

DATA SHEET

EP7

EP cores and accessories

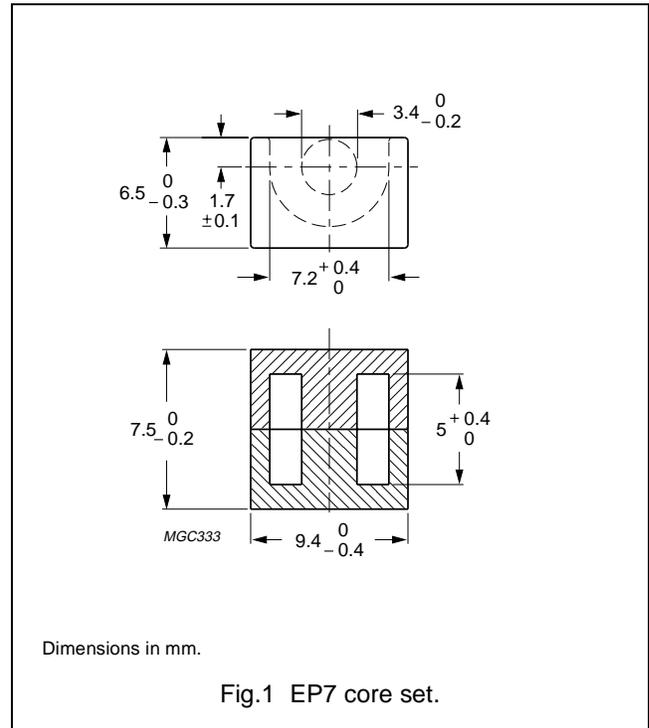
Supersedes data of February 2002

2004 Sep 01

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	1.45	mm ⁻¹
V_e	effective volume	165	mm ³
l_e	effective length	15.5	mm
A_e	effective area	10.7	mm ²
A_{min}	minimum area	8.55	mm ²
m	mass of core set	≈ 1.4	g



Core sets for filter applications

Clamping force for A_L measurements, 20 ±10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3D3	40 ±3%	≈ 48	≈ 450	EP7-3D3-A40
	63 ±3%	≈ 76	≈ 250	EP7-3D3-A63
	100 ±3%	≈ 121	≈ 130	EP7-3D3-A100
	530 ±25%	≈ 610	≈ 0	EP7-3D3
3H3	63 ±3%	≈ 73	≈ 270	EP7-3H3-A63
	100 ±3%	≈ 115	≈ 150	EP7-3H3-A100
	160 ±5%	≈ 184	≈ 90	EP7-3H3-A160
	1120 ±25%	≈ 1290	≈ 0	EP7-3H3
3B46 des	1500 ±25%	≈ 1730	≈ 0	EP7-3B46

Core sets for general purpose transformers and power applicationsClamping force for A_L measurements, 20 ± 10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C81	$25 \pm 3\%$	≈ 29	≈ 880	EP7-3C81-E25
	$40 \pm 3\%$	≈ 46	≈ 480	EP7-3C81-A40
	$63 \pm 3\%$	≈ 73	≈ 270	EP7-3C81-A63
	$100 \pm 3\%$	≈ 115	≈ 150	EP7-3C81-A100
	$160 \pm 5\%$	≈ 184	≈ 90	EP7-3C81-A160
	$1300 \pm 25\%$	≈ 1500	≈ 0	EP7-3C81
3C91 <small>des</small>	$1300 \pm 25\%$	≈ 1500	≈ 0	EP7-3C91
3C94	$25 \pm 3\%$	≈ 29	≈ 880	EP7-3C94-E25
	$40 \pm 3\%$	≈ 46	≈ 480	EP7-3C94-A40
	$63 \pm 3\%$	≈ 73	≈ 270	EP7-3C94-A63
	$100 \pm 3\%$	≈ 115	≈ 150	EP7-3C94-A100
	$160 \pm 5\%$	≈ 184	≈ 90	EP7-3C94-A160
	$1200 \pm 25\%$	≈ 1380	≈ 0	EP7-3C94
3C96 <small>des</small>	$1120 \pm 25\%$	≈ 1290	≈ 0	EP7-3C96
3F3	$25 \pm 3\%$	≈ 29	≈ 880	EP7-3F3-E25
	$40 \pm 3\%$	≈ 46	≈ 480	EP7-3F3-A40
	$63 \pm 3\%$	≈ 73	≈ 270	EP7-3F3-A63
	$100 \pm 3\%$	≈ 115	≈ 150	EP7-3F3-A100
	$160 \pm 5\%$	≈ 184	≈ 90	EP7-3F3-A160
	$1000 \pm 25\%$	≈ 1150	≈ 0	EP7-3F3
3F35 <small>prot</small>	$850 \pm 25\%$	≈ 980	≈ 0	EP7-3F35

Core sets of high permeability gradesClamping force for A_L measurements, 20 ± 10 N.

GRADE	A_L (nH)	μ_e	TYPE NUMBER
3E27	$3400 \pm 25\%$	≈ 3920	EP7-3E27
3E5	$5200 +40/-30\%$	≈ 5990	EP7-3E5
3E55 <small>des</small>	$5200 +40/-30\%$	≈ 5990	EP7-3E55
3E6	$5800 +40/-30\%$	≈ 6680	EP7-3E6

Properties of core sets under power conditions

GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 25 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	f = 400 kHz; \hat{B} = 50 mT; T = 100 °C
3C81	≥320	≤ 0.04	–	–	–
3C91	≥320	–	≤ 0.11 ⁽¹⁾	≤ 0.06 ⁽¹⁾	–
3C94	≥320	–	≤ 0.014	≤ 0.08	–
3C96	≥340	–	≤ 0.011	≤ 0.06	≤ 0.025
3F35	≥320	–	–	–	≤ 0.015
3F3	≥315	–	≤ 0.02	–	≤ 0.035
3F4	≥250	–	–	–	–

Properties of core sets under power conditions (continued)

GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 25 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
3C81	≥320	–	–	–	–
3C91	≥320	–	–	–	–
3C94	≥320	–	–	–	–
3C96	≥340	≤ 0.055	–	–	–
3F35	≥320	≤ 0.02	≤ 0.15	–	–
3F3	≥315	–	–	–	–
3F4	≥250	–	–	≤ 0.04	≤ 0.07

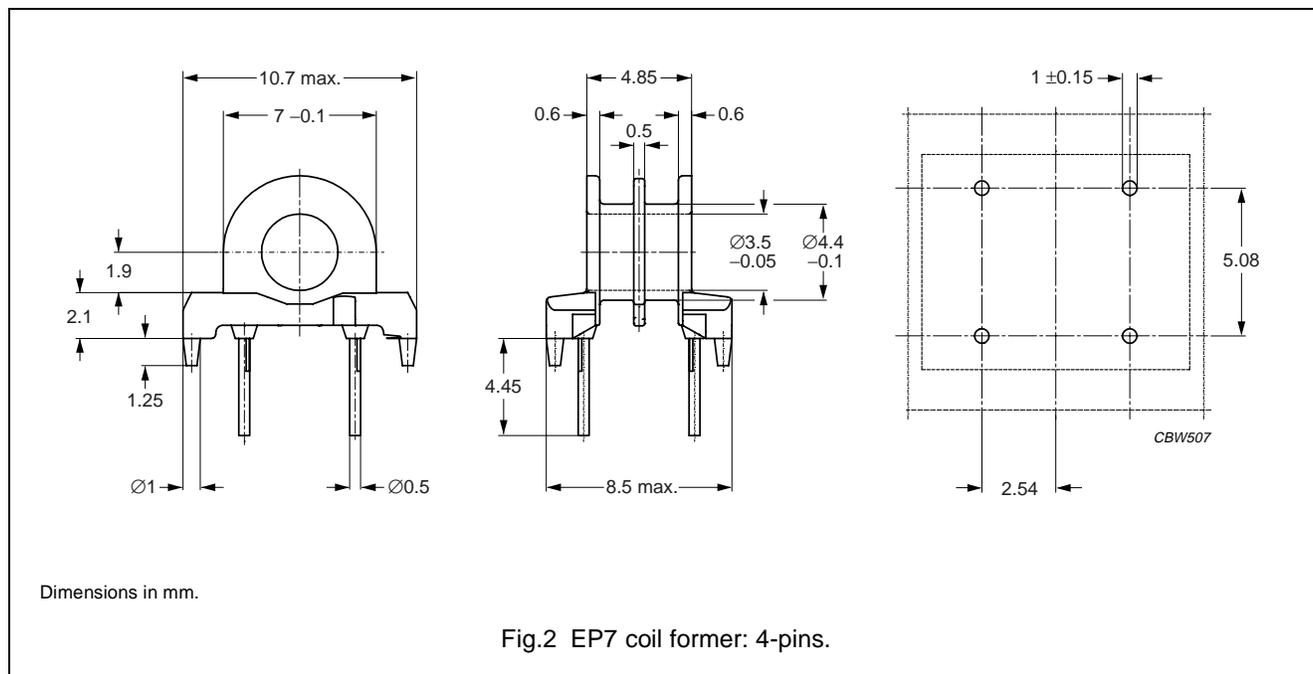
Note

1. Measured at 60 °C.

COIL FORMERS

General data

PARAMETER	SPECIFICATION
Coil former material	phenolformaldehyde (PF), glass-reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E41429(M)
Pin material	copper clad steel, tin-lead alloy (SnPb) plated, transition to lead-free (Sn) ongoing.
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

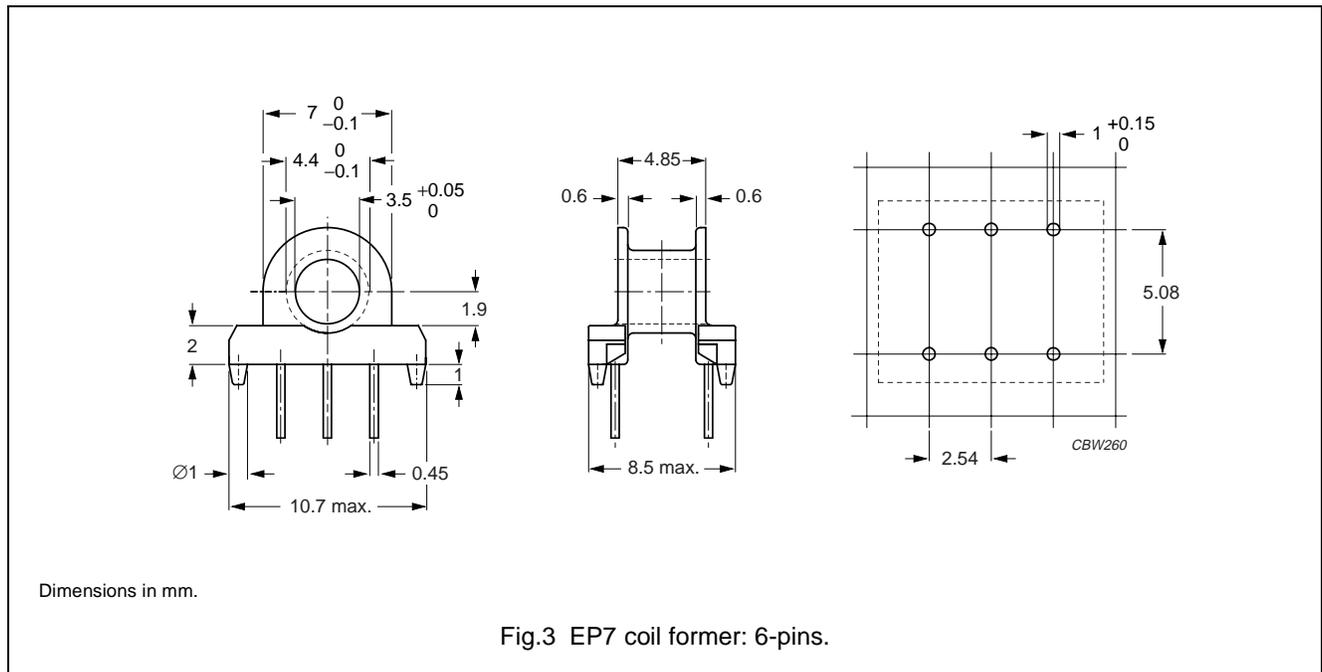


Winding data for 4-pins EP7 coil former

NUMBER OF SECTIONS	WINDING AREA (mm ²)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
2	2 × 1.75	2 × 1.45	17.9	CSH-EP7-2S-4P-TA
1	4.3	3.4	17.9	CSH-EP7-1S-4P-TA

General data CSH-EP7-1S-6P-B

PARAMETER	SPECIFICATION
Coil former material	phenolformaldehyde (PF), glass-reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E41429(M)
Pin material	copper clad steel, tin (Sn) 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

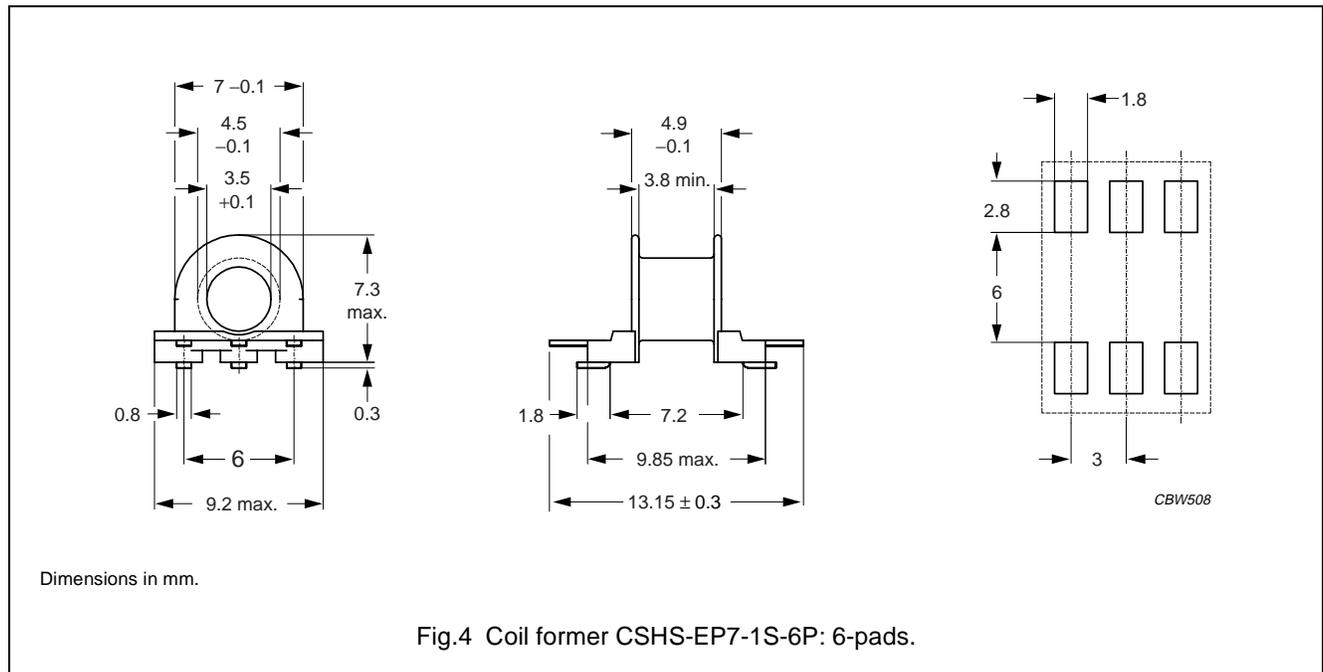


Winding data for 4 and 6-pins EP7 coil former

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm ²)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	4.3	3.4	17.7	CSH-EP7-1S-6P-B
1	4.3	3.4	17.7	CSH-EP7-1S-4P-B

General data for 6-pads EP7 SMD coil former

PARAMETER	SPECIFICATION
Coil former material	phenolformaldehyde (PF), glass reinforced, flame retardant in accordance with "UL 94V-0"; UL file number: E41429 (M)
Solder pad material	copper-clad steel , tin (Sn) plated
Maximum operating temperature	155 °C, "IEC 60085", class F
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



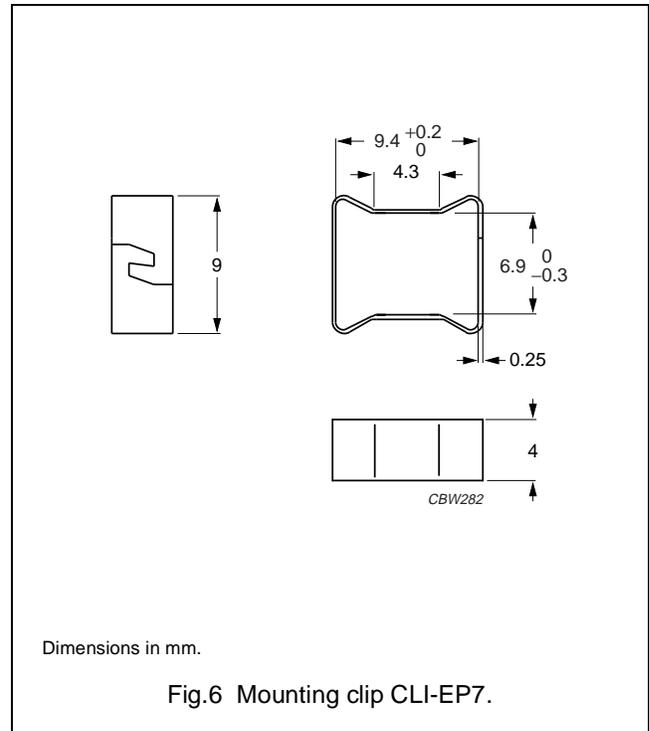
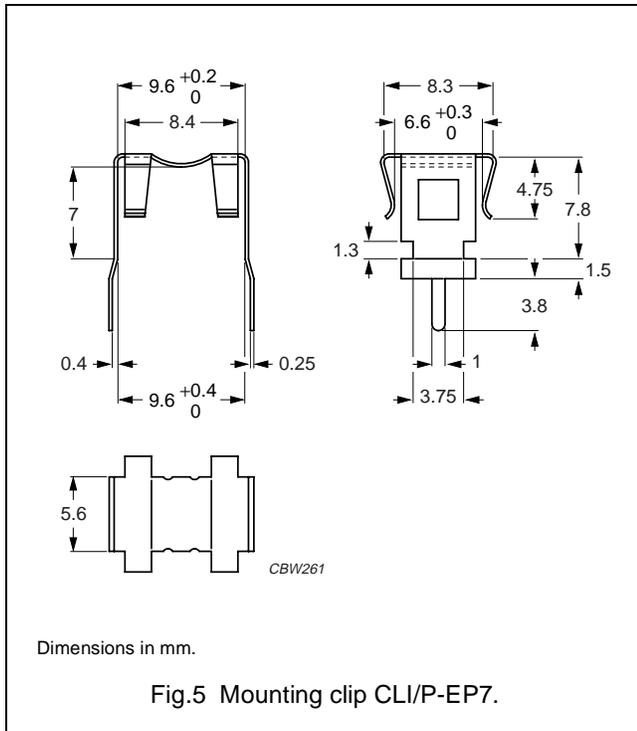
Winding data for 6-pads EP7 SMD coil former

NUMBER OF SECTIONS	WINDING AREA (mm ²)	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	4.7	3.9	17.9	CSHS-EP7-1S-6P-Z

MOUNTING PARTS

General data

ITEM	REMARKS	FIGURE	TYPE NUMBER
Mounting clip	stainless steel (CrNi); to be used in combination with CSH-EP7-1S-6P-B	5	CLI/P-EP7
Mounting clip	stainless steel (CrNi); clamping force ≈ 22 N	6	CLI-EP7



DATA SHEET STATUS DEFINITIONS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS
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