DATA SHEET

EPX9
EPX cores and accessories

Supersedes data of September 2004 2008 Sep 01

FERROXCUBE
A YAGEO COMPANY

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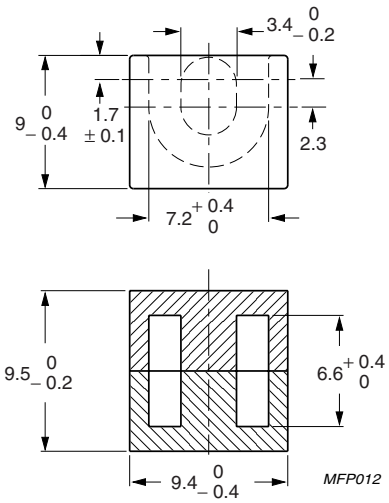
CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	1.15	mm^{-1}
V_e	effective volume	304	mm^3
l_e	effective length	18.7	mm
A_e	effective area	16.3	mm^2
A_{min}	minimum area	14.5	mm^2
m	mass of core set	≈ 2.5	g



Dimensions in mm.

Fig.1 EPX9 core set.

Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 30 ± 10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C94	1700 ± 25 %	≈ 1560	≈ 0	EPX9-3C94
3C96 des	1550 ± 25 %	≈ 1420	≈ 0	EPX9-3C96
3F35 des	1200 ± 25 %	≈ 1100	≈ 0	EPX9-3F35

Core sets for filter applications

Clamping force for A_L measurements, 30 ± 10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3B46 des	2300 ± 25 %	≈ 2110	≈ 0	EPX9-3B46

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Core sets of high permeability grades

Clamping force for A_L measurements, 30 ± 10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3E55 des	63 ± 3 %	≈ 58	≈ 440	EPX9-3E55-A63
	100 ± 3 %	≈ 92	≈ 250	EPX9-3E55-A100
	160 ± 3 %	≈ 146	≈ 150	EPX9-3E55-A160
	250 ± 5 %	≈ 229	≈ 90	EPX9-3E55-A250
	315 ± 5 %	≈ 288	≈ 70	EPX9-3E55-A315
	400 ± 8 %	≈ 366	≈ 50	EPX9-3E55-A400
	7300 + 40 / – 30 %	≈ 6680	≈ 0	EPX9-3E55
3E6	8200 + 40 / – 30 %	≈ 7500	≈ 0	EPX9-3E6

Properties 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 = 500 kHz; $\hat{B}$ = 50 mT; T = 100 °C	f = 500 kHz; $\hat{B}$ = 100 mT; T = 100 °C
3C94	≥ 320	≤ 0.023	≤ 0.15	–	–
3C96	≥ 340	≤ 0.018	≤ 0.12	≤ 0.1	–
3F35	≥ 300	–	–	≤ 0.035	≤ 0.3

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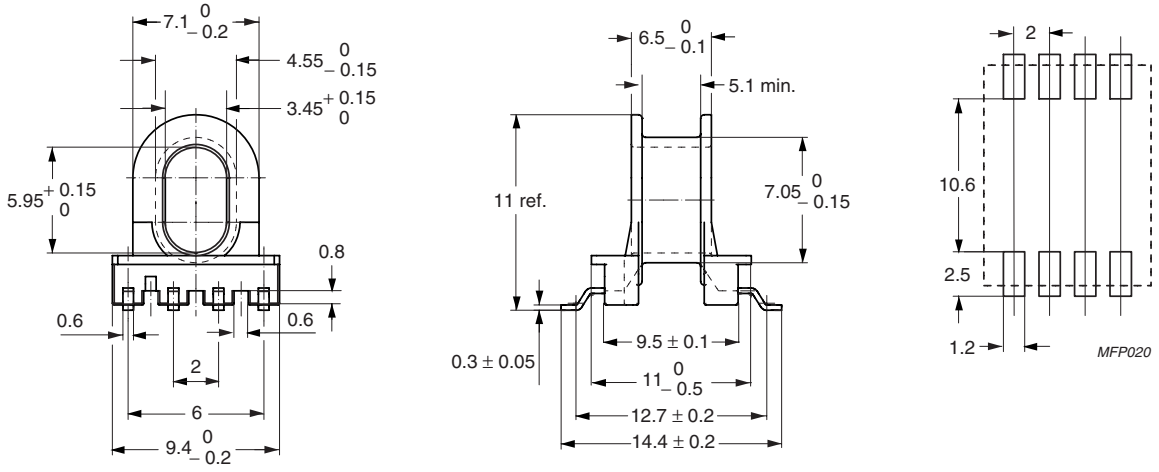
COIL FORMERS

General data

PARAMETER	SPECIFICATION
Coil former material	Sumikon PM9630 (PF), glass-reinforced, flame retardant in accordance with *"UL 94V-0";* UL file number E41429(M)
Pin material	copper-tin alloy (CuSn), nickel flash, gold plated
Maximum operating temperature	180 °C, *"IEC 60085"*, class H
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, 235 °C, 2 s



Dimensions in mm.

Fig.2 EPX9 coil former: 8-pads, 2 mm pad distance.

Winding data and area product for 8-pads EPX9 coil former

NUMBER OF SECTIONS	WINDING AREA (mm^2)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm^4)	TYPE NUMBER
1	5.99	5.4	23.3	97.6	CSHS-EPX9-1S-8P-T

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General data CSHS-EPX9-1S-8P

PARMETER	SPECIFICATION
Coil former material	Sumikon PM9630 (PF), glass-reinforced, flame retardant in accordance with *"UL 94V-0";* UL file number E41429(M)
Pin material	copper-tin alloy (CuSn), nickel flash, gold plated
Maximum operating temperature	180 °C, *"IEC 60085"*, class H
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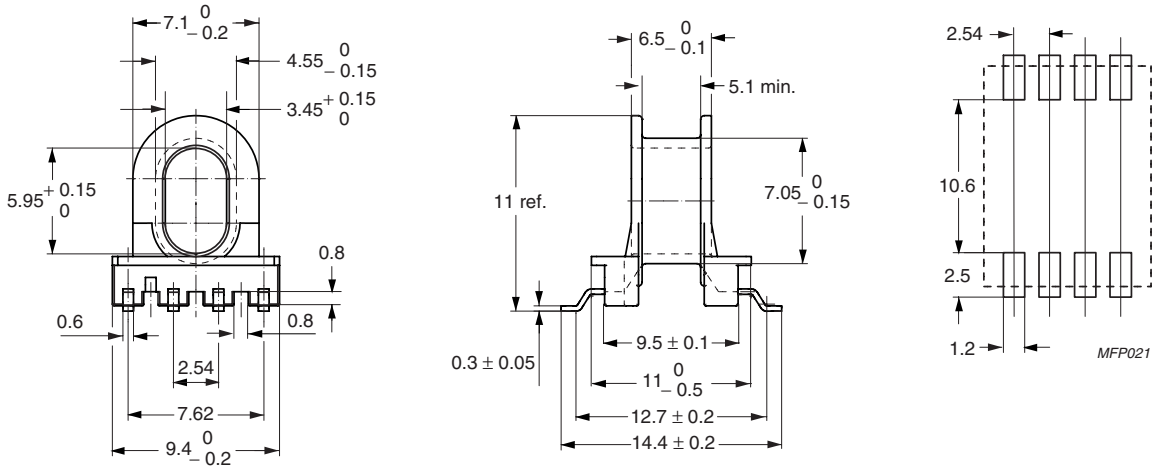

Dimensions in mm.

Fig.3 EPX9 coil former: 8-pads, 2.54 mm pad distance.

Winding data and area product for 8-pads EPX9 coil former

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm^2)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm^4)	TYPE NUMBER
1	5.99	5.4	23.3	97.6	CSHS-EPX9-1S-8P

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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.

DISCLAIMER

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.

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