

# DATA SHEET

## **E38/8/25** Planar E cores

Product specification  
Supersedes data of November 1997  
File under Ferrite Ceramics, MA01

1999 Dec 23

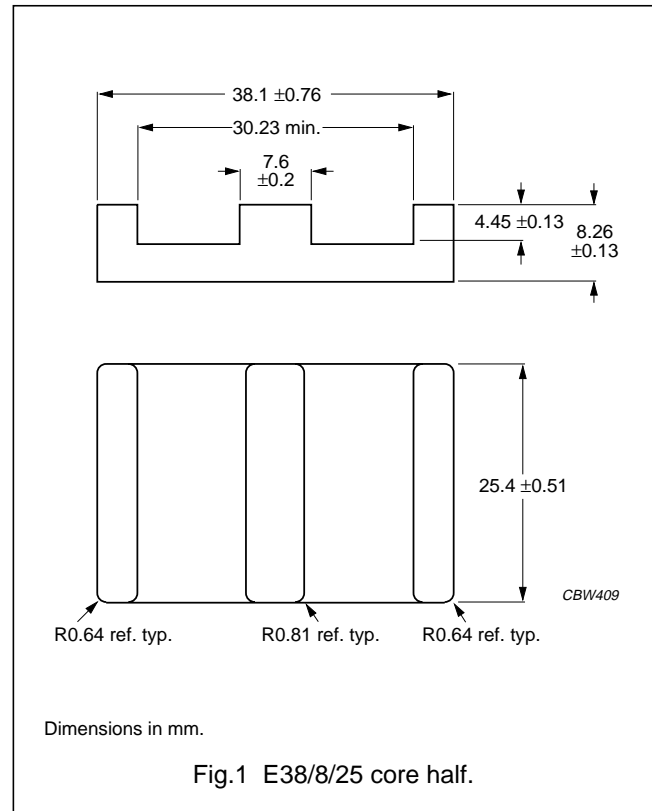
Planar E cores

E38/8/25

**CORES**

**Effective core parameters of a set of E cores**

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	0.272	mm <sup>-1</sup>
$V_e$	effective volume	10200	mm <sup>3</sup>
$l_e$	effective length	52.6	mm
$A_e$	effective area	194	mm <sup>2</sup>
m	mass of core half	≈25	g

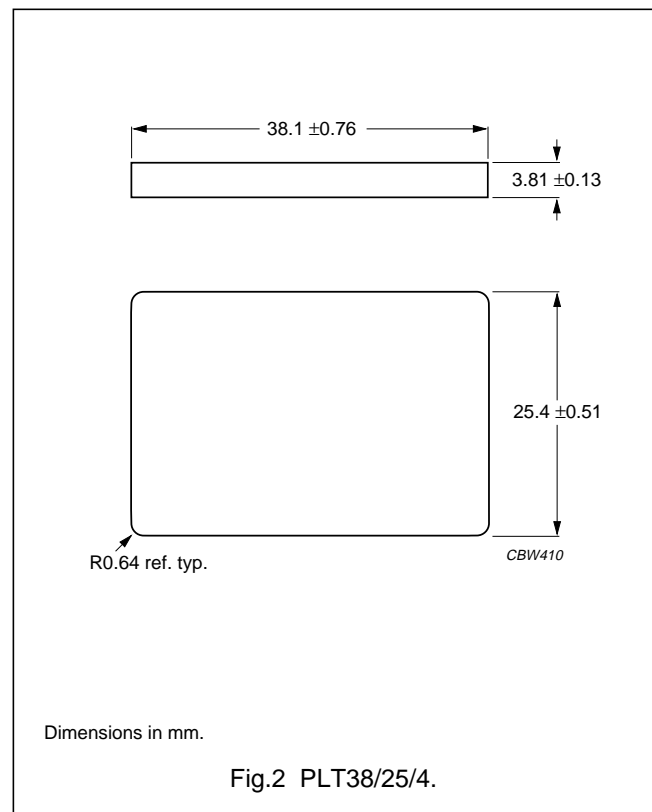


**Effective core parameters of an E/PLT combination**

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	0.226	mm <sup>-1</sup>
$V_e$	effective volume	8460	mm <sup>3</sup>
$l_e$	effective length	43.7	mm
$A_e$	effective area	194	mm <sup>2</sup>
m	mass of plate	≈18	g

**Ordering information for plates**

GRADE	TYPE NUMBER
3C90	PLT38/25/4-3C90
3F3	PLT38/25/4-3F3
3F4 <small>des</small>	PLT38/25/4-3F4



## Planar E cores

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**Core halves for use in combination with an E core**

$A_L$  measured in combination with a non-gapped core half, clamping force for  $A_L$  measurements,  $40 \pm 15$  N, unless stated otherwise.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3C90	$250 \pm 3\%^{(1)}$	$\approx 54$	$\approx 1100$	E38/8-3C90-E250-E
	$315 \pm 3\%^{(1)}$	$\approx 68$	$\approx 850$	E38/8-3C90-E315-E
	$400 \pm 3\%^{(1)}$	$\approx 86$	$\approx 650$	E38/8-3C90-E400-E
	$630 \pm 5\%$	$\approx 136$	$\approx 400$	E38/8-3C90-A630-E
	$1000 \pm 10\%$	$\approx 216$	$\approx 250$	E38/8-3C90-A1000-E
	$7940 \pm 25\%$	$\approx 1720$	$\approx 0$	E38/8/25-3C90
3F3	$250 \pm 3\%^{(1)}$	$\approx 54$	$\approx 1100$	E38/8-3F3-E250-E
	$315 \pm 3\%^{(1)}$	$\approx 68$	$\approx 850$	E38/8-3F3-E315-E
	$400 \pm 3\%^{(1)}$	$\approx 86$	$\approx 650$	E38/8-3F3-E400-E
	$630 \pm 5\%$	$\approx 136$	$\approx 400$	E38/8-3F3-A630-E
	$1000 \pm 10\%$	$\approx 216$	$\approx 250$	E38/8-3F3-A1000-E
	$7250 \pm 25\%$	$\approx 1570$	$\approx 0$	E38/8/25-3F3
3F4 <span style="border: 1px solid black; padding: 0 2px;">des</span>	$250 \pm 3\%^{(1)}$	$\approx 54$	$\approx 1100$	E38/8-3F4-E250-E
	$315 \pm 3\%^{(1)}$	$\approx 68$	$\approx 850$	E38/8-3F4-E315-E
	$400 \pm 3\%^{(1)}$	$\approx 86$	$\approx 650$	E38/8-3F4-E400-E
	$630 \pm 5\%$	$\approx 136$	$\approx 400$	E38/8-3F4-A630-E
	$1000 \pm 10\%$	$\approx 216$	$\approx 250$	E38/8-3F4-A1000-E
	$3880 \pm 25\%$	$\approx 840$	$\approx 0$	E38/8/25-3F4

**Note**

1. Measured in combination with an equal gapped core half, clamping force for  $A_L$  measurements,  $40 \pm 15$  N.

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

$A_L$  measured in combination with a plate (PLT), clamping force for  $A_L$  measurements,  $40 \pm 15$  N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3C90	$250 \pm 3\%$	$\approx 45$	$\approx 1100$	E38/8-3C90-A250-P
	$315 \pm 3\%$	$\approx 57$	$\approx 850$	E38/8-3C90-A315-P
	$400 \pm 3\%$	$\approx 72$	$\approx 650$	E38/8-3C90-A400-P
	$630 \pm 5\%$	$\approx 113$	$\approx 400$	E38/8-3C90-A630-P
	$1000 \pm 10\%$	$\approx 180$	$\approx 250$	E38/8-3C90-A1000-P
	$9290 \pm 25\%$	$\approx 1670$	$\approx 0$	E38/8/25-3C90
3F3	$250 \pm 3\%$	$\approx 45$	$\approx 1100$	E38/8-3F3-A250-P
	$315 \pm 3\%$	$\approx 57$	$\approx 850$	E38/8-3F3-A315-P
	$400 \pm 3\%$	$\approx 72$	$\approx 650$	E38/8-3F3-A400-P
	$630 \pm 5\%$	$\approx 113$	$\approx 400$	E38/8-3F3-A630-P
	$1000 \pm 10\%$	$\approx 180$	$\approx 250$	E38/8-3F3-A1000-P
	$8500 \pm 25\%$	$\approx 1520$	$\approx 0$	E38/8/25-3F3

## Planar E cores

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GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3F4 <small>des</small>	250 $\pm$ 3%	$\approx$ 45	$\approx$ 1100	E38/8-3F4-A250-P
	315 $\pm$ 3%	$\approx$ 57	$\approx$ 850	E38/8-3F4-A315-P
	400 $\pm$ 3%	$\approx$ 72	$\approx$ 650	E38/8-3F4-A400-P
	630 $\pm$ 5%	$\approx$ 113	$\approx$ 400	E38/8-3F4-A630-P
	1000 $\pm$ 10%	$\approx$ 180	$\approx$ 250	E38/8-3F4-A1000-P
	4600 $\pm$ 25%	$\approx$ 830	$\approx$ 0	E38/8/25-3F4

## Properties under power conditions

CORE COMBINATION	B (mT) at	CORE LOSS (W) at				
	H = 250 A/m; f = 10 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	f = 1 MHz; $\hat{B}$ = 30 mT; T = 100 °C	f = 3 MHz; $\hat{B}$ = 10 mT; T = 100 °C
E+E38-3C90	$\geq$ 320	$\leq$ 1.25	$\leq$ 1.25	–	–	–
E+PLT38-3C90	$\geq$ 320	$\leq$ 1.05	$\leq$ 1.05	–	–	–
E+E38-3F3	$\geq$ 320	–	$\leq$ 1.20	$\leq$ 2.00	–	–
E+PLT38-3F3	$\geq$ 320	–	$\leq$ 1.00	$\leq$ 1.65	–	–
E+E38-3F4	$\geq$ 250	–	–	–	$\leq$ 3.00	$\leq$ 3.50
E+PLT38-3F4	$\geq$ 250	–	–	–	$\leq$ 2.50	$\leq$ 2.90