DATA SHEET

E64/10/50
Planar E cores and accessories

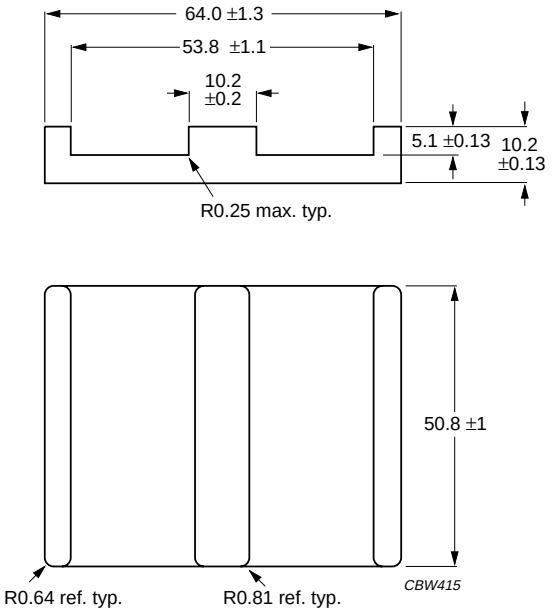
Supersedes data of February 2002 2004 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORES

Effective core parameters of a set of E cores

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.156	mm^{-1}
V_e	effective volume	40700	mm^3
l_e	effective length	79.9	mm
A_e	effective area	519	mm^2
A_{min}	minimum area	519	mm^2
m	mass of core half	≈ 100	g



Dimensions in mm.

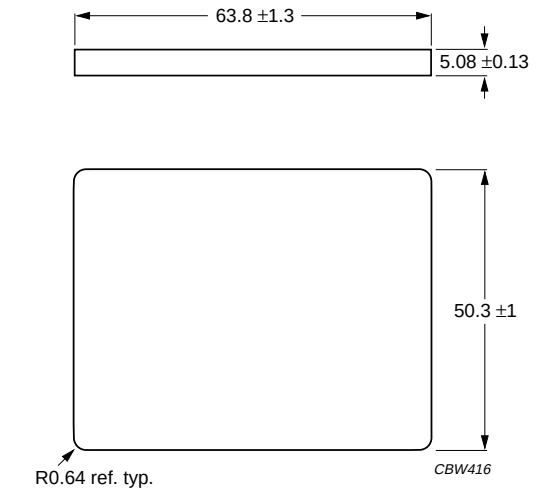
Fig.1 E64/10/50.

Effective core parameters of an E/PLT combination

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.136	mm^{-1}
V_e	effective volume	35500	mm^3
l_e	effective length	69.7	mm
A_e	effective area	519	mm^2
A_{min}	minimum area	519	mm^2
m	mass of plate	≈ 78	g

Ordering information for plates

GRADE	TYPE NUMBER
3C90	PLT64/50/5-3C90
3C92 des	PLT64/50/5-3C92
3C93 des	PLT64/50/5-3C93
3C94	PLT64/50/5-3C94
3F3	PLT64/50/5-3F3
3F4 des	PLT64/50/5-3F4



Dimensions in mm.

Fig.2 PLT 64/50/5.

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, 100 ±30 N, unless stated otherwise.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	630 ±3%(1)	≈ 78	≈ 1100	E64/10/50-3C90-E630-E
	1000 ±3%(1)	≈ 124	≈ 660	E64/10/50-3C90-E1000-E
	1600 ±5%	≈ 199	≈ 385	E64/10/50-3C90-A1600-E
	2500 ±10%	≈ 310	≈ 225	E64/10/50-3C90-A2500-E
	3150 ±10%	≈ 391	≈ 170	E64/10/50-3C90-A3150-E
	14640 ±25%	≈ 1820	≈ 0	E64/10/50-3C90
3C92 des	11200 ±25%	≈ 1390	≈ 0	E64/10/50-3C92
3C93 des	13300 ±25%	≈ 1650	≈ 0	E64/10/50-3C93
3C94	630 ±3%(1)	≈ 78	≈ 1100	E64/10/50-3C94-E630-E
	1000 ±3%(1)	≈ 124	≈ 660	E64/10/50-3C94-E1000-E
	1600 ±5%	≈ 199	≈ 385	E64/10/50-3C94-A1600-E
	2500 ±10%	≈ 310	≈ 225	E64/10/50-3C94-A2500-E
	3150 ±10%	≈ 391	≈ 170	E64/10/50-3C94-A3150-E
	14640 ±25%	≈ 1820	≈ 0	E64/10/50-3C94
3F3	630 ±3%(1)	≈ 78	≈ 1100	E64/10/50-3F3-E630-E
	1000 ±3%(1)	≈ 124	≈ 660	E64/10/50-3F3-E1000-E
	1600 ±5%	≈ 199	≈ 385	E64/10/50-3F3-A1600-E
	2500 ±10%	≈ 310	≈ 225	E64/10/50-3F3-A2500-E
	3150 ±10%	≈ 391	≈ 170	E64/10/50-3F3-A3150-E
	13300 ±25%	≈ 1650	≈ 0	E64/10/50-3F3
3F4 des	630 ±3%(1)	≈ 78	≈ 1100	E64/10/50-3F4-E630-E
	1000 ±3%(1)	≈ 124	≈ 660	E64/10/50-3F4-E1000-E
	1600 ±5%	≈ 199	≈ 385	E64/10/50-3F4-A1600-E
	2500 ±10%	≈ 310	≈ 225	E64/10/50-3F4-A2500-E
	3150 ±10%	≈ 391	≈ 170	E64/10/50-3F4-A3150-E
	6960 ±25%	≈ 860	≈ 0	E64/10/50-3F4

Note

1. Measured in combination with an equal-gapped core half, clamping force for A_L measurements, 100 ±30 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, 100 ±30 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	630 ±3%	≈ 78	≈ 1100	E64/10/50-3C90-A-630-P
	1000 ±3%	≈ 124	≈ 660	E64/10/50-3C90-A-1000-P
	1600 ±5%	≈ 199	≈ 385	E64/10/50-3C90-A-1600-P
	2500 ±10%	≈ 310	≈ 225	E64/10/50-3C90-A-2500-P
	3150 ±10%	≈ 391	≈ 170	E64/10/50-3C90-A-3150-P
	16540 ±25%	≈ 1790	≈ 0	E64/10/50-3C90
3C92 des	12700 ±25%	≈ 1370	≈ 0	E64/10/50-3C92
3C93 des	15050 ±25%	≈ 1630	≈ 0	E64/10/50-3C93
3C94	630 ±3%	≈ 78	≈ 1100	E64/10/50-3C94-A-630-P
	1000 ±3%	≈ 124	≈ 660	E64/10/50-3C94-A-1000-P
	1600 ±5%	≈ 199	≈ 385	E64/10/50-3C94-A-1600-P
	2500 ±10%	≈ 310	≈ 225	E64/10/50-3C94-A-2500-P
	3150 ±10%	≈ 391	≈ 170	E64/10/50-3C94-A-3150-P
	16540 ±25%	≈ 1790	≈ 0	E64/10/50-3C94
3F3	630 ±3%	≈ 78	≈ 1100	E64/10/50-3F3-A-630-P
	1000 ±3%	≈ 124	≈ 660	E64/10/50-3F3-A-1000-P
	1600 ±5%	≈ 199	≈ 385	E64/10/50-3F3-A-1600-P
	2500 ±10%	≈ 310	≈ 225	E64/10/50-3F3-A-2500-P
	3150 ±10%	≈ 391	≈ 170	E64/10/50-3F3-A-3150-P
	15050 ±25%	≈ 1630	≈ 0	E64/10/50-3F3
3F4 des	630 ±3%	≈ 78	≈ 1100	E64/10/50-3F4-A-630-P
	1000 ±3%	≈ 124	≈ 660	E64/10/50-3F4-A-1000-P
	1600 ±5%	≈ 199	≈ 385	E64/10/50-3F4-A-1600-P
	2500 ±10%	≈ 310	≈ 225	E64/10/50-3F4-A-2500-P
	3150 ±10%	≈ 391	≈ 170	E64/10/50-3F4-A-3150-P
	7920 ±25%	≈ 860	≈ 0	E64/10/50-3F4

Properties of core sets under power conditions

GRADE	B (mT) at	CORE LOSS (W) at		
	H = 250 A/m; f = 10 kHz; T = 100 °C	f = 100 kHz; $\hat{B}$ = 100 mT; T = 100 °C	f = 100 kHz; $\hat{B}$ = 200 mT; T = 100 °C	f = 400 kHz; $\hat{B}$ = 50 mT; T = 100 °C
E+E64-3C90	≥320	≤ 4.8	–	–
E+PLT64-3C90	≥320	≤ 4.2	–	–
E+E64-3C92	≥370	≤ 3.6	≤ 25	–
E+PLT64-3C92	≥370	≤ 3.2	≤ 23	–
E+E64-3C93	≥320	≤ 3.6(1)	≤ 25(1)	–
E+PLT64-3C93	≥320	≤ 3.2(1)	≤ 23(1)	–
E+E64-3C94	≥320	≤ 3.6	≤ 25	–
E+PLT64-3C94	≥320	≤ 3.2	≤ 23	–
E+E64-3F3	≥300	≤ 4.8	–	≤ 7.8
E+PLT64-3F3	≥300	≤ 4.2	–	≤ 6.8
E+E64-3F4	≥250	–	–	–
E+PLT64-3F4	≥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; f = 10 kHz; T = 100 °C	f = 500 kHz; $\hat{B}$ = 50 mT; T = 100 °C	f = 500 kHz; $\hat{B}$ = 100 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+E64-3C90	≥320	–	–	–	–
E+PLT64-3C90	≥320	–	–	–	–
E+E64-3C92	≥370	–	–	–	–
E+PLT64-3C92	≥370	–	–	–	–
E+E64-3C93	≥320	–	–	–	–
E+PLT64-3C93	≥320	–	–	–	–
E+E64-3C94	≥320	–	–	–	–
E+PLT64-3C94	≥320	–	–	–	–
E+E64-3F3	≥300	–	–	–	–
E+PLT64-3F3	≥300	–	–	–	–
E+E64-3F4	≥250	–	–	≤ 12	≤ 20
E+PLT64-3F4	≥250	–	–	≤ 10.5	≤ 17

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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Life support applications — These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Ferroxcube customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Ferroxcube for any damages resulting from such application.

PRODUCT STATUS DEFINITIONS

STATUS	INDICATION	DEFINITION
Prototype	prot	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	des	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	sup	These products are **not** recommended for new designs and may not be available through all of our sales channels. Customers are advised to check for availability.