

# DATA SHEET

**E14/3.5/5/R**

**Planar E cores and accessories**

Supersedes data of September 2004

2008 Sep 01



**FERROXCUBE**  
A YAGEO COMPANY

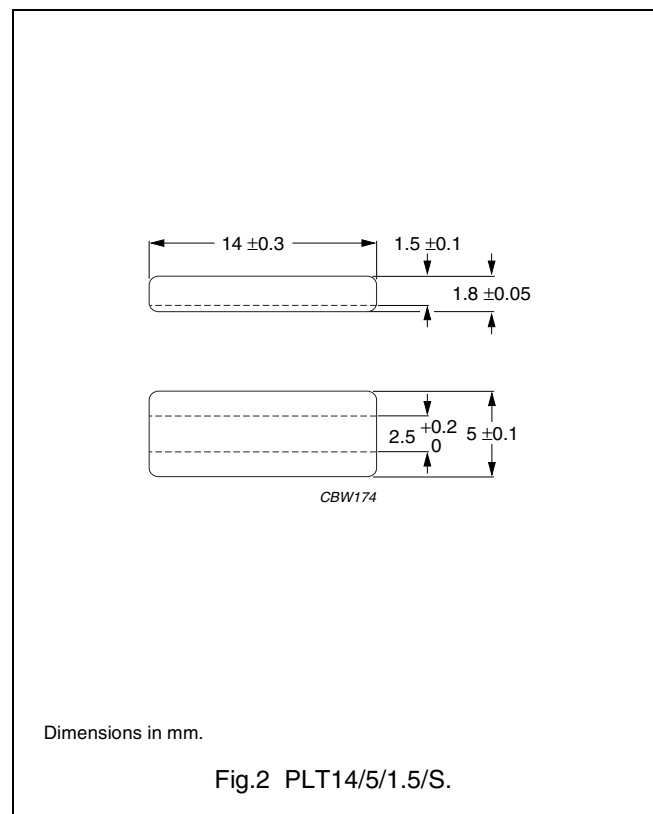
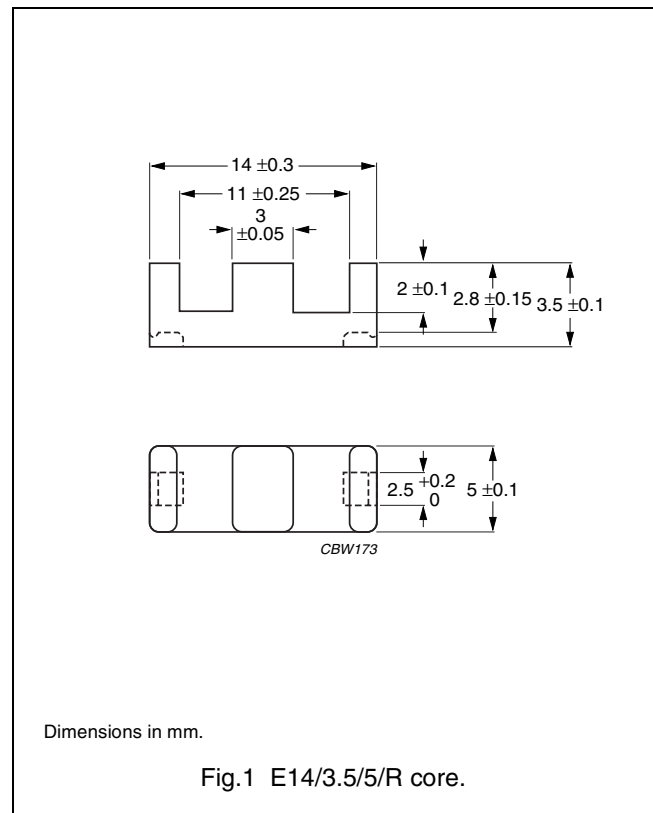
**CORES**

**Effective core parameters of an E/PLT combination**

| SYMBOL        | PARAMETER           | VALUE | UNIT             |
|---------------|---------------------|-------|------------------|
| $\Sigma(l/A)$ | core factor (C1)    | 1.15  | mm <sup>-1</sup> |
| $V_e$         | effective volume    | 230   | mm <sup>3</sup>  |
| $l_e$         | effective length    | 16.4  | mm               |
| $A_e$         | effective area      | 14.2  | mm <sup>2</sup>  |
| $A_{min}$     | minimum area        | 10.9  | mm <sup>2</sup>  |
| m             | mass of E core half | ≈ 0.6 | g                |
| m             | mass of plate       | ≈ 0.5 | g                |

**Ordering information for plates**

| GRADE                    | TYPE NUMBER        |
|--------------------------|--------------------|
| 3C90                     | PLT14/5/1.5/S-3C90 |
| 3C92 <small>des</small>  | PLT14/5/1.5/S-3C92 |
| 3C93 <small>des</small>  | PLT14/5/1.5/S-3C93 |
| 3C94                     | PLT14/5/1.5/S-3C94 |
| 3C95 <small>des</small>  | PLT14/5/1.5/S-3C95 |
| 3C96 <small>des</small>  | PLT14/5/1.5/S-3C96 |
| 3F3                      | PLT14/5/1.5/S-3F3  |
| 3F35 <small>des</small>  | PLT14/5/1.5/S-3F35 |
| 3F4 <small>des</small>   | PLT14/5/1.5/S-3F4  |
| 3F45 <small>prot</small> | PLT14/5/1.5/S-3F45 |
| 3E6                      | PLT14/5/1.5/S-3E6  |



## Planar E cores and accessories

E14/3.5/5/R

**Core halves for use in combination with a slotted plate (PLT/S)**

$A_L$  measured in combination with a slotted plate (PLT/S) clamping force for  $A_L$  measurements  $10 \pm 5$  N; measurement coil as for E14/3.5/5.

| GRADE            | $A_L$<br>(nH)    | $\mu_e$        | AIR GAP<br>( $\mu\text{m}$ ) | TYPE NUMBER             |
|------------------|------------------|----------------|------------------------------|-------------------------|
| 3C90             | 63 $\pm 3\%$     | $\approx 58$   | $\approx 600$                | E14/3.5/5/R-3C90-A63-P  |
|                  | 100 $\pm 5\%$    | $\approx 92$   | $\approx 300$                | E14/3.5/5/R-3C90-A100-P |
|                  | 160 $\pm 8\%$    | $\approx 148$  | $\approx 150$                | E14/3.5/5/R-3C90-A160-P |
|                  | 1500 $\pm 25\%$  | $\approx 1380$ | $\approx 0$                  | E14/3.5/5/R-3C90        |
| 3C92 <b>des</b>  | 1130 $\pm 25\%$  | $\approx 1040$ | $\approx 0$                  | E14/3.5/5/R-3C92        |
| 3C93 <b>des</b>  | 1300 $\pm 25\%$  | $\approx 1200$ | $\approx 0$                  | E14/3.5/5/R-3C93        |
| 3C94             | 63 $\pm 3\%$     | $\approx 58$   | $\approx 600$                | E14/3.5/5/R-3C94-A63-P  |
|                  | 100 $\pm 5\%$    | $\approx 92$   | $\approx 300$                | E14/3.5/5/R-3C94-A100-P |
|                  | 160 $\pm 8\%$    | $\approx 148$  | $\approx 150$                | E14/3.5/5/R-3C94-A160-P |
|                  | 1500 $\pm 25\%$  | $\approx 1380$ | $\approx 0$                  | E14/3.5/5/R-3C94        |
| 3C95 <b>des</b>  | 1740 $\pm 25\%$  | $\approx 1600$ | $\approx 0$                  | E14/3.5/5/R-3C95        |
| 3C96 <b>des</b>  | 1350 $\pm 25\%$  | $\approx 1240$ | $\approx 0$                  | E14/3.5/5/R-3C96        |
| 3F3              | 63 $\pm 3\%$     | $\approx 58$   | $\approx 600$                | E14/3.5/5/R-3F3-A63-P   |
|                  | 100 $\pm 5\%$    | $\approx 92$   | $\approx 300$                | E14/3.5/5/R-3F3-A100-P  |
|                  | 160 $\pm 8\%$    | $\approx 148$  | $\approx 150$                | E14/3.5/5/R-3F3-A160-P  |
|                  | 1300 $\pm 25\%$  | $\approx 1200$ | $\approx 0$                  | E14/3.5/5/R-3F3         |
| 3F35 <b>des</b>  | 1050 $\pm 25\%$  | $\approx 970$  | $\approx 0$                  | E14/3.5/5/R-3F35        |
| 3F4 <b>des</b>   | 63 $\pm 3\%$     | $\approx 58$   | $\approx 600$                | E14/3.5/5/R-3F4-A63-P   |
|                  | 100 $\pm 5\%$    | $\approx 92$   | $\approx 300$                | E14/3.5/5/R-3F4-A100-P  |
|                  | 160 $\pm 8\%$    | $\approx 148$  | $\approx 150$                | E14/3.5/5/R-3F4-A160-P  |
|                  | 780 $\pm 25\%$   | $\approx 710$  | $\approx 0$                  | E14/3.5/5/R-3F4         |
| 3F45 <b>prot</b> | 780 $\pm 25\%$   | $\approx 710$  | $\approx 0$                  | E14/3.5/5/R-3F45        |
| 3E6              | 6400 $+40/-30\%$ | $\approx 5900$ | $\approx 0$                  | E14/3.5/5/R-3E6         |

## Planar E cores and accessories

E14/3.5/5/R

## Properties of core sets under power conditions

| GRADE              | B (mT) at                                 | CORE LOSS (W) at                                  |  |   |  |  |
|--------------------|---|---|--|---|--|--|
|                    | H = 250 A/m;<br>f = 25 kHz;<br>T = 100 °C | f = 100 kHz;<br>$\hat{B}$ = 100 mT;<br>T = 100 °C | f = 100 kHz;<br>$\hat{B}$ = 200 mT;<br>T = 25 °C | f = 100 kHz;<br>$\hat{B}$ = 200 mT;<br>T = 100 °C | f = 400 kHz;<br>$\hat{B}$ = 50 mT;<br>T = 100 °C | f = 500 kHz;<br>$\hat{B}$ = 50 mT;<br>T = 100 °C |
| E14/R+PLT14/S-3C90 | ≥320                                      | ≤ 0.026   | –  | –   | –  | –  |
| E14/R+PLT14/S-3C92 | ≥370                                      | ≤ 0.021   | –  | ≤ 0.15  | –  | –  |
| E14/R+PLT14/S-3C93 | ≥320                                      | ≤ 0.021 <sup>(1)</sup>                            | –  | ≤ 0.15 <sup>(1)</sup>                             | –  | –  |
| E14/R+PLT14/S-3C94 | ≥320                                      | ≤ 0.021   | –  | ≤ 0.15  | –  | –  |
| E14/R+PLT14/S-3C95 | ≥320                                      | –   | ≤ 0.13   | ≤ 0.12  | –  | –  |
| E14/R+PLT14/S-3C96 | ≥340                                      | ≤ 0.016   | –  | ≤ 0.12  | ≤ 0.045  | ≤ 0.09   |
| E14/R+PLT14/S-3F3  | ≥300                                      | ≤ 0.027   | –  | –   | ≤ 0.047  | –  |
| E14/R+PLT14/S-3F35 | ≥300                                      | –   | –  | –   | ≤ 0.024  | ≤ 0.035  |
| E14/R+PLT14/S-3F4  | ≥250                                      | –   | –  | –   | –  | –  |
| E14/R+PLT14/S-3F45 | ≥250                                      | –   | –  | –   | –  | –  |

1. Measured at 140 °C.

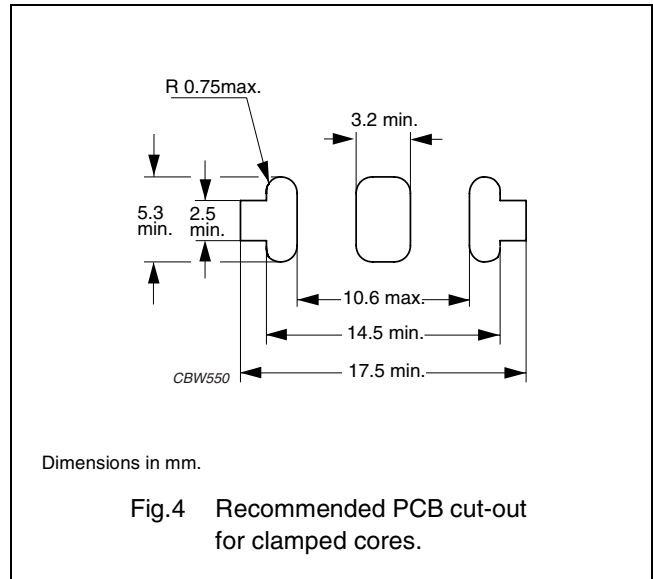
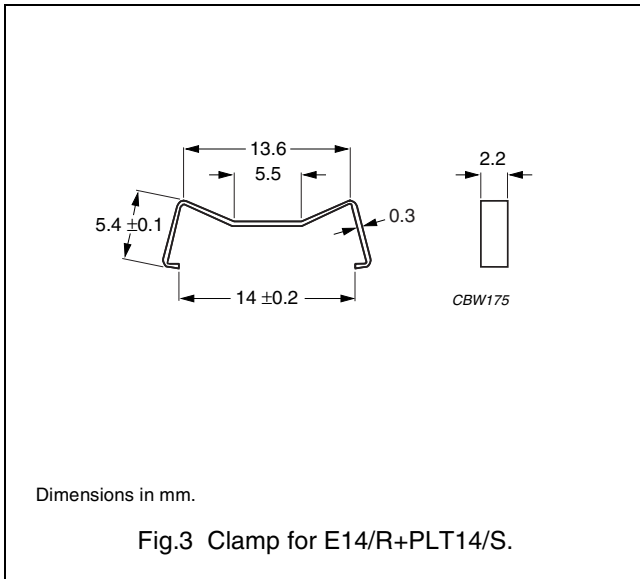
## Properties of core sets under power conditions (continued)

| GRADE              | B (mT) at                                 | CORE LOSS (W) at                                  |  |  |  |
|--------------------|---|---|--|--|--|
|                    | H = 250 A/m;<br>f = 25 kHz;<br>T = 100 °C | f = 500 kHz;<br>$\hat{B}$ = 100 mT;<br>T = 100 °C | f = 1 MHz;<br>$\hat{B}$ = 30 mT;<br>T = 100 °C | f = 1 MHz;<br>$\hat{B}$ = 50 mT;<br>T = 100 °C | f = 3 MHz;<br>$\hat{B}$ = 10 mT;<br>T = 100 °C |
| E14/R+PLT14/S-3C90 | ≥320                                      | –   | –  | –  | –  |
| E14/R+PLT14/S-3C92 | ≥370                                      | –   | –  | –  | –  |
| E14/R+PLT14/S-3C93 | ≥320                                      | –   | –  | –  | –  |
| E14/R+PLT14/S-3C94 | ≥320                                      | –   | –  | –  | –  |
| E14/R+PLT14/S-3C95 | ≥320                                      | –   | –  | –  | –  |
| E14/R+PLT14/S-3C96 | ≥340                                      | –   | –  | –  | –  |
| E14/R+PLT14/S-3F3  | ≥300                                      | –   | –  | –  | –  |
| E14/R+PLT14/S-3F35 | ≥300                                      | ≤ 0.027   | –  | –  | –  |
| E14/R+PLT14/S-3F4  | ≥250                                      | –   | ≤ 0.07   | –  | ≤ 0.11   |
| E14/R+PLT14/S-3F45 | ≥250                                      | –   | ≤ 0.055  | ≤ 0.2  | ≤ 0.09   |

**MOUNTING PARTS**

**General data and ordering information**

| ITEM  | MATERIAL               | FIGURE | TYPE NUMBER   |
|-------|------------------------|--------|---------------|
| Clamp | stainless steel (CrNi) | 3      | CLM-E14/PLT14 |



**BLISTER TAPE AND REEL**

For blister tape dimensions and construction and reel dimensions, see data sheet "E14/3.5/5".

## Planar E cores and accessories

E14/3.5/5/R

## 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. |

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## PRODUCT STATUS DEFINITIONS

| STATUS           | INDICATION  | DEFINITION   |
|------------------|---|--|
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| <b>Design-in</b> |  | These products are recommended for new designs.  |
| <b>Preferred</b> |   | These products are recommended for use in current designs and are available via our sales channels.  |
| <b>Support</b>   |  | These products are <b>not</b> recommended for new designs and may not be available through all of our sales channels. Customers are advised to check for availability.         |