DATA SHEET

E32/6/20
Planar E cores

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

1999 Dec 23

Philips Components

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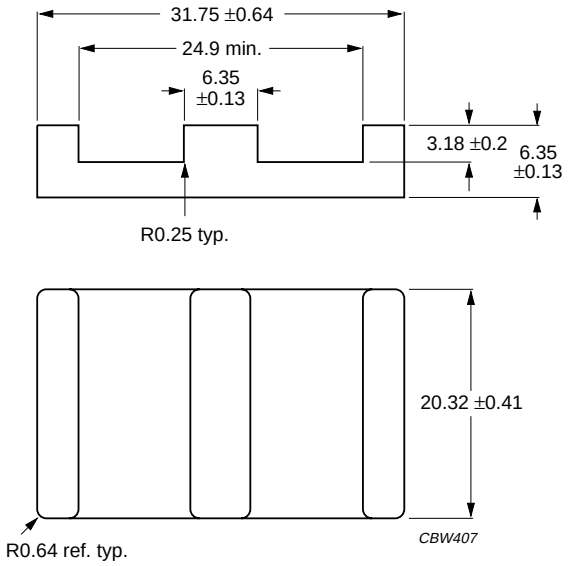
CORES

Effective core parameters of a set of E cores

SYMBOL	PARAMETER	VALUE	UNIT
Σ(l/A)	core factor (C1)	0.323	mm^{-1}
V_e	effective volume	5380	mm^3
l_e	effective length	41.7	mm
A_e	effective area	129	mm^2
m	mass of core half	≈13	g



Dimensions in mm.

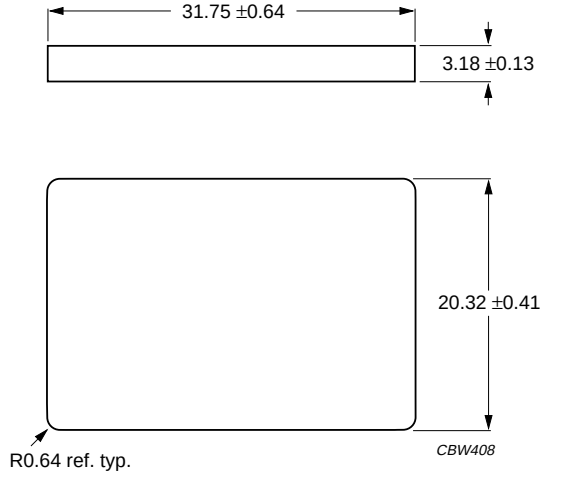
Fig.1 E32/6/20.

Effective core parameters of an E/PLT combination

SYMBOL	PARAMETER	VALUE	UNIT
Σ(l/A)	core factor (C1)	0.278	mm^{-1}
V_e	effective volume	4560	mm^3
l_e	effective length	35.9	mm
A_e	effective area	129	mm^2
m	mass of plate	≈10	g

Ordering information for plates

GRADE	TYPE NUMBER
3C90	PLT32/20/3-3C90
3C94 des	PLT32/20/3-3C94
3C96 prot	PLT32/20/3-3C96
3F3	PLT32/20/3-3F3
3F4 des	PLT32/20/3-3F4



Dimensions in mm.

Fig.2 PLT32/20/3.

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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, 30 ±10 N, unless stated otherwise.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	160 ±3%(1)	≈41	≈1200	E32/6-3C90-E160-E
	250 ±3%(1)	≈64	≈700	E32/6-3C90-E250-E
	315 ±3%	≈81	≈550	E32/6-3C90-A315-E
	400 ±5%	≈103	≈450	E32/6-3C90-A400-E
	630 ±8%	≈162	≈260	E32/6-3C90-A630-E
	6425 ±25%	≈1650	≈0	E32/6/20-3C90
3C94 des	160 ±3%(1)	≈41	≈1200	E32/6-3C94-E160-E
	250 ±3%(1)	≈64	≈700	E32/6-3C94-E250-E
	315 ±3%	≈81	≈550	E32/6-3C94-E315-E
	400 ±5%	≈103	≈450	E32/6-3C94-E400-E
	630 ±8%	≈162	≈260	E32/6-3C94-E630-E
	6425 ±25%	≈1650	≈0	E32/6/20-3C94
3C96 prot	6425 ±25%	≈1650	≈0	E32/6/20-3C96
3F3	160 ±3%(1)	≈41	≈1200	E32/6-3F3-E160-E
	250 ±3%(1)	≈64	≈700	E32/6-3F3-E250-E
	315 ±3%	≈81	≈550	E32/6-3F3-A315-E
	400 ±5%	≈103	≈450	E32/6-3F3-A400-E
	630 ±8%	≈162	≈260	E32/6-3F3-A630-E
	5900 ±25%	≈1520	≈0	E32/6/20-3F3
3F4 des	160 ±3%(1)	≈41	≈1200	E32/6-3F4-E160-E
	250 ±3%(1)	≈64	≈700	E32/6-3F4-E250-E
	315 ±3%	≈81	≈550	E32/6-3F4-A315-E
	400 ±5%	≈103	≈450	E32/6-3F4-A400-E
	630 ±8%	≈162	≈260	E32/6-3F4-A630-E
	3200 ±25%	≈820	≈0	E32/6/20-3F4

Note

1. Measured in combination with an equal gapped E core half, clamping force for A_L measurements, 30 ±10 N.

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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, 30 ±10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	160 ±3%	≈35	≈1200	E32/6-3C90-A160-P
	250 ±3%	≈55	≈700	E32/6-3C90-A250-P
	315 ±3%	≈69	≈550	E32/6-3C90-A315-P
	400 ±5%	≈87	≈450	E32/6-3C90-A400-P
	630 ±8%	≈138	≈260	E32/6-3C90-A630-P
	7350 ±25%	≈1610	≈0	E32/6/20-3C90
3C94 des	160 ±3%	≈35	≈1200	E32/6-3C94-A160-P
	250 ±3%	≈55	≈700	E32/6-3C94-A250-P
	315 ±3%	≈69	≈550	E32/6-3C94-A315-P
	400 ±5%	≈87	≈450	E32/6-3C94-A400-P
	630 ±8%	≈138	≈260	E32/6-3C94-A630-P
	7350 ±25%	≈1610	≈0	E32/6/20-3C94
3C96 prot	7350 ±25%	≈1610	≈0	E32/6/20-3C96
3F3	160 ±3%	≈35	≈1200	E32/6-3F3-A160-P
	250 ±3%	≈55	≈700	E32/6-3F3-A250-P
	315 ±3%	≈69	≈550	E32/6-3F3-A315-P
	400 ±5%	≈87	≈450	E32/6-3F3-A400-P
	630 ±8%	≈138	≈260	E32/6-3F3-A630-P
	6780 ±25%	≈1490	≈0	E32/6/20-3F3
3F4 des	160 ±3%	≈35	≈1200	E32/6-3F4-A160-P
	250 ±3%	≈55	≈700	E32/6-3F4-A250-P
	315 ±3%	≈69	≈550	E32/6-3F4-A315-P
	400 ±5%	≈87	≈450	E32/6-3F4-A400-P
	630 ±8%	≈138	≈260	E32/6-3F4-A630-P
	3700 ±25%	≈810	≈0	E32/6/20-3F4

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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 = 100 kHz; $\hat{B}$ = 200 mT; T = 100 °C
E+E32-3C90	≥320	≤0.65	≤0.65	–
E+PLT32-3C90	≥320	≤0.55	≤0.55	–
E+E32-3C94	≥320	–	≤0.48	≈2.30
E+PLT32-3C94	≥320	–	≤0.41	≈2.00
E+E32-3C96	≥320	–	≈0.35	≈1.60
E+PLT32-3C96	≥320	–	≈0.29	≈1.40
E+E32-3F3	≥320	–	≤0.59	–
E+PLT32-3F3	≥320	–	≤0.50	–
E+E32-3F4	≥250	–	–	–
E+PLT32-3F4	≥250	–	–	–

Properties under power conditions (continued)

CORE COMBINATION	B (mT) at	CORE LOSS (W) at		
	H = 250 A/m; f = 10 kHz; 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+E32-3C90	≥320	–	–	–
E+PLT32-3C90	≥320	–	–	–
E+E32-3C94	≥320	≈1.00	–	–
E+PLT32-3C94	≥320	≈0.87	–	–
E+E32-3C96	≥320	≈0.70	–	–
E+PLT32-3C96	≥320	≈0.60	–	–
E+E32-3F3	≥320	≤1.00	–	–
E+PLT32-3F3	≥320	≤0.85	–	–
E+E32-3F4	≥250	–	≤1.60	≤2.00
E+PLT32-3F4	≥250	–	≤1.36	≤1.70

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