

# DATA SHEET

**P11/7**

**P cores and accessories**

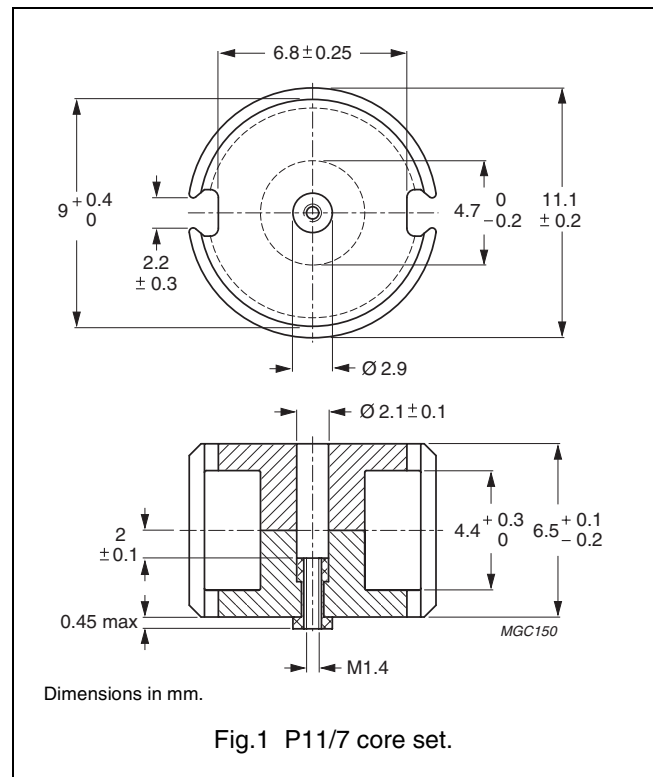
Supersedes data of September 2004

2008 Sep 01

**CORE SETS**

**Effective core parameters**

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.956	mm <sup>-1</sup>
$V_e$	effective volume	251	mm <sup>3</sup>
$l_e$	effective length	15.5	mm
$A_e$	effective area	16.2	mm <sup>2</sup>
$A_{min}$	minimum area	13.2	mm <sup>2</sup>
m	mass of set	≈ 1.8	g



**Core sets for filter applications**

Clamping force for  $A_L$  measurements,  $35 \pm 10$  N.

GRADE	$A_L$ (nH)	$\mu_e$	TOTAL AIR GAP ( $\mu$ m)	TYPE NUMBER (WITH NUT)	TYPE NUMBER (WITHOUT NUT)
3D3 <sup>sup</sup>	$16 \pm 3\%$	≈ 12	≈ 2210	P11/7-3D3-E16/N	P11/7-3D3-E16
	$25 \pm 3\%$	≈ 19	≈ 1280	P11/7-3D3-E25/N	P11/7-3D3-E25
	$40 \pm 3\%$	≈ 31	≈ 710	P11/7-3D3-E40/N	P11/7-3D3-E40
	$63 \pm 3\%$	≈ 48	≈ 400	P11/7-3D3-E63/N	P11/7-3D3-E63
	$100 \pm 3\%$	≈ 76	≈ 220	P11/7-3D3-A100/N	P11/7-3D3-A100
	$800 \pm 25\%$	≈ 610	≈ 0	—	P11/7-3D3
3H3 <sup>sup</sup>	$160 \pm 3\%$	≈ 122	≈ 140	P11/7-3H3-A160/N	P11/7-3H3-A160
	$250 \pm 3\%$	≈ 190	≈ 80	P11/7-3H3-A250/N	P11/7-3H3-A250
	$1650 \pm 25\%$	≈ 1260	≈ 0	—	P11/7-3H3

**Core sets for general purpose transformers and power applications**Clamping force for  $A_L$  measurements,  $35 \pm 10$  N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3C81	100 $\pm 3\%$	$\approx 76$	$\approx 240$	P11/7-3C81-A100
	160 $\pm 3\%$	$\approx 122$	$\approx 140$	P11/7-3C81-A160
	250 $\pm 3\%$	$\approx 190$	$\approx 85$	P11/7-3C81-A250
	2050 $\pm 25\%$	$\approx 1560$	$\approx 0$	P11/7-3C81
3C91 <small>des</small>	2050 $\pm 25\%$	$\approx 1560$	$\approx 0$	P11/7-3C91
3F3	100 $\pm 3\%$	$\approx 76$	$\approx 240$	P11/7-3F3-A100
	160 $\pm 3\%$	$\approx 122$	$\approx 140$	P11/7-3F3-A160
	250 $\pm 5\%$	$\approx 190$	$\approx 80$	P11/7-3F3-A250
	1650 $\pm 25\%$	$\approx 1260$	$\approx 0$	P11/7-3F3

**Core sets of high permeability grades**Clamping force for  $A_L$  measurements,  $35 \pm 10$  N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3E27	3400 $\pm 25\%$	$\approx 2600$	$\approx 0$	P11/7-3E27

**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; B̂ = 200 mT; T = 100 °C	f = 100 kHz; B̂ = 100 mT; T = 100 °C	f = 100 kHz; B̂ = 200 mT; T = 100 °C	f = 400 kHz; B̂ = 50 mT; T = 100 °C
3C81	$\geq 320$	$\leq 0.05$	–	–	–
3C91	$\geq 315$	–	$\leq 0.015^{(1)}$	$\leq 0.12^{(1)}$	–
3F3	$\geq 315$	–	$\leq 0.03$	–	$\leq 0.05$

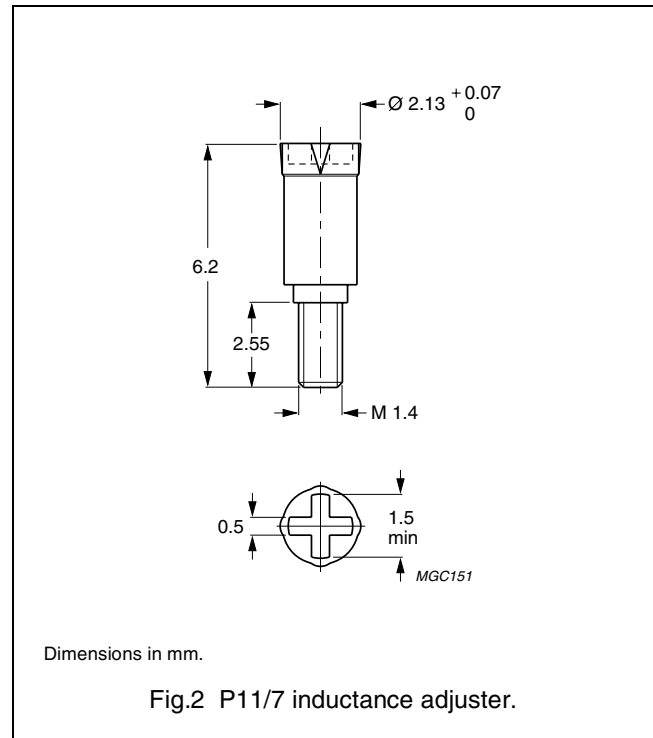
**Note**

1. Measured at 60 °C.

**INDUCTANCE ADJUSTERS**

**General data**

PARAMETER	SPECIFICATION
Material of head and thread	polypropylene (PP), glass fibre reinforced
Maximum operating temperature	125 °C



**Inductance adjuster selection chart <sup>sup up</sup> (applies to all types)**

GRADE	A <sub>L</sub> (nH)	TYPES FOR LOW ADJUSTMENT	ΔL/L <sup>(1)</sup>	TYPES FOR MEDIUM ADJUSTMENT	ΔL/L <sup>(1)</sup>	TYPES FOR HIGH ADJUSTMENT	ΔL/L <sup>(1)</sup>
3H3	100	–	–	ADJ-P9/P11-YELLOW	13	ADJ-P9/P11-BROWN	24
	160	ADJ-P9/P11-YELLOW	8	ADJ-P9/P11-BROWN	15	ADJ-P9/P11-GREY	22
	250	ADJ-P9/P11-BROWN	9	ADJ-P9/P11-GREY	14	–	–
3D3	16	–	–	ADJ-P9/P11-YELLOW	19	–	–
	25	–	–	–	–	ADJ-P9/P11-YELLOW	30
	40	–	–	–	–	ADJ-P9/P11-YELLOW	24
	63	–	–	ADJ-P9/P11-YELLOW	18	–	–
	100	–	–	ADJ-P9/P11-YELLOW	11	–	–

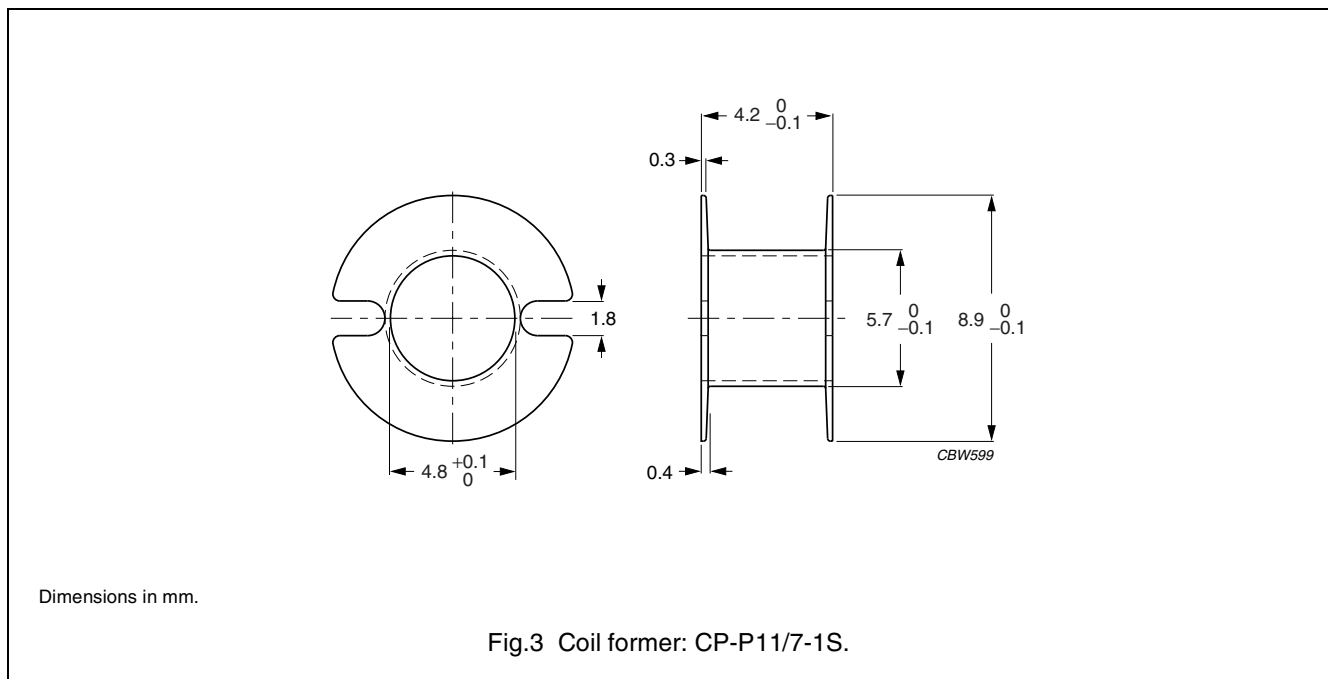
**Note**

1. Maximum adjustment range.

**COIL FORMERS**

**General data CP-P11/7-1S coil former**

PARAMETER	SPECIFICATION
Coil former material	polybutyleneterephthalate (PBT), glass reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E45329 (R)
Maximum operating temperature	155 °C, "IEC 60085", class F

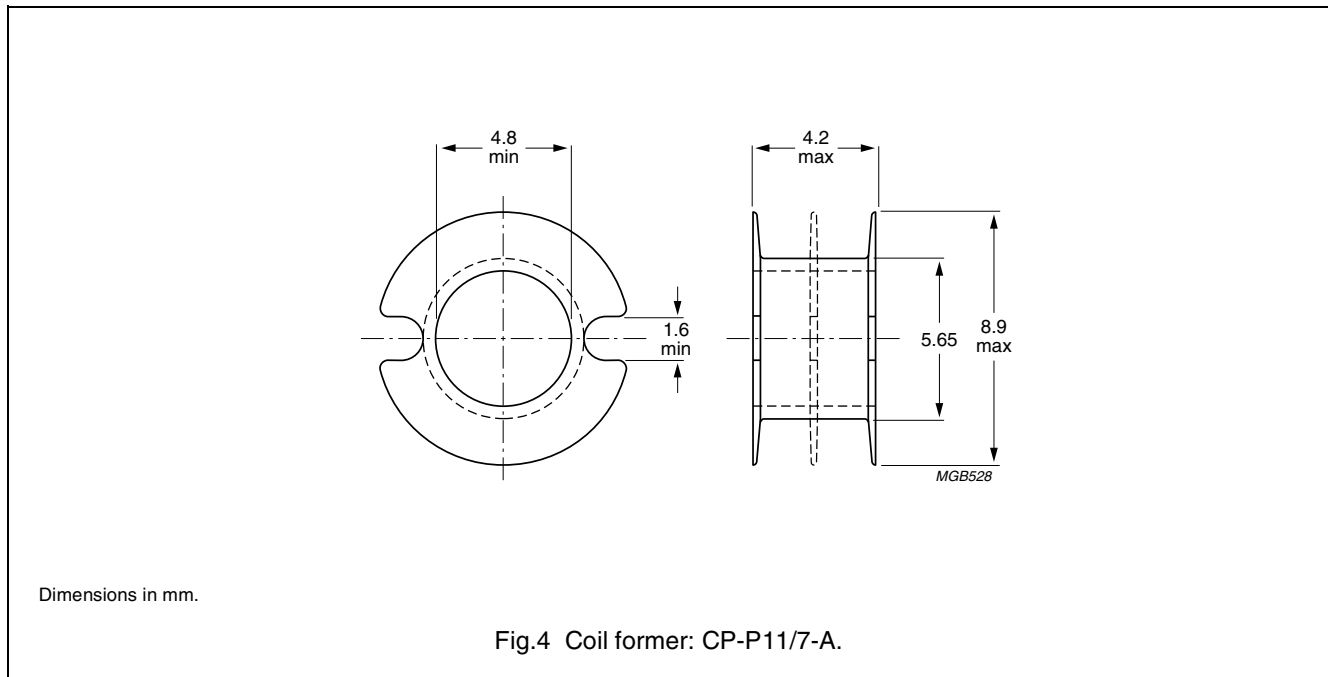


**Winding data and area product for CP-P11/7-1S coil former**

NUMBER OF SECTIONS	WINDING AREA (mm <sup>2</sup> )	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm <sup>4</sup> )	TYPE NUMBER
1	4.8	3.1	22.6	77.8	CP-P11/7-1S

**General data for CP-P11/7-A coil former**

PARAMETER	SPECIFICATION
Coil former material	acetal (POM), glass reinforced, flame retardant in accordance with "UL 94-HB"; UL file number E66288(R)
Maximum operating temperature	105 °C



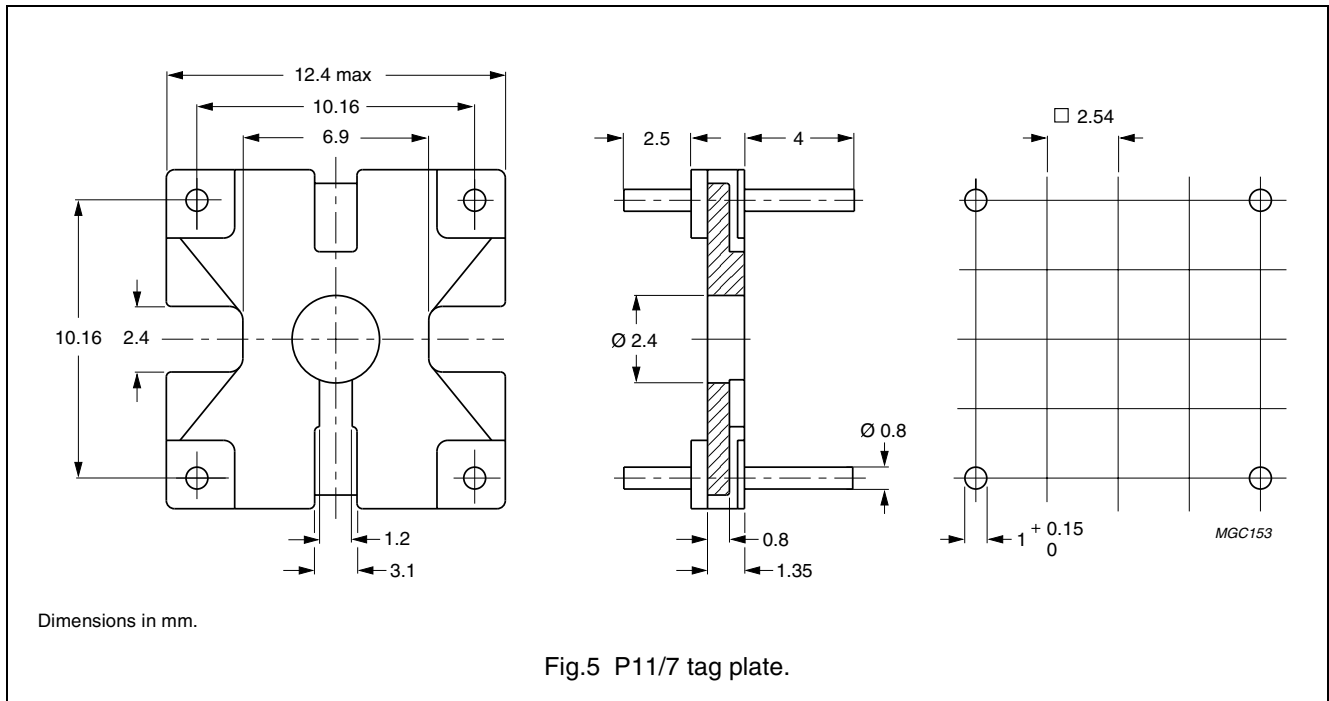
**Winding data and area product for CP-P11/7-A coil former**

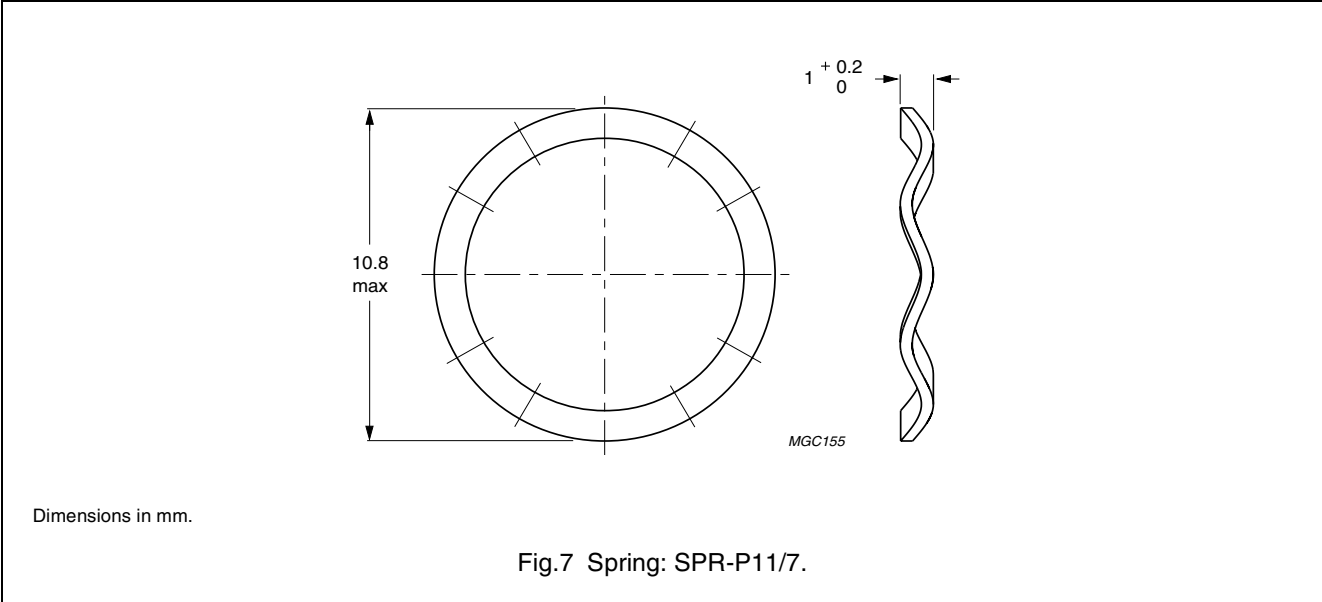
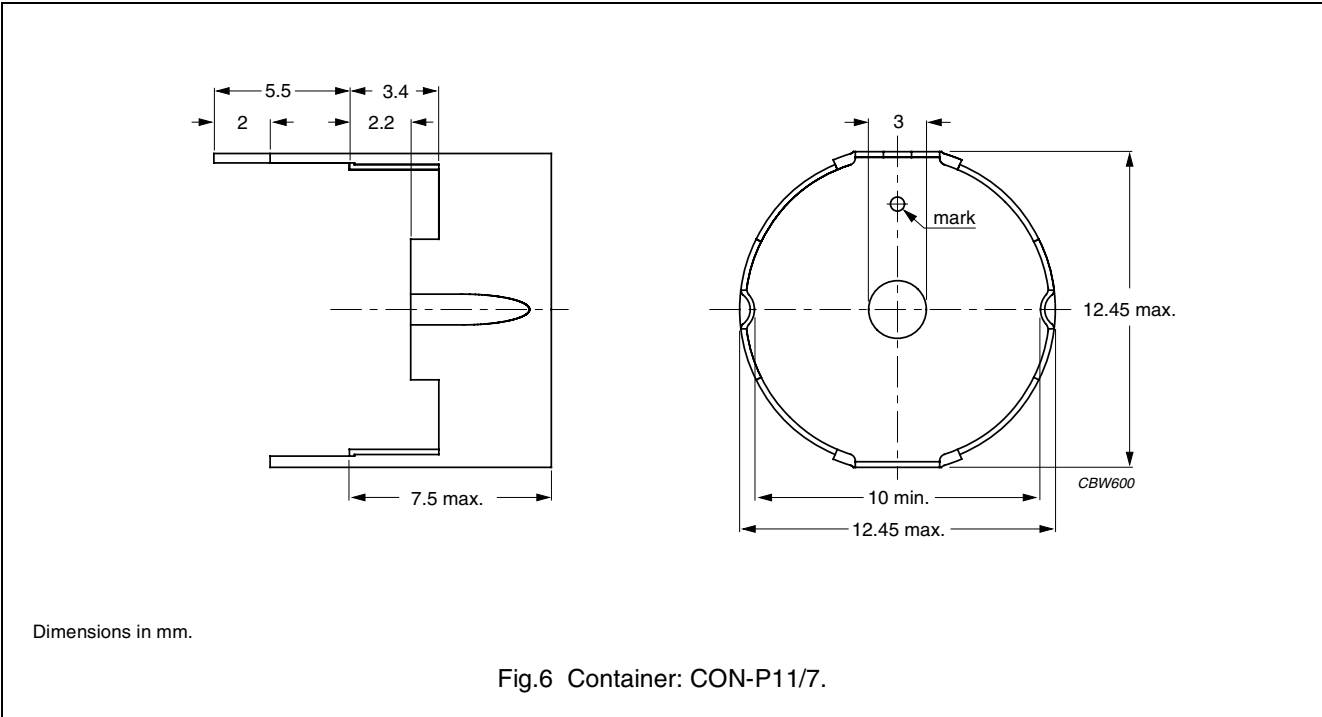
NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm <sup>2</sup> )	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm <sup>4</sup> )	TYPE NUMBER
1	4.77	3.42	22.7	77.3	CP-P11/7-1S-A
2	2 x 2.00	2 x 1.52	22.7	2 x 32.4	CP-P11/7-2S-A
3	3 x 1.16	3 x 0.91	22.7	3 x 18.8	CP-P11/7-3S-A

**MOUNTING PARTS**

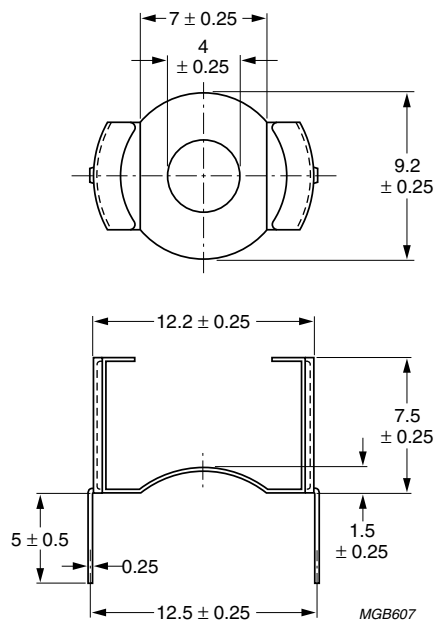
**General data**

ITEM	REMARKS	FIGURE	TYPE NUMBER
Tag plate	material: phenolformaldehyde (PF), glass reinforced	5	TGP-P11/7-C
	flame retardant: in accordance with "UL 94V-0"; file number E41429		
	maximum operating temperature: 180 °C, "IEC 60085", class H		
	pins : copper-tin alloy (CuSn), tin (Sn) plated		
	resistance to soldering heat in accordance with "IEC 60068-2-20", Part 2, Test Tb, method 1B: 350 °C, 3.5 s		
	solderability in accordance with "IEC 60068-2-20", Part 2, Test Ta, method 1: 235 °C, 2 s		
Container	copper-zinc alloy (CuZn), tin (Sn) plated	6	CON-P11/7
	earth pins: presoldered		
Spring	CrNi-steel	7	SPR-P11/7
	spring force: ≈35 N when mounted		
Clamp	spring steel, tin-plated	7	CLM/TP-P11/7









Dimensions in mm.

Fig.7 Clamp: CLM/TP-P11/7.




**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.