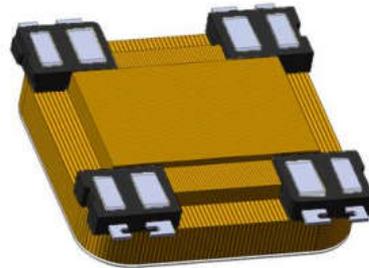
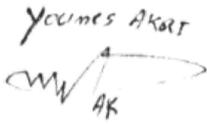


	Customer	Customer (P/N)	Description		
	Premo (P/N) 3DC11LP-0720J	Prototype Ref.	Date 19/05/2020	Edition 15	Page 1/10



3DC11LP XYZ 7.2mH ± 5% @125KHz

Made by: Ben Messaoud Salmane	Checked by: Younes Akri	Approved by:
Date: 19/05/2020	Date: 23/05/2020	Date: 03/01/2022
Signature: 	Signature: 	Signature: 

	Customer	Customer (P/N)	Description		
	Premo (P/N) 3DC11LP-0720J	Prototype Ref.	Date 19/05/2020	Edition 15	Page 2/10

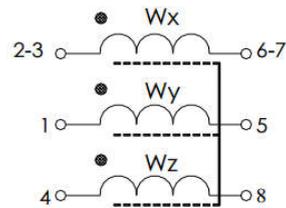
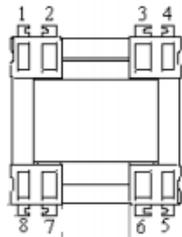
1. Features

- SMD Passive inductive transponder
- 3D Magnetic field sensitive
- Working frequency: 125 kHz
- AEC-Q200 rev.D compliance
- Operating temperature: -40 °C to +85 °C
- Storage temperature: -40 °C to +85 °C

2. Applications

Inductive transponder

3. Electrical diagram



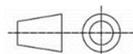
All dimensions in mm

Coplanarity requirement: 0.15mm MAX.

Dimensions: mm

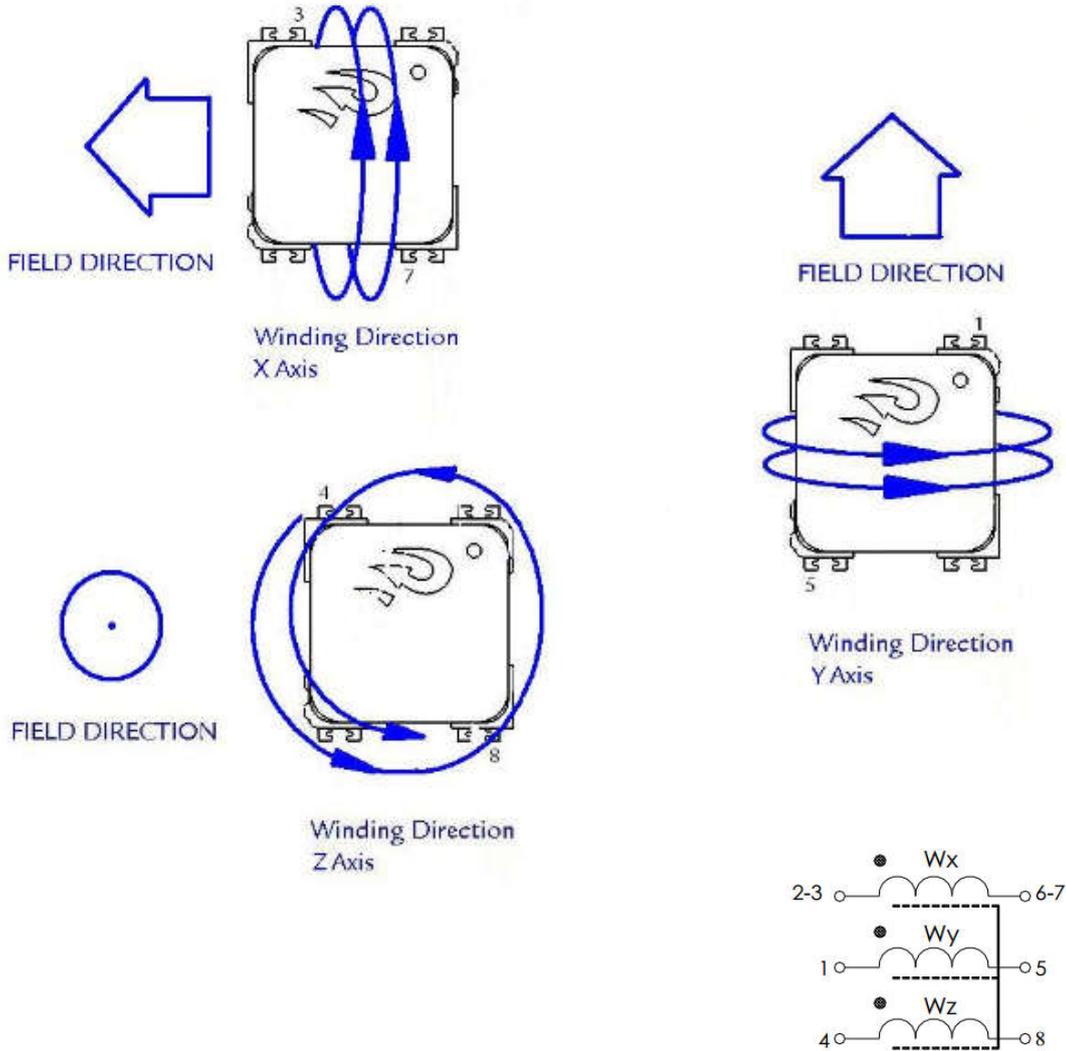
(*) Critical characteristics

Contact PREMO for more detailed information.



	Customer	Customer (P/N)	Description		
	Premo (P/N) 3DC11LP-0720J	Prototype Ref.	Date 19/05/2020	Edition 15	Page 3/10

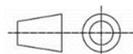
4. DIRECTION OF THE WINDINGS AND FIELDS (critical characteristic)



Dimensions: mm

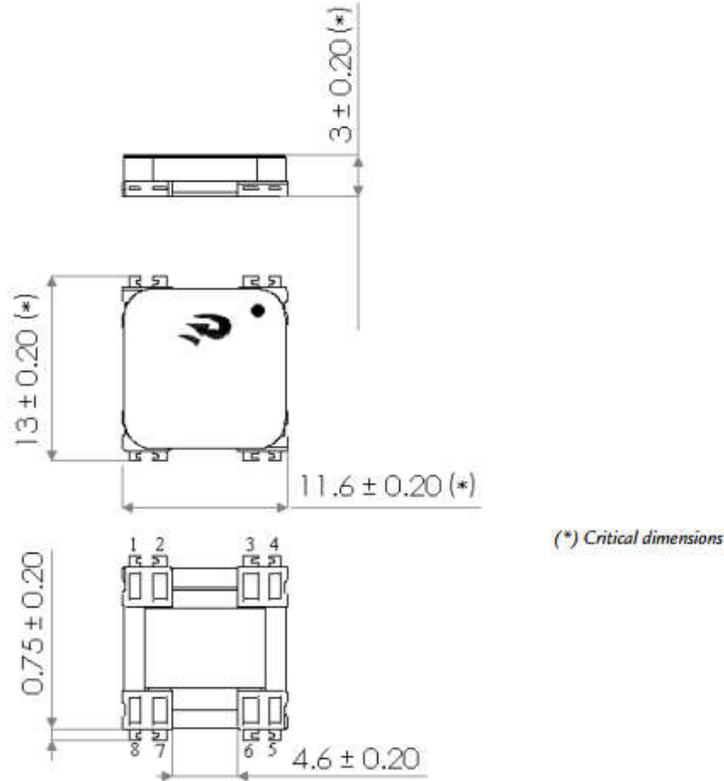
(*) Critical characteristics

Contact PREMO for more detailed information.

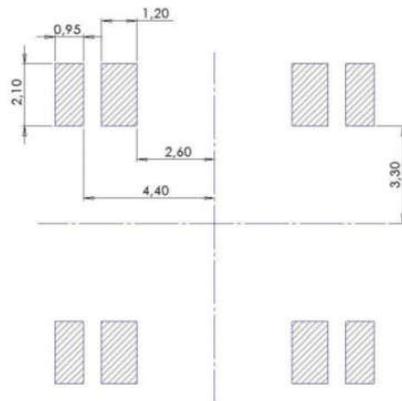


	Customer	Customer (P/N)	Description		
	Premo (P/N) 3DC11LP-0720J	Prototype Ref.	Date 19/05/2020	Edition 15	Page 4/10

5. Mechanical dimensions



5- Recommended Pad Layout



All dimensions in mm

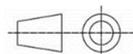
Notes:

General tolerances according ISO 2768 — 1 m if not define

Dimensions: mm

(*) Critical characteristics

Contact PREMO for more detailed information.



	Customer	Customer (P/N)	Description		
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6. Electrical parameters

	SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS	REMARKS
X	Lx	Winding X inductance	125 kHz, 1 Vac, 25 °C	6.84	7.20	7.56	mH	(*)
	Qx	Winding X Quality factor	125 kHz, 1 Vac, 25 °C	14.5			*	(*)
	Nx	Winding X number of turns	-	-	502 _{typ}	-	turns	
	Rdcx	Winding X DC resistance	25 °C	135	150	155	Ohms	
	SRFx	Winding X Self Resonant Frequency	1 Vac, 25 °C	250			Khz	
	Sx	Winding X Sensitivity	125 kHz, 10Vppsin	81	90	99	mV/A/m	
Y	Ly	Winding Y inductance	125 kHz, 1 Vac, 25 °C	6.84	7.20	7.56	mH	(*)
	Qy	Winding Y Quality factor	125 kHz, 1 Vac, 25 °C	14.5			*	(*)
	Ny	Winding Y number of turns	-		520 _{typ}		turns	
	Rdcy	Winding Y DC resistance	25 °C	144	160	176	Ohms	
	SRFy	Winding Y Self Resonant Frequency	1 Vac, 25 °C	250			Khz	
	Sy	Winding X Sensitivity	125 kHz, 10Vppsin	81	90	99	mV/A/m	
Z	Lz	Winding Z inductance	125 kHz, 1 Vac, 25 °C	6.84	7.20	7.56	mH	(*)
	Qz	Winding Z Quality factor	125 kHz, 1 Vac, 25 °C	18			*	(*)
	Nz	Winding Z number of turns	-		564 _{typ}		turns	
	Rdcz	Winding Z DC resistance	25 °C	181	190	199	Ohms	
	SRFz	Winding Z Self Resonant Frequency	1 Vac, 25 °C	500			Khz	
	Sz	Winding Z Sensitivity	125 kHz, 10Vppsin	72	80	88	mV/A/m	

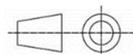
Notes:

Measures at 25 ° C +/- 2 °C

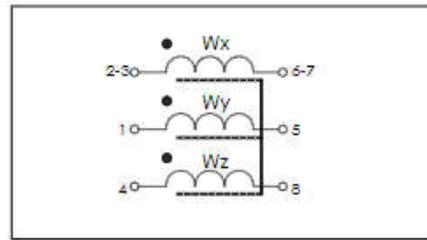
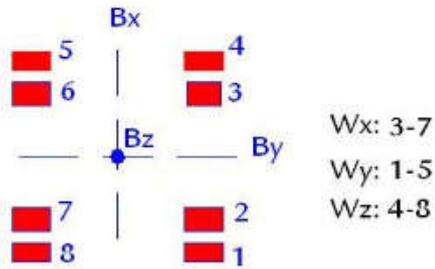
Dimensions: mm

(*) Critical characteristics

Contact PREMO for more detailed information.



	Customer	Customer (P/N)	Description		
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Inductance, Q factor, R_{dc} and SRF measured with an LCR meter Wayne Kerr PMA 3260A
Sensitivity measured with Helmholtz coils 5 turns, 166 mm ϕ (contact Premo for measurements specifications)

If the three coils from this component are going to be connected to a common GND; pins 1, 7 and 8 should be the chosen ones as common connection in order to keep the electromagnetic characteristics of the part.

7. Functional performances

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Twork	Operating temperature	$I < I_{max}$	-40	-	+85	$^{\circ}C$
Tstorage	Storage temperature	-	-40	-	85	$^{\circ}C$
I _{max}	Max Current per winding	25 $^{\circ}C$	-	-	45	mA

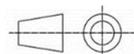
8. Raw materials

CORE		NiZn Ferrite mi: 2000
WIRES	Winding X	0.04 mm P180 G1, norms IEC 317-20, MW79
	Winding Y	0.04 mm P180 G1, norms IEC 317-20, MW79
	Winding Z	0.05 mm STP18 G1, norms IEC 317-20, MW79
Plastic Base		LCP with CuSn6 metal pins, 1-3 μm Ni, 2.0-3.7 μm Sn100 finish
ADHESIVE		Epoxy based adhesive
LABEL		Polyimide with acrylic adhesive

Dimensions: mm

(*) Critical characteristics

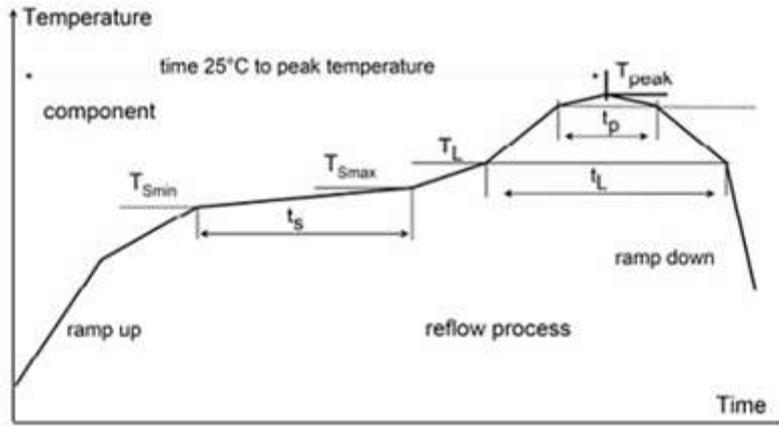
Contact PREMO for more detailed information.



	Customer	Customer (P/N)	Description 3D Coil 11x11LP XYZ 7.20mH ± 5% @125KHz		
	Premo (P/N) 3DC11LP-0720J	Prototype Ref.	Date 19/05/2020	Edition 15	Page 7/10

9. Soldering specifications

According to IPC/JEDEC-J-STD-020 a reflow profile that PREMO recommends for its inductive components is described in figure 1.



ramp up to 250 °C	T _{soak}	t _s	T _{Smax}	T _L	t _p	T _{peak} *	t _d **	time 25°C to peak	ramp down
≥3°C/s	190 ±5 °C	≥110 s	200±5°C	217±5°C	≥90s	245±5°C	≥30s	≥300s	≥6°C/s

Minimum requirements for Pb-free soldering

*peak temperature is measured on the center top of the component package

**t_d measured @ T_{peak}-5°C

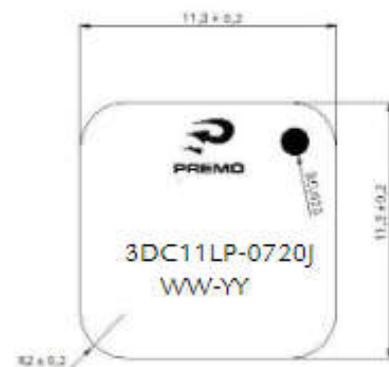
The reflow profile stated is a non-binding recommendation with just main parameters and time periods. For detailed specification and remarks regarding reflow soldering requirements, please refer to Premo document: *PREMO reflow recommendations* specification file in its latest version update.

10. Marking

The label must cover the top side of the Z winding so the copper cannot be seen from the top of the component.

Thickness of the label: 0.11 mm max.

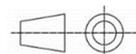
The marking will include the PREMO company Logo. One circle-dot which indicates the position of pin 1, the product code and the week and year of production



Dimensions: mm

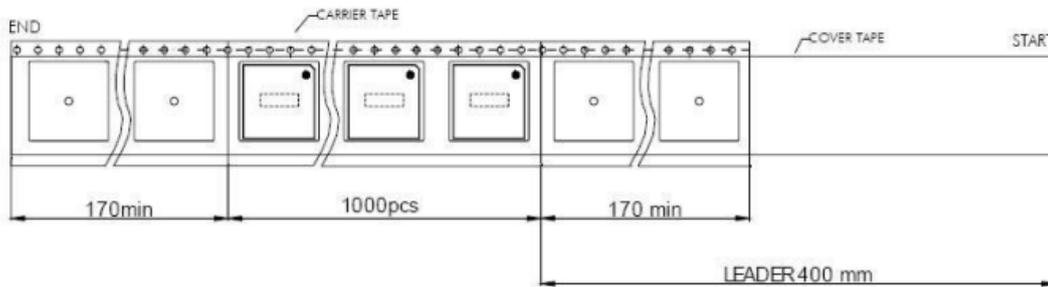
(*) Critical characteristics

Contact PREMO for more detailed information.



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10.3. Taping:



12. Edition Control

ED	CHANGE BY	DATE	CHANGE DESCRIPTION
1	Antonio Roldán	06/03/2008	First edition.
2	MM.Villarubia	16/04/2009	Update wire grade type.
3	Marta Escolar	10/06/2010	New plastic base. Height increase up to 3.15 mm. Updated ferrite properties.
4	Antonio Roldán	02/02/2011	Update to new dimension.
5	Sergio Cobos	15/03/2011	Updated dimensions, material descriptions and SMD base metallization description.
6	Pablo Pozo	22/06/2011	-Updated ferrite core material. -Updated carrier tape specification. -Parts per reel increased up to 1000.
7	Sergio Cobos	14/11/2011	Updated drawing in first page
8	A.Rojas	11/04/2013	Updated Q tolerance definition from symmetric tolerance to Qmin value.
9	MM. Villarrubia	03/02/2014	Matte tin finish in the plastic base.
10	MM. Villarrubia	03/03/2014	Sensitivity values updated with nominal value \pm tolerance
11	MM. Villarrubia	11/12/2015	Inclusion of shortcircuit of pins 2-3 and 6-7 in the electrical diagram
12	MM. Villarrubia	17/10/2016	Winding connections changed. Inclusion of the label marking spec.
13	MM. Villarrubia	16/12/2016	Winding connections changed to previous ed 11. STP18 for Z winding maintained.
14	A.Rojas	30/12/2016	Updated Rdc nominal value for Z-axis from 190 Ω to 210 Ω .
15	S.Ben Messaoud	19/05/2020	Updated Rdc nominal value for Z-axis from 210 Ω to 190 Ω

Dimensions: mm

(*) Critical characteristics

Contact PREMO for more detailed information.

