-3C92-A250-S |
| | 400 ± 8 % | ≈ 232 | ≈ 85 | ER18/3/10-3C92-A400-S |
| | 1900 ± 25 % | ≈ 1100 | ≈ 0 | ER18/3/10-3C92-S |
| 3C93 des | 2200 ± 25 % | ≈ 1270 | ≈ 0 | ER18/3/10-3C93-S |
| 3C96 des | 160 ± 3 % | ≈ 93 | ≈ 260 | ER18/3/10-3C96-A160-S |
| | 250 ± 5 % | ≈ 146 | ≈ 155 | ER18/3/10-3C96-A250-S |
| | 400 ± 8 % | ≈ 232 | ≈ 90 | ER18/3/10-3C96-A400-S |
| | 2400 ± 25 % | ≈ 1100 | ≈ 0 | ER18/3/10-3C96-S |
| 3F35 prot | 160 ± 3 % | ≈ 93 | ≈ 260 | ER18/3/10-3F35-A160-S |
| | 250 ± 5 % | ≈ 146 | ≈ 150 | ER18/3/10-3F35-A250-S |
| | 400 ± 8 % | ≈ 232 | ≈ 85 | ER18/3/10-3F35-A400-S |
| | 1800 ± 25 % | ≈ 1100 | ≈ 0 | ER18/3/10-3F35-S |
| 3F4 des | 1300 ± 25 % | ≈ 794 | ≈ 0 | ER18/3/10-3F4-S |
| 3F45 prot | 1300 ± 25 % | ≈ 794 | ≈ 0 | ER18/3/10-3F45-S |

Properties of core sets under power condition

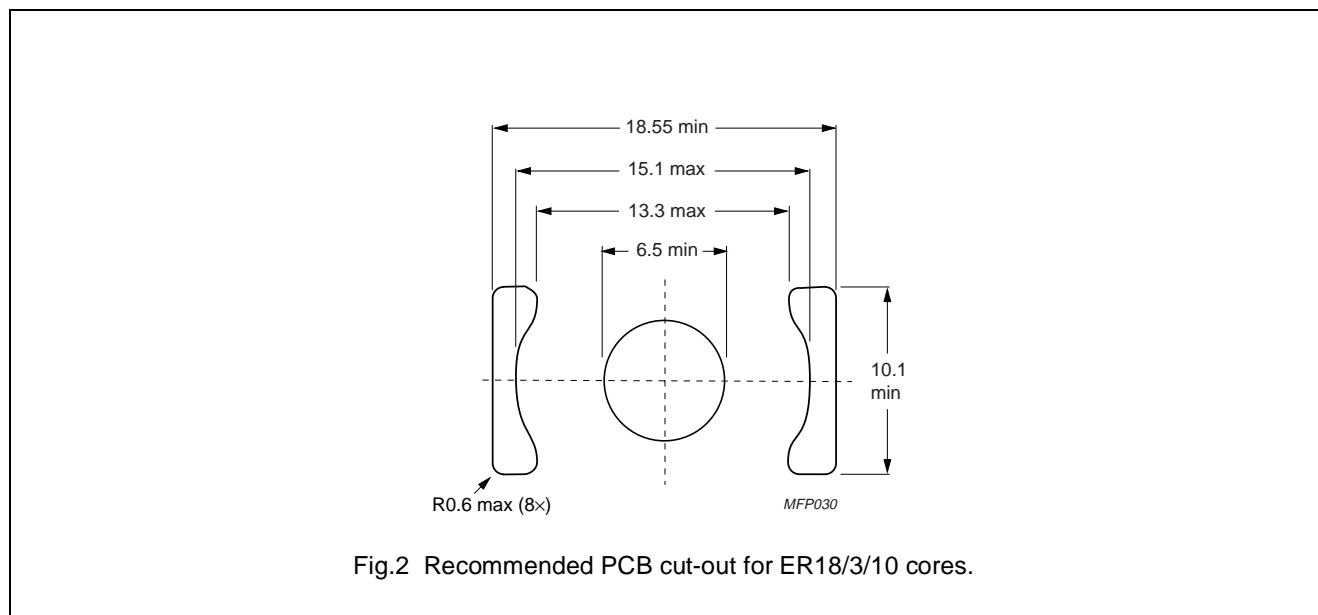
| GRADE | B (mT) at | CORE LOSS (W) at | | | |
|-------|---|--|--|---|--|
| | H = 250 A/m; f = 25 kHz; T = 100 °C | f _a = 100 kHz; B = 100 mT; T = 100 °C | f _a = 100 kHz; B = 200 mT; T = 100 °C | f _a = 500 kHz; B = 50 mT; T = 100 °C | f _a = 500 kHz; B = 100 mT; T = 100 °C |
| 3C92 | ≥ 370 | ≤ 0.052 | ≤ 0.35 | – | – |
| 3C93 | ≥ 320 | ≤ 0.052 ⁽¹⁾ | ≤ 0.35 ⁽¹⁾ | – | – |
| 3C96 | ≥ 340 | ≤ 0.035 | ≤ 0.26 | ≤ 0.22 | – |
| 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 | f _a = 1 MHz; B = 30 mT; T = 100 °C | f _a = 1 MHz; B = 50 mT; T = 100 °C | f _a = 3 MHz; B = 10 mT; T = 100 °C |
| 3F4 | ≥ 250 | ≤ 0.17 | – | ≤ 0.3 |
| 3F45 | ≥ 250 | ≤ 0.13 | ≤ 0.34 | ≤ 0.24 |

MOUNTING INFORMATION



Winding data for ER18/3/10 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. |
| Product specification | Production | This data sheet contains final specifications. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product. |

DISCLAIMER

Life support applications — These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Ferroxcube customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Ferroxcube for any damages resulting from such application.

PRODUCT STATUS DEFINITIONS

| STATUS | INDICATION | DEFINITION |
|------------------|---|--|
| Prototype |  | These are products that have been made as development samples for the purposes of technical evaluation only. The data for these types is provisional and is subject to change. |
| Design-in |  | These products are recommended for new designs. |
| Preferred | | These products are recommended for use in current designs and are available via our sales channels. |
| Support |  | These products are not recommended for new designs and may not be available through all of our sales channels. Customers are advised to check for availability. |