

# DATA SHEET

**ETD54/28/19**

**ETD cores and accessories**

Supersedes data of September 2004

2008 Sep 01

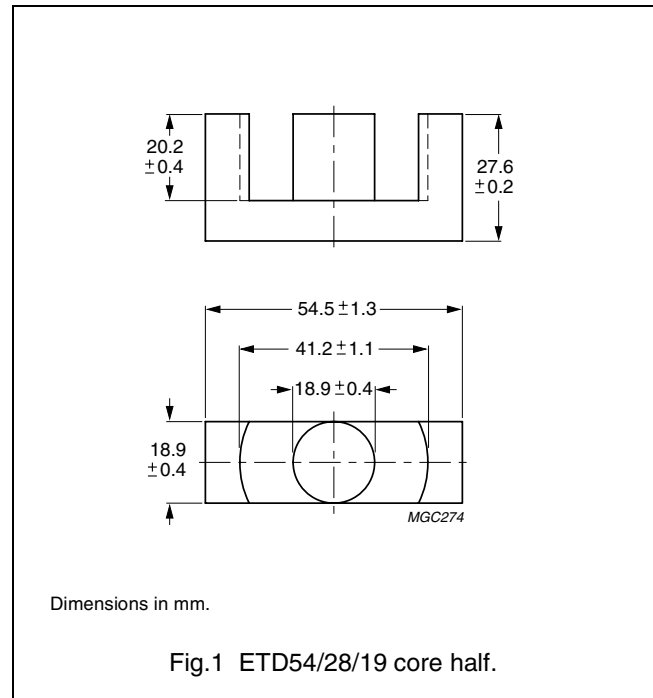
## ETD cores and accessories

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## CORE SETS

## Effective core parameters

| SYMBOL        | PARAMETER         | VALUE | UNIT             |
|---------------|-------------------|-------|------------------|
| $\Sigma(l/A)$ | core factor (C1)  | 0.454 | mm <sup>-1</sup> |
| $V_e$         | effective volume  | 35500 | mm <sup>3</sup>  |
| $l_e$         | effective length  | 127   | mm               |
| $A_e$         | effective area    | 280   | mm <sup>2</sup>  |
| $A_{min}$     | minimum area      | 270   | mm <sup>2</sup>  |
| $m$           | mass of core half | ≈ 90  | g                |



## Core halves

Clamping force for  $A_L$  measurements,  $50 \pm 20$  N. Gapped cores are available on request.

| GRADE                                                                                | $A_L$<br>(nH)   | $\mu_e$ | AIR GAP<br>( $\mu$ m) | TYPE NUMBER      |
|--------------------------------------------------------------------------------------|-----------------|---------|-----------------------|------------------|
| 3C90                                                                                 | 5000 $\pm 25\%$ | ≈ 1810  | ≈ 0                   | ETD54/28/19-3C90 |
| 3C94                                                                                 | 5000 $\pm 25\%$ | ≈ 1810  | ≈ 0                   | ETD54/28/19-3C94 |
| 3C95 <span style="background-color: black; color: white; padding: 0 2px;">des</span> | 6120 $\pm 25\%$ | ≈ 2210  | ≈ 0                   | ETD54/28/19-3C95 |
| 3F3                                                                                  | 4600 $\pm 25\%$ | ≈ 1660  | ≈ 0                   | ETD54/28/19-3F3  |

## 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 = 25 kHz;<br>$\hat{B}$ = 200 mT;<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 |
| 3C90  | ≥ 330                                     | ≤ 4.3                                            | ≤ 4.8                                             | —                                                | —                                                 | —                                                |
| 3C94  | ≥ 330                                     | —                                                | ≤ 3.6                                             | —                                                | ≤ 21                                              | —                                                |
| 3C95  | ≥ 330                                     | —                                                | —                                                 | ≤ 22.4                                           | ≤ 21.3                                            | —                                                |
| 3F3   | ≥ 320                                     | —                                                | ≤ 4.5                                             | —                                                | —                                                 | ≤ 8.5                                            |

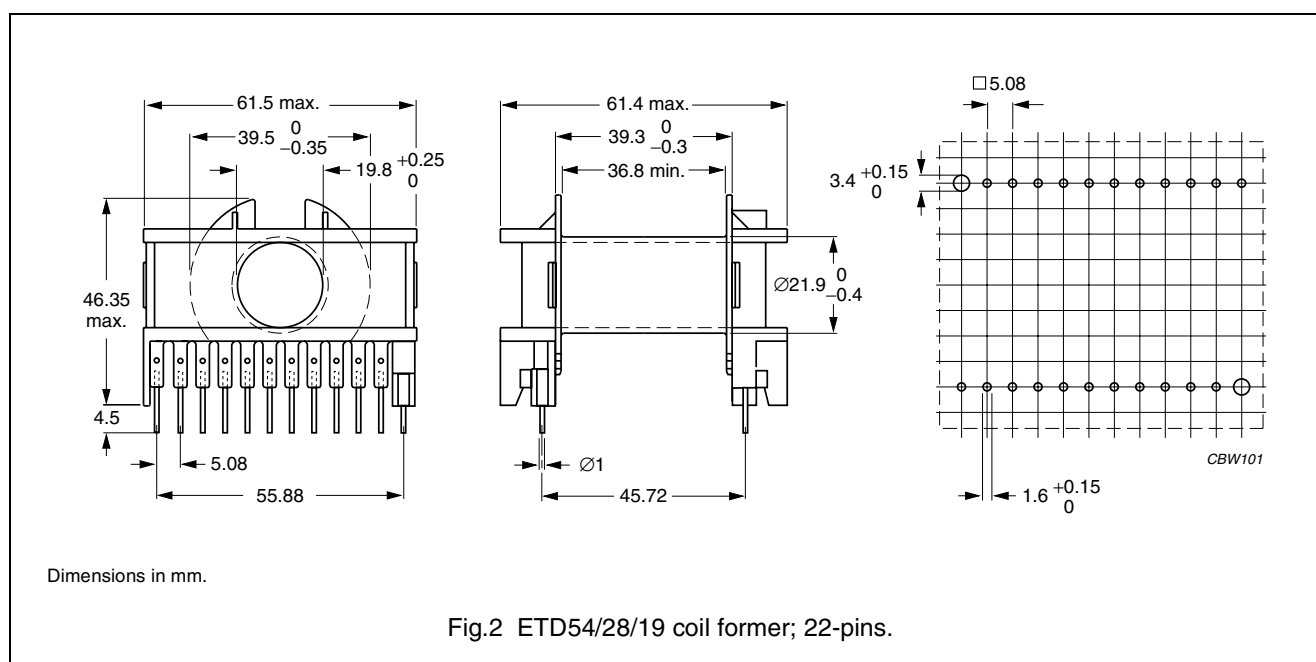
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## COIL FORMERS

## General data 22-pins ETD54/28/19 coil former

| ITEM                          | SPECIFICATION                                                                                                            |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Coil former material          | polybutyleneterephthalate (PBT), glass-reinforced, flame retardant in accordance with UL 94V-0; UL file number E45329(M) |
| Pin material                  | copper-tin alloy (CuSn), tin (Sn) plated                                                                                 |
| Maximum operating temperature | 155 °C, "IEC 60085", class F                                                                                             |
| Resistance to soldering heat  | "IEC 60068-2-20", Part 2, Test Tb, method 1B, 350 °C, 3.5 s                                                              |
| Solderability                 | "IEC 60068-2-20", Part 2, Test Ta, method 1                                                                              |



## Winding data and area product for 22-pins ETD54/28/19 coil former

| NUMBER OF SECTIONS | WINDING AREA (mm <sup>2</sup> ) | MINIMUM WINDING WIDTH (mm) | AVERAGE LENGTH OF TURN (mm) | AREA PRODUCT Ae x Aw (mm <sup>4</sup> ) | TYPE NUMBER      |
|--------------------|---------------------------------|----------------------------|-----------------------------|-----------------------------------------|------------------|
| 1                  | 316                             | 36.8                       | 96                          | 88500                                   | CPH-ETD54-1S-22P |

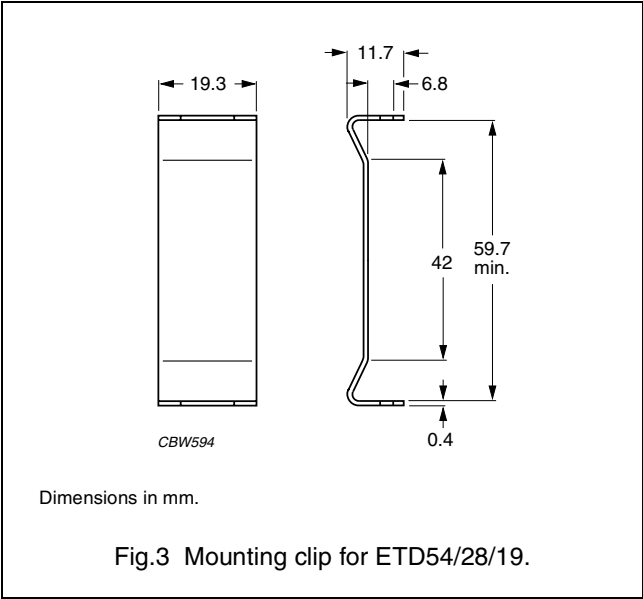
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MOUNTING PARTS

General data

| ITEM          | REMARKS                   | FIGURE | TYPE NUMBER |
|---------------|---------------------------|--------|-------------|
| Mounting clip | material: stainless steel | 3      | CLI-ETD54   |



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## 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                                                                                                                                                                     |
|-----------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 <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.         |