

# DATA SHEET

**EPX9**

**EPX cores and accessories**

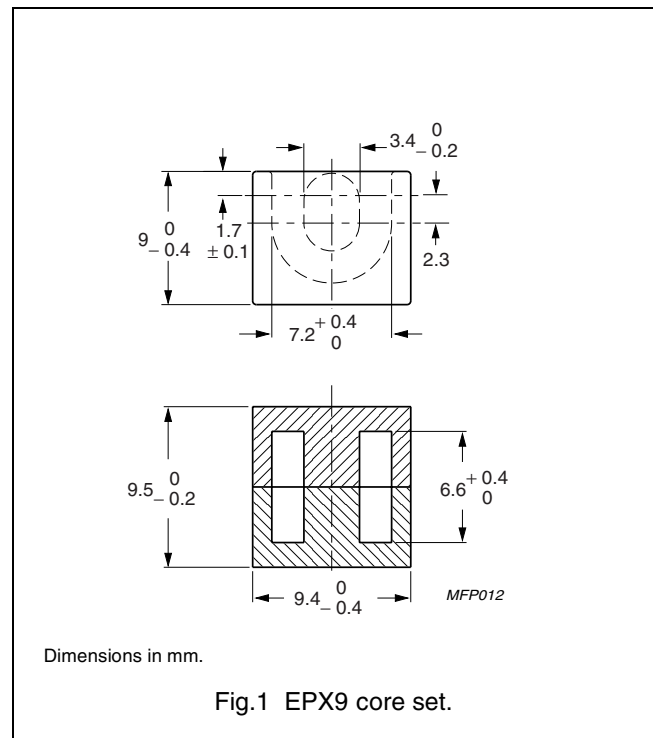
Supersedes data of September 2004

2008 Sep 01

**CORE SETS**

**Effective core parameters**

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



**Core sets for general purpose transformers and power applications**

Clamping force for  $A_L$  measurements, 30 ± 10 N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP (μm)	TYPE NUMBER
3C94	1700 ± 25 %	≈ 1560	≈ 0	EPX9-3C94
3C96 <small>des</small>	1550 ± 25 %	≈ 1420	≈ 0	EPX9-3C96
3F35 <small>des</small>	1200 ± 25 %	≈ 1100	≈ 0	EPX9-3F35

**Core sets for filter applications**

Clamping force for  $A_L$  measurements, 30 ± 10 N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP (μm)	TYPE NUMBER
3B46 <small>des</small>	2300 ± 25 %	≈ 2110	≈ 0	EPX9-3B46

## EPX cores and accessories

EPX9

**Core sets of high permeability grades**Clamping force for  $A_L$  measurements,  $30 \pm 10$  N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3E55 <small>des</small>	$63 \pm 3 \%$	$\approx 58$	$\approx 440$	EPX9-3E55-A63
	$100 \pm 3 \%$	$\approx 92$	$\approx 250$	EPX9-3E55-A100
	$160 \pm 3 \%$	$\approx 146$	$\approx 150$	EPX9-3E55-A160
	$250 \pm 5 \%$	$\approx 229$	$\approx 90$	EPX9-3E55-A250
	$315 \pm 5 \%$	$\approx 288$	$\approx 70$	EPX9-3E55-A315
	$400 \pm 8 \%$	$\approx 366$	$\approx 50$	EPX9-3E55-A400
	$7300 + 40 / - 30 \%$	$\approx 6680$	$\approx 0$	EPX9-3E55
3E6	$8200 + 40 / - 30 \%$	$\approx 7500$	$\approx 0$	EPX9-3E6

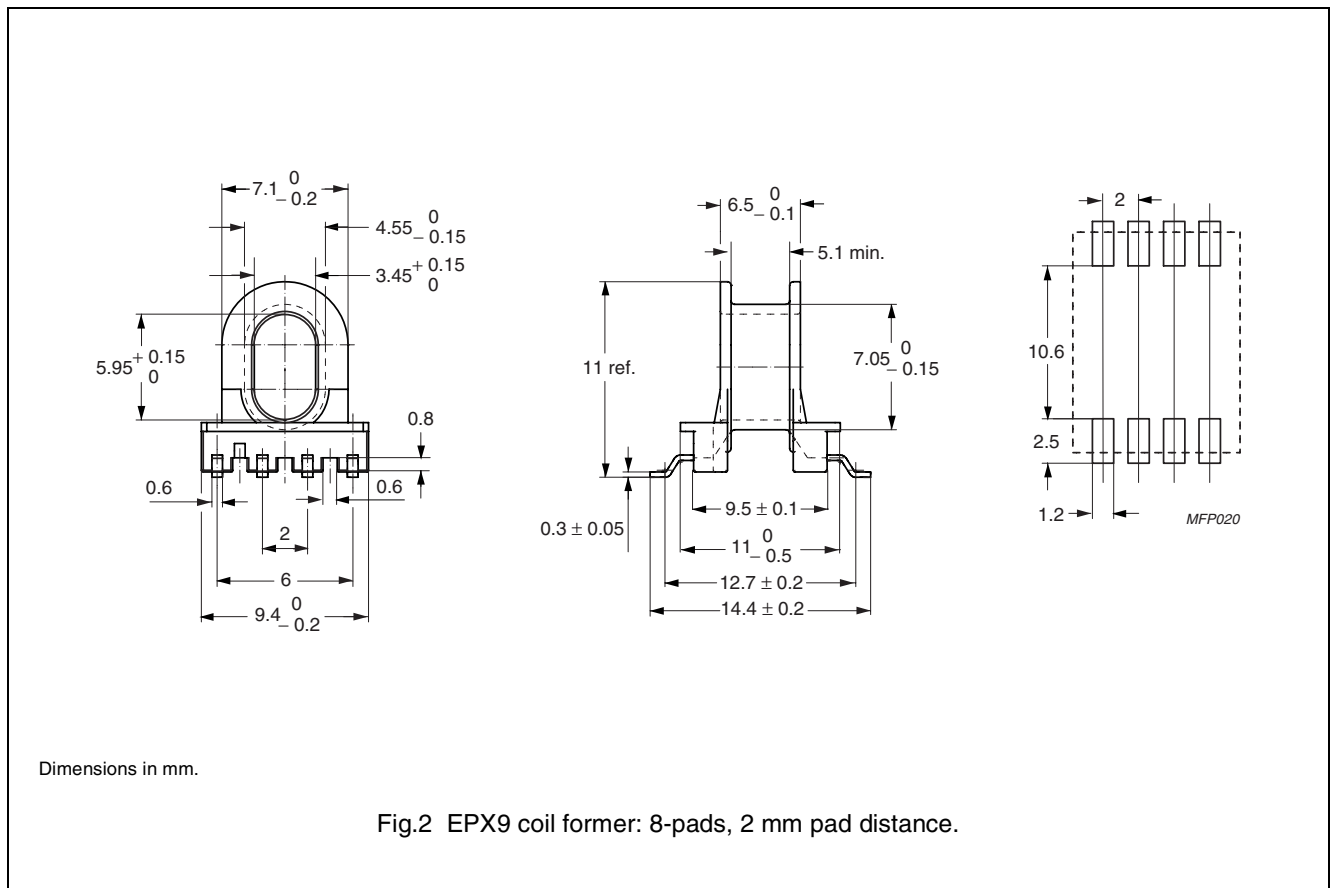
**Properties under power conditions**

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	$\geq 320$	$\leq 0.023$	$\leq 0.15$	–	–
3C96	$\geq 340$	$\leq 0.018$	$\leq 0.12$	$\leq 0.1$	–
3F35	$\geq 300$	–	–	$\leq 0.035$	$\leq 0.3$

**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

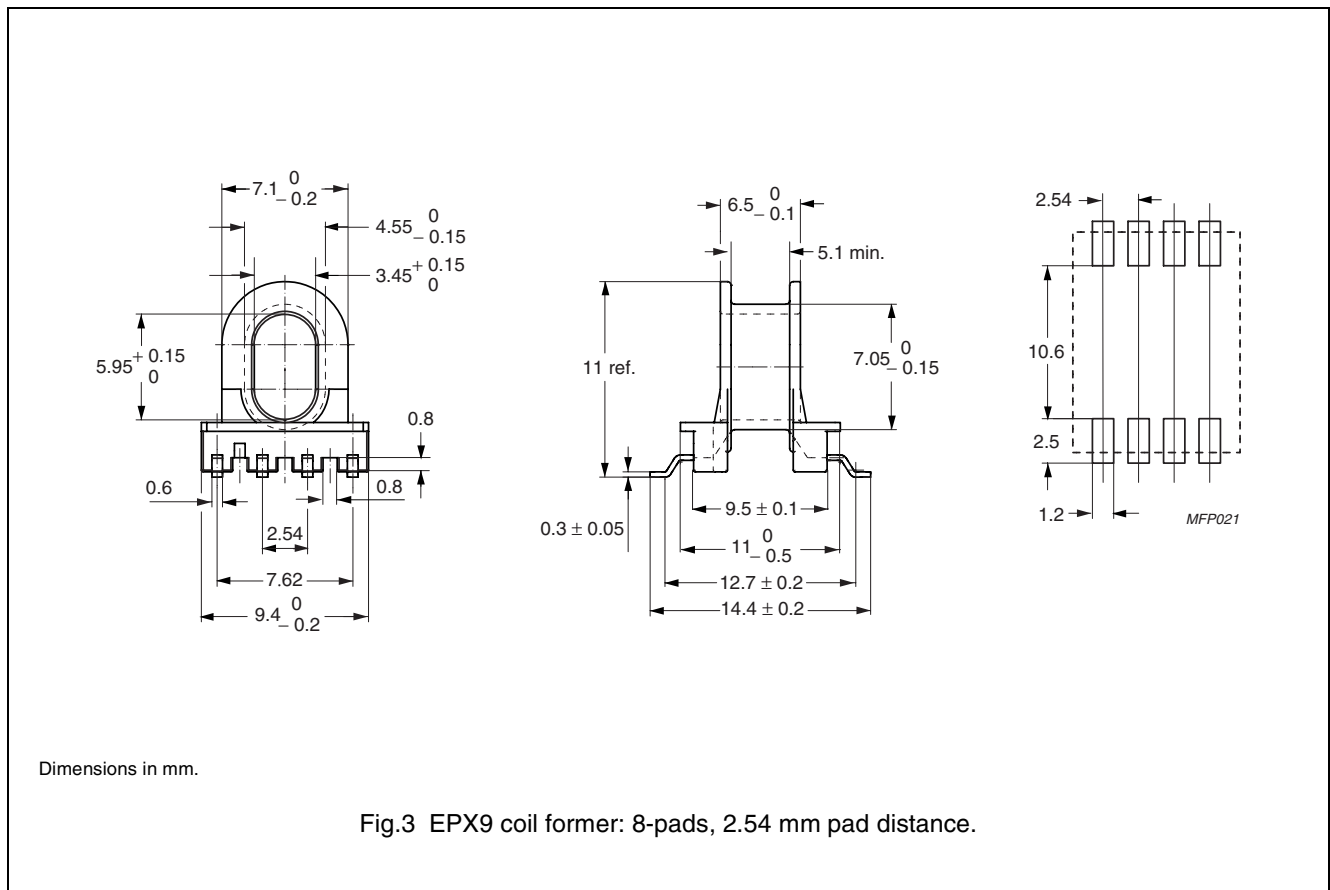


**Winding data and area product for 8-pads EPX9 coil former**

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

General data CSHS-EPX9-1S-8P

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



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

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




**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
<b>Prototype</b>		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.
<b>Design-in</b>		These products are recommended for new designs.
<b>Preferred</b>		These products are recommended for use in current designs and are available via our sales channels.
<b>Support</b>		These products are <b>not</b> recommended for new designs and may not be available through all of our sales channels. Customers are advised to check for availability.