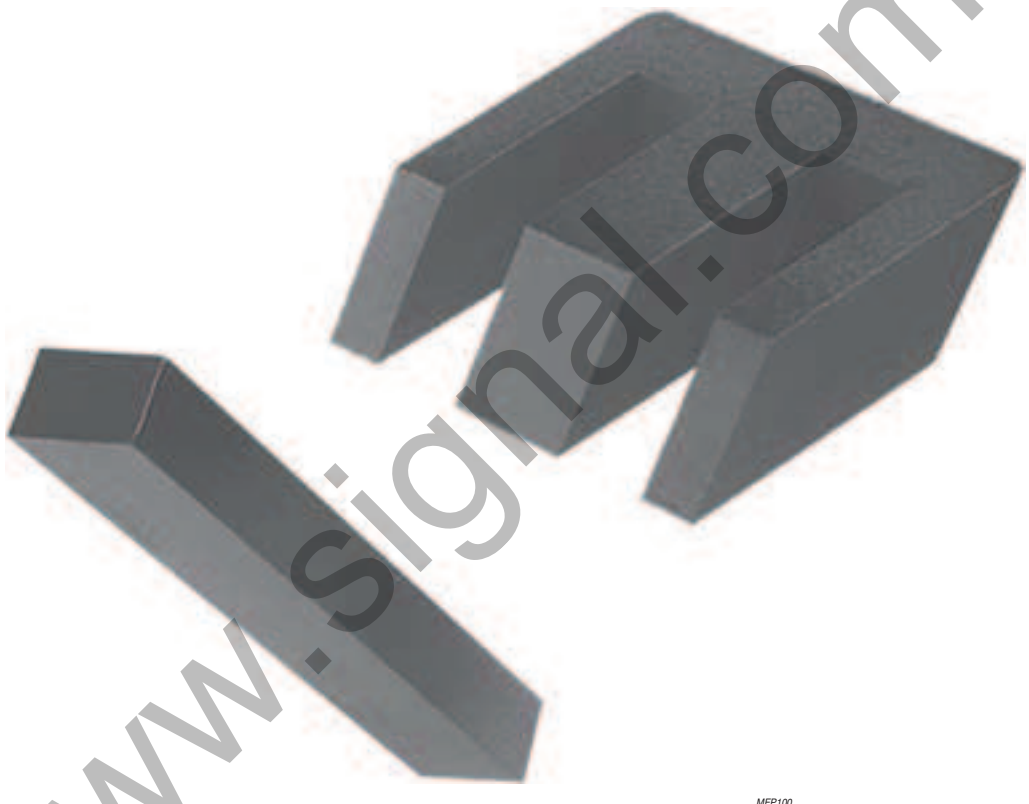


MFP100

## PRODUCT OVERVIEW AND TYPE NUMBER STRUCTURE

### Product overview EI cores

| CORE TYPE | $V_e$ ($mm^3$) | $A_e$ ($mm^2$) | MASS (g) |
|---|---|---|---|
| E16/12/5 | 701 | 19.4 | 2.7 |
| I16/2.4/5 | – | – | 0.9 |
| E20/14/5 | 913 | 22.8 | 3.8 |
| I20/2.3/5 | – | – | 1.1 |
| E22/15/6 | 1450 | 33.1 | 5.9 |
| I22/4/6 | – | – | 2.3 |
| E25/17/6 | 2070 | 40.3 | 8.0 |
| I25/3/6 | – | – | 2.5 |
| E28/17/11 | 4120 | 83.7 | 17 |
| I28/3.5/11 | – | – | 5.1 |
| E30/21/11 | 6720 | 113 | 25 |
| I30/5.5/11 | – | – | 8.6 |
| E33/23/13 | 7910 | 118 | 31 |
| I33/5/13 | – | – | 10 |
| E35/24/10 | 6270 | 89.3 | 24 |
| I35/5/10 | – | – | 7.4 |
| E40/27/12 | 11100 | 143 | 42 |
| I40/7.5/12 | – | – | 17 |

Note :
All effective dimensions for E/I combination

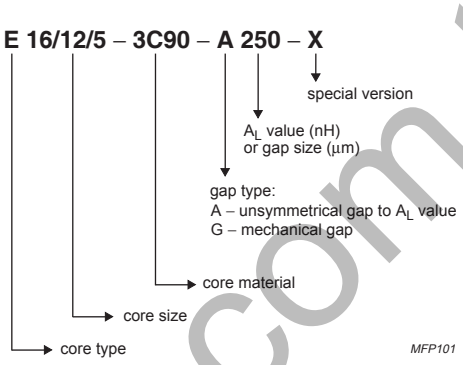



Fig.1 Type number structure for E cores.

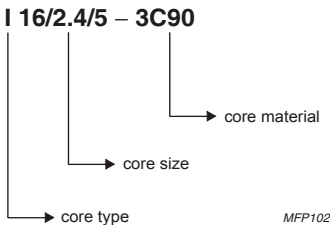



Fig.2 Type number structure for I cores.

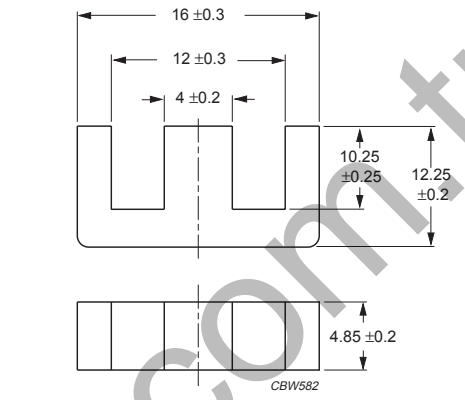
## CORES

### Effective core parameters of an E / I combination

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $\Sigma(l/A)$ | core factor (C1) | 1.85 | $mm^{-1}$ |
| $V_e$ | effective volume | 701 | $mm^3$ |
| $l_e$ | effective length | 35.8 | mm |
| $A_e$ | effective area | 19.4 | $mm^2$ |
| $A_{min}$ | minimum area | 19.4 | $mm^2$ |
| m | mass of E core | ≈ 2.7 | g |
| m | mass of I core | ≈ 0.9 | g |

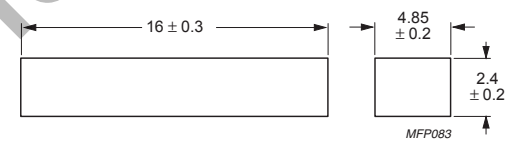
### Ordering information for I cores

| GRADE | TYPE NUMBER |
|---|---|
| 3C90 | I16/2.4/5-3C90 |




Dimensions in mm.

Fig.1 E16/12/5 core.




Dimensions in mm.

Fig.2 I16/2.4/5.

### Core halves for use in combination with an I core

$A_L$ measured in combination with an I core, clamping force for $A_L$ measurements 20 ± 10 N;

| GRADE | $A_L$ (nH) | $\mu_e$ | AIR GAP ($\mu$m) | TYPE NUMBER |
|---|---|---|---|---|
| 3C90 | 1000 ± 25 % | ≈ 1470 | ≈ 0 | E16/12/5-3C90 |

### Properties of core sets under power conditions

| GRADE | B (mT) at | CORE LOSS (W) at | |
|---|---|---|---|
| | H = 250 A/m; f = 25 kHz; T = 100 °C | f = 25 kHz; $\hat{B}$ = 200 mT; T = 100 °C | f = 100 kHz; $\hat{B}$ =100 mT; T = 100 °C |
| E16/12/5+I16/2.4/5-3C90 | ≥ 320 | ≤ 0.08 | ≤ 0.08 |

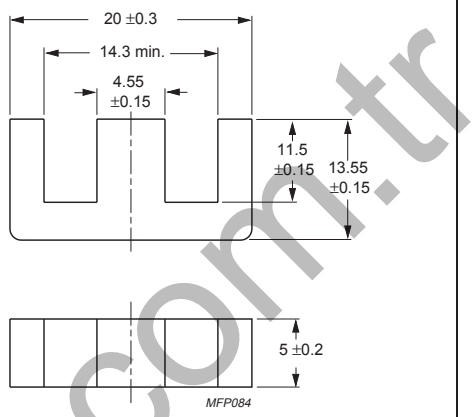
## CORES

### Effective core parameters of an E / I combination

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $\Sigma(l/A)$ | core factor (C1) | 1.76 | $mm^{-1}$ |
| $V_e$ | effective volume | 913 | $mm^3$ |
| $l_e$ | effective length | 40.1 | mm |
| $A_e$ | effective area | 22.8 | $mm^2$ |
| $A_{min}$ | minimum area | 22.0 | $mm^2$ |
| m | mass of E core | ≈ 3.8 | g |
| m | mass of I core | ≈ 1.1 | g |

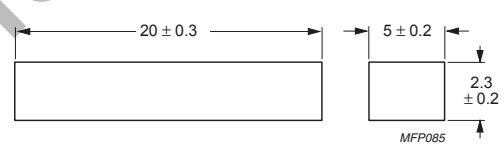
### Ordering information for I cores

| GRADE | TYPE NUMBER |
|---|---|
| 3C90 | I20/2.3/5-3C90 |




Dimensions in mm.

Fig.1 E20/14/5 core.




Dimensions in mm.

Fig.2 I20/2.3/5.

### Core halves for use in combination with an I core

$A_L$ measured in combination with an I core, clamping force for $A_L$ measurements 20 ± 10 N;

| GRADE | $A_L$ (nH) | $\mu_e$ | AIR GAP ($\mu$m) | TYPE NUMBER |
|---|---|---|---|---|
| 3C90 | 1290 ± 25 % | ≈ 1810 | ≈ 0 | E20/14/5-3C90 |

### Properties of core sets under power conditions

| GRADE | B (mT) at | CORE LOSS (W) at | |
|---|---|---|---|
| | H = 250 A/m; f = 25 kHz; T = 100 °C | f = 25 kHz; $\hat{B}$ = 200 mT; T = 100 °C | f = 100 kHz; $\hat{B}$ =100 mT; T = 100 °C |
| E20/14/5+I20/2.3/5-3C90 | ≥ 320 | ≤ 0.11 | ≤ 0.11 |

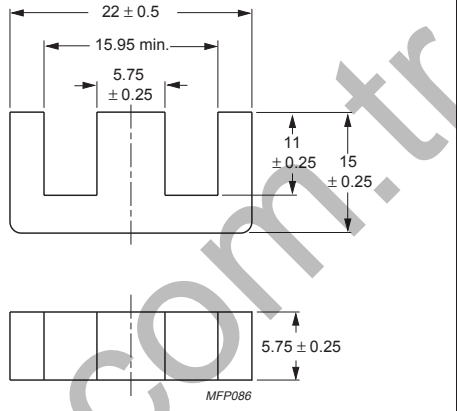
## CORES

### Effective core parameters of an E / I combination

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $\Sigma(l/A)$ | core factor (C1) | 1.33 | $mm^{-1}$ |
| $V_e$ | effective volume | 1450 | $mm^3$ |
| $l_e$ | effective length | 44.0 | mm |
| $A_e$ | effective area | 33.1 | $mm^2$ |
| $A_{min}$ | minimum area | 32.0 | $mm^2$ |
| m | mass of E core | ≈ 5.9 | g |
| m | mass of I core | ≈ 2.3 | g |

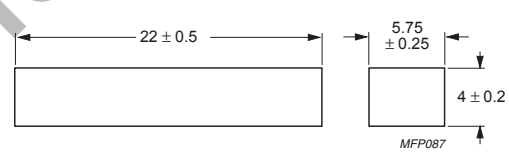
### Ordering information for I cores

| GRADE | TYPE NUMBER |
|---|---|
| 3C90 | I22/4/6-3C90 |




Dimensions in mm.

Fig.1 E22/15/6 core.




Dimensions in mm.

Fig.2 I22/4/6.

### Core halves for use in combination with an I core

$A_L$ measured in combination with an I core, clamping force for $A_L$ measurements 20 ± 10 N;

| GRADE | $A_L$ (nH) | $\mu_e$ | AIR GAP ($\mu$m) | TYPE NUMBER |
|---|---|---|---|---|
| 3C90 | 1750 ± 25 % | ≈ 1850 | ≈ 0 | E22/15/6-3C90 |

### Properties of core sets under power conditions

| GRADE | B (mT) at | CORE LOSS (W) at | | |
|---|---|---|---|---|
| | H = 250 A/m; f = 25 kHz; T = 100 °C | f = 25 kHz; $\hat{B}$ = 200 mT; T = 100 °C | f = 100 kHz; $\hat{B}$ =100 mT; T = 100 °C | f = 400 kHz; $\hat{B}$ =50 mT; T = 100 °C |
| E22/15/6+I22/4/6-3C90 | ≥ 330 | ≤ 0.17 | ≤ 0.17 | – |

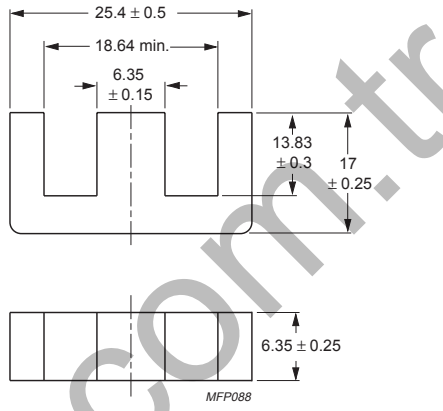
## CORES

### Effective core parameters of an E / I combination

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $\Sigma(l/A)$ | core factor (C1) | 1.27 | $mm^{-1}$ |
| $V_e$ | effective volume | 2070 | $mm^3$ |
| $l_e$ | effective length | 51.3 | mm |
| $A_e$ | effective area | 40.3 | $mm^2$ |
| $A_{min}$ | minimum area | 39.0 | $mm^2$ |
| m | mass of E core | ≈ 8.0 | g |
| m | mass of I core | ≈ 2.5 | g |

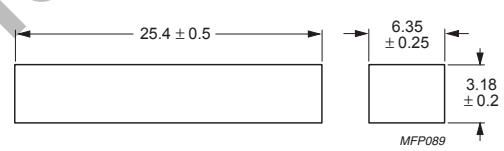
### Ordering information for I cores

| GRADE | TYPE NUMBER |
|---|---|
| 3C90 | I25/3/6-3C90 |




Dimensions in mm.

Fig.1 E25/17/6 core.




Dimensions in mm.

Fig.2 I25/3/6.

### Core halves for use in combination with an I core

$A_L$ measured in combination with an I core, clamping force for $A_L$ measurements 20 ± 10 N;

| GRADE | $A_L$ (nH) | $\mu_e$ | AIR GAP ($\mu$m) | TYPE NUMBER |
|---|---|---|---|---|
| 3C90 | 1750 ± 25 % | ≈ 1770 | ≈ 0 | E25/17/6-3C90 |

### Properties of core sets under power conditions

| GRADE | B (mT) at | CORE LOSS (W) at | |
|---|---|---|---|
| | H = 250 A/m; f = 25 kHz; T = 100 °C | f = 25 kHz; $\hat{B}$ = 200 mT; T = 100 °C | f = 100 kHz; $\hat{B}$ =100 mT; T = 100 °C |
| E25/17/6+I25/3/6-3C90 | ≥ 330 | ≤ 0.24 | ≤ 0.24 |

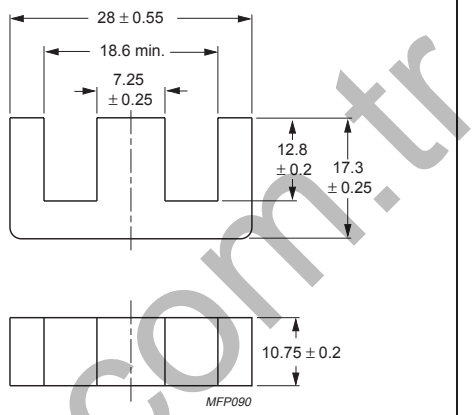
## CORES

### Effective core parameters of an E / I combination

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $\Sigma(l/A)$ | core factor (C1) | 0.588 | $mm^{-1}$ |
| $V_e$ | effective volume | 4120 | $mm^3$ |
| $l_e$ | effective length | 49.2 | mm |
| $A_e$ | effective area | 83.7 | $mm^2$ |
| $A_{min}$ | minimum area | 83.7 | $mm^2$ |
| m | mass of E core | ≈ 17 | g |
| m | mass of I core | ≈ 5.1 | g |

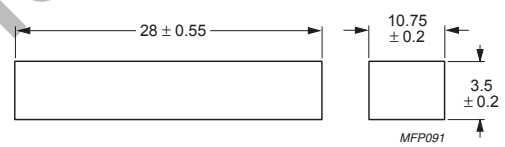
### Ordering information for I cores

| GRADE | TYPE NUMBER |
|---|---|
| 3C90 | I28/3.5/11-3C90 |




Dimensions in mm.

Fig.1 E28/17/11 core.




Dimensions in mm.

Fig.2 I28/3.5/11.

### Core halves for use in combination with an I core

$A_L$ measured in combination with an I core, clamping force for $A_L$ measurements 40 ± 20 N;

| GRADE | $A_L$ (nH) | $\mu_e$ | AIR GAP ($\mu$m) | TYPE NUMBER |
|---|---|---|---|---|
| 3C90 | 3625 ± 25 % | ≈ 1700 | ≈ 0 | E28/17/11-3C90 |

### Properties of core sets under power conditions

| GRADE | B (mT) at | CORE LOSS (W) at | | |
|---|---|---|---|---|
| | H = 250 A/m; f = 25 kHz; T = 100 °C | f = 25 kHz; $\hat{B}$ = 200 mT; T = 100 °C | f = 100 kHz; $\hat{B}$ =100 mT; T = 100 °C | f = 400 kHz; $\hat{B}$ =50 mT; T = 100 °C |
| E28/17/11+I28/3.5/11-3C90 | ≥ 330 | ≤ 0.5 | ≤ 0.5 | – |

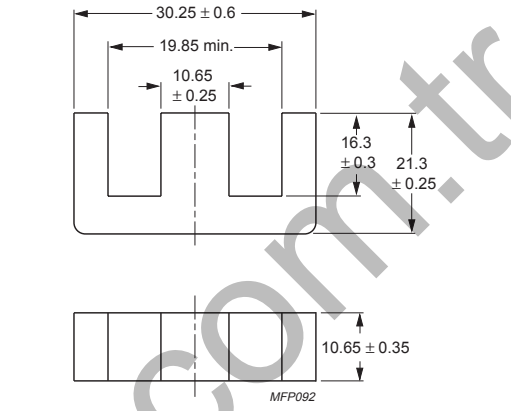
## CORES

### Effective core parameters of an E / I combination

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $\Sigma(l/A)$ | core factor (C1) | 0.524 | $mm^{-1}$ |
| $V_e$ | effective volume | 6720 | $mm^3$ |
| $l_e$ | effective length | 59.2 | mm |
| $A_e$ | effective area | 113 | $mm^2$ |
| $A_{min}$ | minimum area | 104 | $mm^2$ |
| m | mass of E core | ≈ 25 | g |
| m | mass of I core | ≈ 8.6 | g |

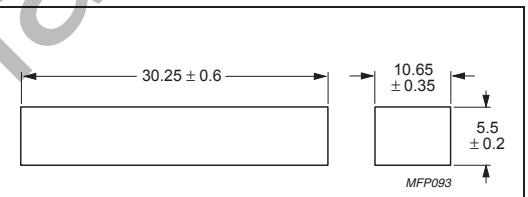
### Ordering information for I cores

| GRADE | TYPE NUMBER |
|---|---|
| 3C90 | I30/5.5/11-3C90 |




Dimensions in mm.

Fig.1 E30/21/11 core.




Dimensions in mm.

Fig.2 I30/5.5/11.

### Core halves for use in combination with an I core

$A_L$ measured in combination with an I core, clamping force for $A_L$ measurements 40 ± 20 N;

| GRADE | $A_L$ (nH) | $\mu_e$ | AIR GAP ($\mu$m) | TYPE NUMBER |
|---|---|---|---|---|
| 3C90 | 4300 ± 25 % | ≈ 1790 | ≈ 0 | E30/21/11-3C90 |

### Properties of core sets under power conditions

| GRADE | B (mT) at | CORE LOSS (W) at | |
|---|---|---|---|
| | H = 250 A/m; f = 25 kHz; T = 100 °C | f = 25 kHz; $\hat{B}$ = 200 mT; T = 100 °C | f = 100 kHz; $\hat{B}$ =100 mT; T = 100 °C |
| E30/21/11+I30/5.5/11-3C90 | ≥ 330 | ≤ 0.8 | ≤ 0.8 |

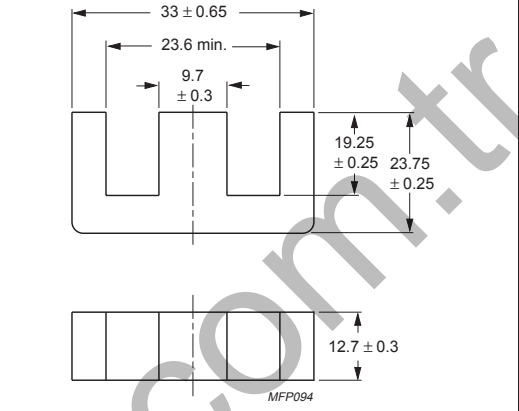
## CORES

### Effective core parameters of an E / I combination

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $\Sigma(l/A)$ | core factor (C1) | 0.567 | $mm^{-1}$ |
| $V_e$ | effective volume | 7910 | $mm^3$ |
| $l_e$ | effective length | 66.9 | mm |
| $A_e$ | effective area | 118 | $mm^2$ |
| $A_{min}$ | minimum area | 114 | $mm^2$ |
| m | mass of E core | ≈ 31 | g |
| m | mass of I core | ≈ 10 | g |

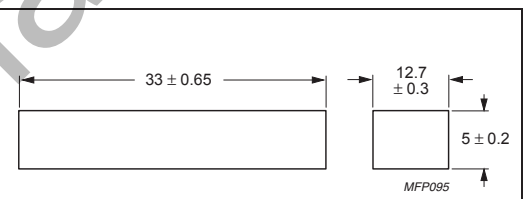
### Ordering information for I cores

| GRADE | TYPE NUMBER |
|---|---|
| 3C90 | I33/5/13-3C90 |




Dimensions in mm.

Fig.1 E33/23/13 core.




Dimensions in mm.

Fig.2 I33/5/13.

### Core halves for use in combination with an I core

$A_L$ measured in combination with an I core, clamping force for $A_L$ measurements 40 ± 20 N;

| GRADE | $A_L$ (nH) | $\mu_e$ | AIR GAP ($\mu$m) | TYPE NUMBER |
|---|---|---|---|---|
| 3C90 | 4300 ± 25 % | ≈ 1940 | ≈ 0 | E33/23/13-3C90 |

### Properties of core sets under power conditions

| GRADE | B (mT) at | CORE LOSS (W) at | |
|---|---|---|---|
| | H = 250 A/m; f = 25 kHz; T = 100 °C | f = 25 kHz; $\hat{B}$ = 200 mT; T = 100 °C | f = 100 kHz; $\hat{B}$ =100 mT; T = 100 °C |
| E33/23/13+I33/5/13-3C90 | ≥ 330 | ≤ 0.95 | ≤ 0.95 |

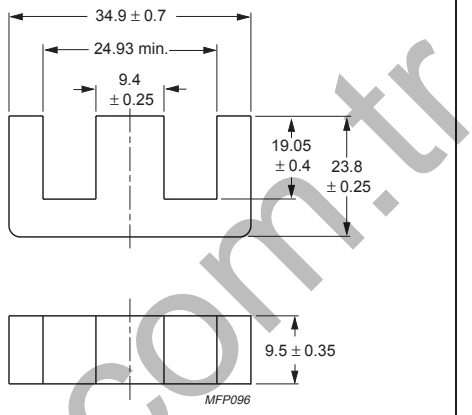
## CORES

### Effective core parameters of an E / I combination

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $\Sigma(l/A)$ | core factor (C1) | 0.786 | $mm^{-1}$ |
| $V_e$ | effective volume | 6270 | $mm^3$ |
| $l_e$ | effective length | 70.2 | mm |
| $A_e$ | effective area | 89.3 | $mm^2$ |
| $A_{min}$ | minimum area | 88.0 | $mm^2$ |
| m | mass of E core | ≈ 24 | g |
| m | mass of I core | ≈ 7.4 | g |

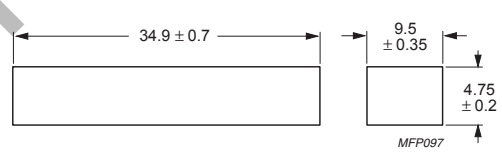
### Ordering information for I cores

| GRADE | TYPE NUMBER |
|---|---|
| 3C90 | I35/5/10-3C90 |




Dimensions in mm.

Fig.1 E35/24/10 core.




Dimensions in mm.

Fig.2 I35/5/10.

### Core halves for use in combination with an I core

$A_L$ measured in combination with an I core, clamping force for $A_L$ measurements 40 ± 20 N;

| GRADE | $A_L$ (nH) | $\mu_e$ | AIR GAP ($\mu$m) | TYPE NUMBER |
|---|---|---|---|---|
| 3C90 | 2960 ± 25 % | ≈ 1850 | ≈ 0 | E35/24/10-3C90 |

### Properties of core sets under power conditions

| GRADE | B (mT) at | CORE LOSS (W) at | |
|---|---|---|---|
| | H = 250 A/m; f = 25 kHz; T = 100 °C | f = 25 kHz; $\hat{B}$ = 200 mT; T = 100 °C | f = 100 kHz; $\hat{B}$ =100 mT; T = 100 °C |
| E35/24/10+I35/5/10-3C90 | ≥ 330 | ≤ 0.75 | ≤ 0.75 |

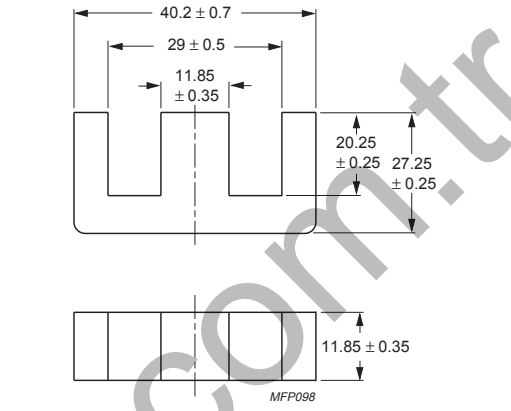
## CORES

### Effective core parameters of an E / I combination

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $\Sigma(l/A)$ | core factor (C1) | 0.542 | $mm^{-1}$ |
| $V_e$ | effective volume | 11100 | $mm^3$ |
| $l_e$ | effective length | 77.5 | mm |
| $A_e$ | effective area | 143 | $mm^2$ |
| $A_{min}$ | minimum area | 133 | $mm^2$ |
| m | mass of E core | ≈ 42 | g |
| m | mass of I core | ≈ 17 | g |

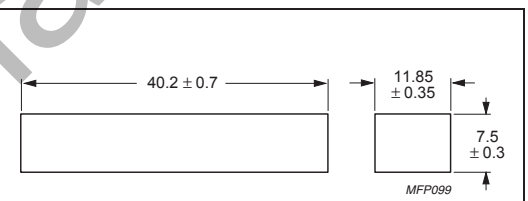
### Ordering information for I cores

| GRADE | TYPE NUMBER |
|---|---|
| 3C90 | I40/7.5/12-3C90 |




Dimensions in mm.

Fig.1 E40/27/12 core.




Dimensions in mm.

Fig.2 I40/7.5/12.

### Core halves for use in combination with an I core

$A_L$ measured in combination with an I core, clamping force for $A_L$ measurements 40 ± 20 N;

| GRADE | $A_L$ (nH) | $\mu_e$ | AIR GAP ($\mu$m) | TYPE NUMBER |
|---|---|---|---|---|
| 3C90 | 4110 ± 25 % | ≈ 1770 | ≈ 0 | E40/27/12-3C90 |

### Properties of core sets under power conditions

| GRADE | B (mT) at | CORE LOSS (W) at | |
|---|---|---|---|
| | H = 250 A/m; f = 25 kHz; T = 100 °C | f = 25 kHz; $\hat{B}$ = 200 mT; T = 100 °C | f = 100 kHz; $\hat{B}$ =100 mT; T = 100 °C |
| E40/27/12+I40/7.5/12-3C90 | ≥ 330 | ≤ 1.3 | ≤ 1.3 |