

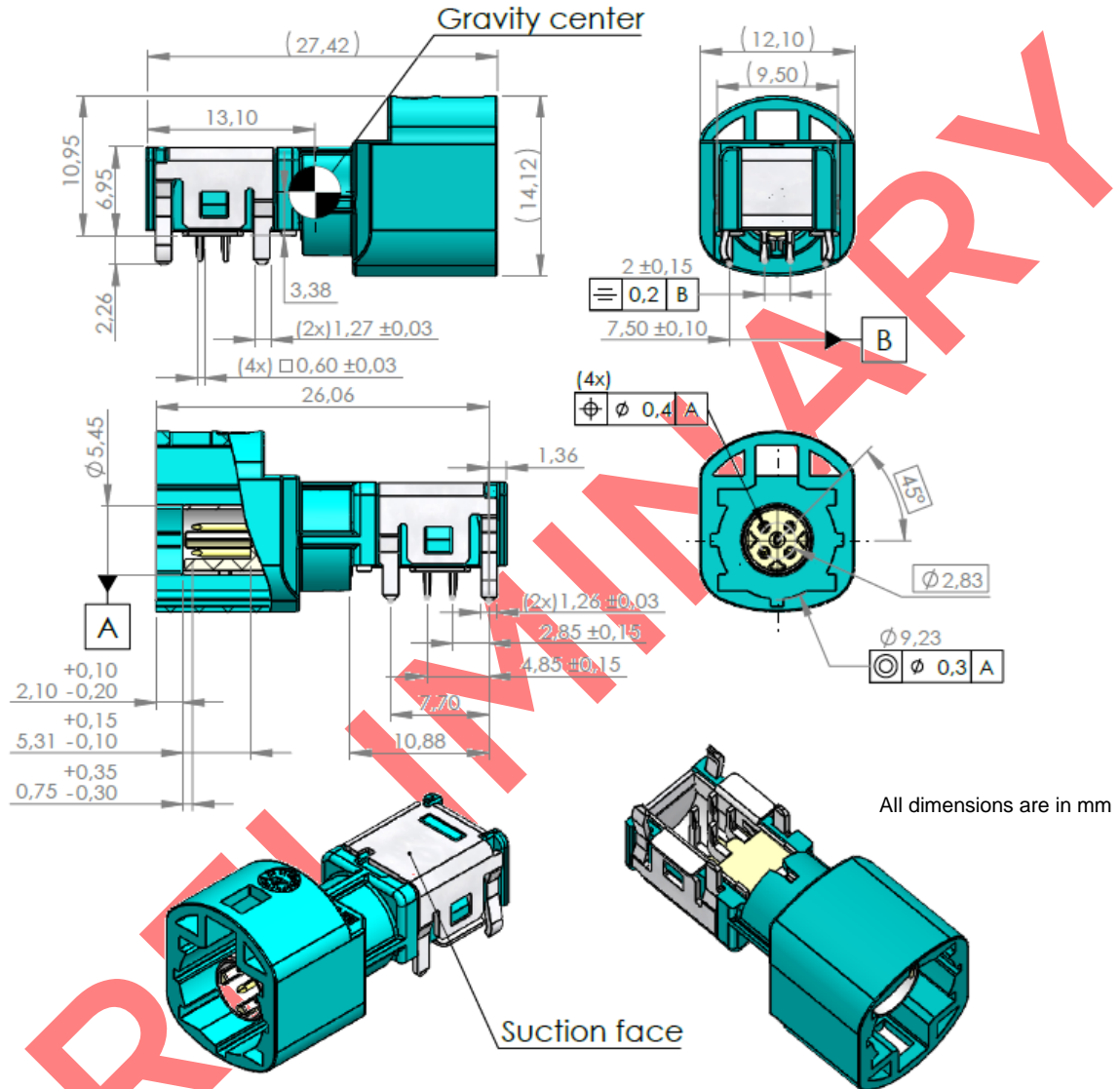
HSD 90° +2  
Process: **Reflow**

**RAYDIAL**  
**AUTOMOTIVE**

R195.160.\_00

TECHNICAL DATA SHEET

56ate	Product Index	Edited	Approved	Modification
25/06/2019	A	D. GABET	M. DUPONT	Creation



Components	Materials	Plating
Body	Brass	High temp tin over nickel
Center contact	Brass	Gold over nickel interface Tin over nickel (Pcb)
Insulator	LCP	Natural color
Cap	Brass	High temp tin over nickel
Housing	Polyamid	UL-94 V0

**Interface** Product compatible to AK (German OEM Working Group) interface

**Application** This terminal has been qualified according to AUDI Specification

**Electrical characteristics**

Impedance	100 $\Omega$
Frequency	0-2 GHz
VSWR	17 dB up to 1 Ghz Maxi
Voltage rating	100 Veff Maxi
Dielectric withstanding Voltage	250 Veff maxi
Insulation resistance	5000 M $\Omega$
RF leakage	$\geq 75$ dB
Test voltage	250 V rms
Skew	Not relevant because of the short electrical length of the receptacle compared to the length of the cable assembly
Nearend crosstalk	< 30 dB
Fearend crosstalk	< 35 dB
Signal contact resistance	10 m $\Omega$ (but not relevant because the contact is not elastic)
Outer contact resistance	25 m $\Omega$ (but not relevant because the contact is not elastic)
Power current	1.5 A DC
RoHs compliant	
EMC screening must be assured by chassis compartment	
Control box manufacturer is responsible for EMC screening	

**Mechanical characteristics**

Center contact retention, axial force, mating end	10 N mini
Center contact retention, axial force, opposite end	10 N mini
Housing retention	200 N
Mating cycles	$\geq 25$

**Environmental**

Operating temperature	-40 / +105°C
Hermetic seal	
Panel leakage	

**Component weight** 4.32 g

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### Codings

To obtain the complete part number, please fill in the blank "\_" with the coding letter

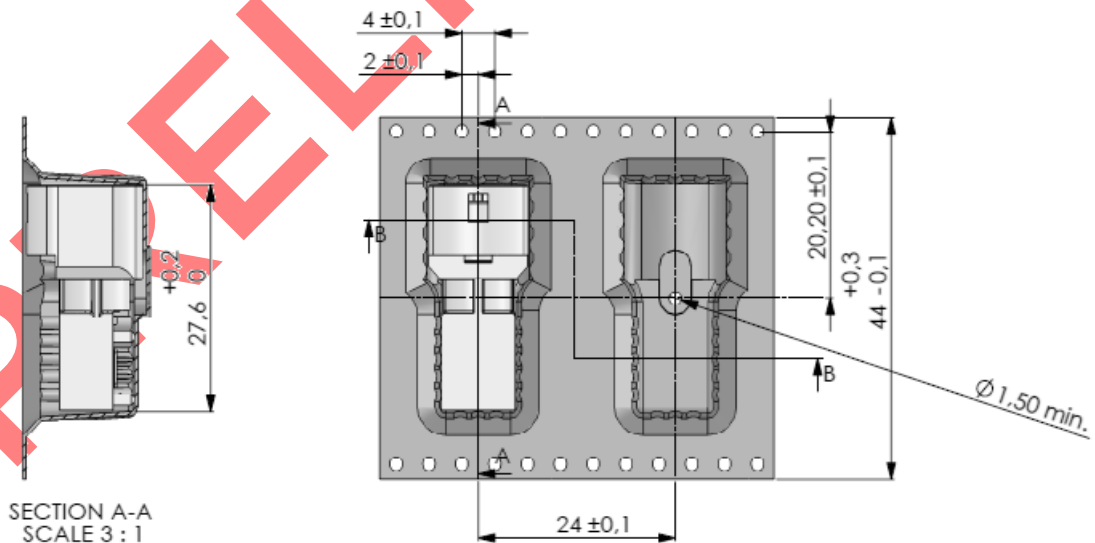
	<b>A</b> Black RAL 9005	<b>B</b> White RAL 9001	<b>C</b> Blue RAL 5005	<b>D</b> Bordeaux RAL 4004	<b>E</b> Green RAL 6002	<b>F</b> Brown RAL 8011	<b>Z</b> Waterblue RAL 5021
12h Coding							
6H Coding							
	<b>G</b> Grey RAL 7031	<b>H</b> Violet RAL 4003	<b>J</b> Beige RAL 1001	<b>K</b> Curry RAL 1027	<b>L</b> Yellow Green RAL 6018	<b>M</b> Pastel Orange RAL 2003	<b>O</b> Light Green RAL 6027

### Packaging coding 12H

4 plastic reels inside 1 cardboard box

#### Primary packaging: plastic reel

- Dimensions : Ø 380 x 44.4mm
- Number of connectors per reel: 250
- Carrier tape description:
  - 44mm width, 24mm pitch.
  - Material: thermoplastic static dissipative. Cover tape material: Thermoplastic antistatic



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TECHNICAL DATA SHEET

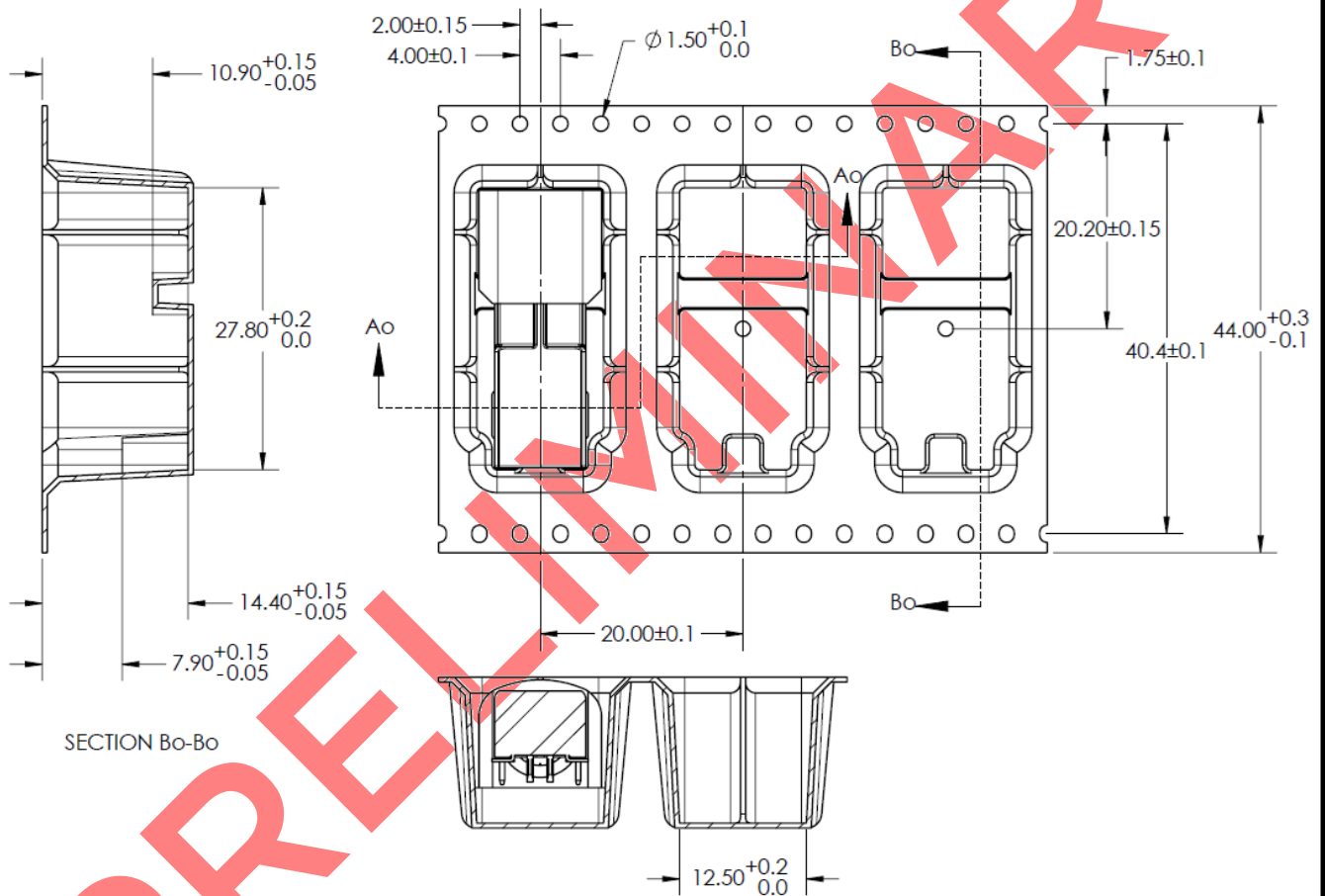
**Packaging coding 6h**

4 plastic reels inside 1 cardboard box

**Primary packaging: plastic reel**

- Dimensions :  $\varnothing 380 \times 44.4\text{mm}$
- Number of connectors per reel: 300
- Carrier tape description:
  - 44mm width, 20mm pitch.

Material: thermoplastic static dissipative. Cover tape material: Thermoplastic antistatic

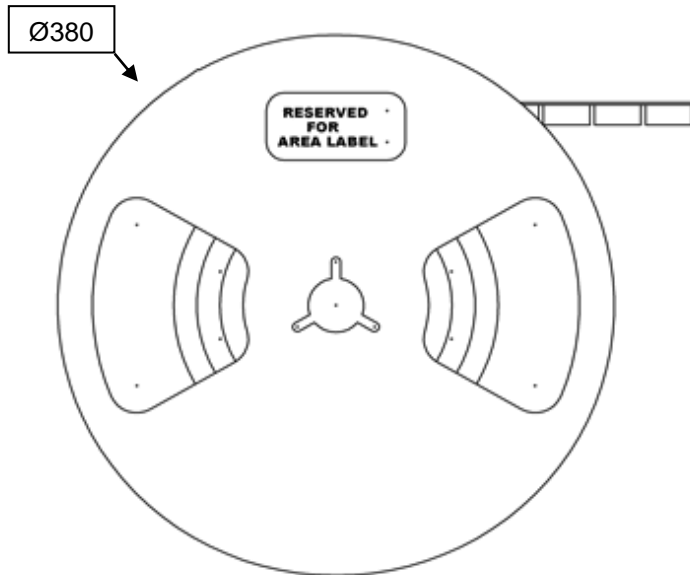


HSD 90° +2  
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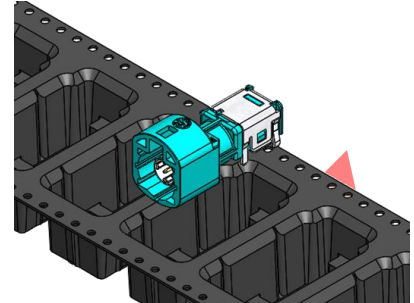
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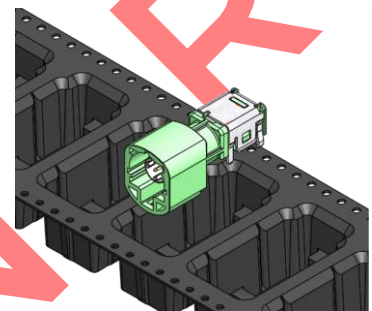
TECHNICAL DATA SHEET



Coding 12H



Coding 6H



**Secondary packaging: Cardboard box**

- Outside dimensions: 400 x 400 x 260 mm
- Number of reels per cardboard box: 4
- Number of connectors per cardboard box: 1080
- Weight: 8.49 kg



(Picture is not contractual)

**Third Packaging: Pallet**

- PALLET Europe 1200 x 800mm
- Height: < 1450 mm
- 30 cardbox by pallet
- 32 400 receptacles by complete pallet

**Packaging**

The product must be used as soon as it is removed from the cells.

Do not leave the product in the open air.

Reels should be stored indoors, in his original unopened packaging, in a controlled climate environment not exceeding -20°C / +40°C and 60% Max. relative humidity.

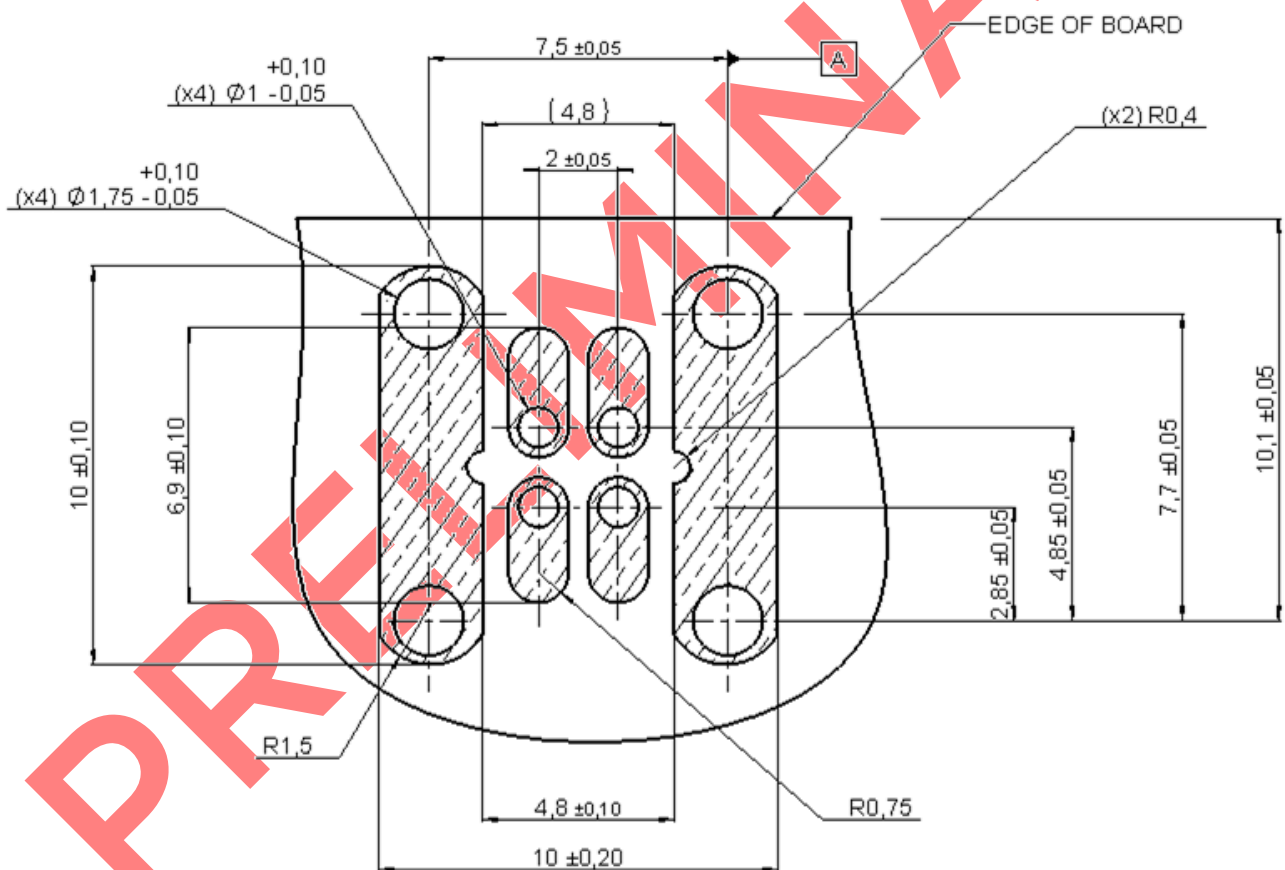
Reels should be protected from direct sunlight and should be used on a "first-in, first-out" basis.

It is recommended that connector be used within 1 year from the date of manufacture when stored according to the recommended storage condition.

**PCB Cut out**

- PCB Thickness: 1.6 mm.
- PCB recommended material: FR4 ( $\epsilon_r = 4.6$ ).
- 10 metalized holes.
- Solder paste has to be printed onto the land of solder and into holes to permit Pin In Hole Reflow.
- This layout is a recommendation for solderability.
- Design and performances of the PCB will depend on customers choices and RAYDIAL cannot be considered as responsible in case of bad performances.
- A numerical simulation of the PCB is recommended to optimize the RF performance in high frequency.

**12H/6H coding layout**



### Solder procedure

- 1 - Deposit solder paste "Sn95.5Ag3.8Cu0.7" on mounting zone by screen printing application.  
We recommend a low Residue Solid Flux.  
We advise a thickness of 0.2 millimeters min. (0,008 inch min.).  
The holes must be totally filled with cream Verify that the edges of the zone are clean.
- 2 - Placement of the receptacle on the mounting zone with an automatic machine of "pick and place" type.  
Video camera is preferred to check the positioning of the component.  
Adhesive agents are forbidden on the receptacle.
- 3 - Soldering by reflow process. The typical profile to use is given below.
- 4 - Clean printed circuit boards.
- 5 - Check of solder joints and position of the component by visual inspection

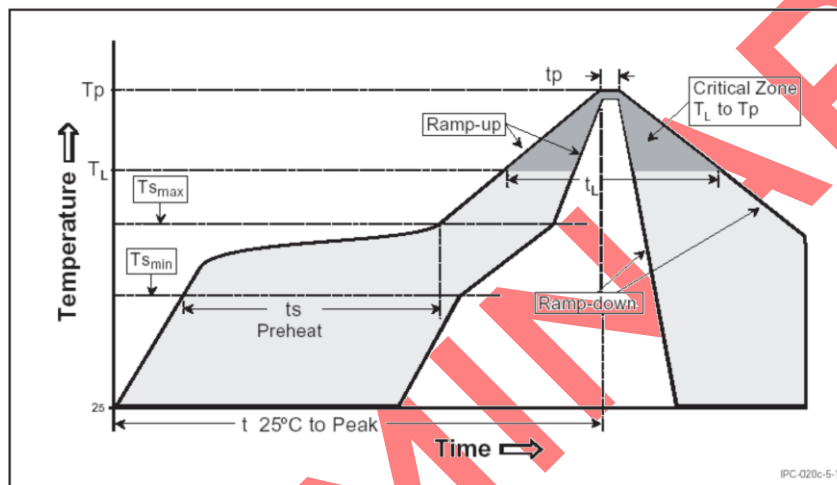


Table 4-2 Pb free process – Package classification reflow temperatures

Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350 – 2000	Volume mm <sup>3</sup> >2000
< 1,6mm	260 + 0°C*	260 + 0°C*	260 + 0°C*
>1,6mm / <2,5mm	260 + 0°C*	250 + 0°C*	245 + 0°C*
>2,5mm	260 + 0°C*	245 + 0°C*	245 + 0°C*

\*Tolerance: The device manufacturer/supplier **shall** assure process compatibility up to and including the stated classification temperature (this means Peak reflow temperature +0°C. For example 260°C+0°C at the rated MSL level

Profile Feature	Sn-Pb Eutectic assembly	Pb-Free Assembly
Average Ramp-up Rate (TS <sub>max</sub> to Tp)	3°C/second max.	3°C/second max.
Preheat		
- Temperature min (TS <sub>min</sub> )	100°C	150°C
- Temperature max (TS <sub>max</sub> )	150°C	200°C
- Time (TS <sub>min</sub> to TS <sub>max</sub> )	60-120 seconds	60-180 seconds
Time maintained above :		
- Temperature (TL)	183°C	217°C
- Time (tL)	60-150 seconds	60-150 seconds
Peak/Classification Temperature (Tp)	See Table 4.1	See Table 4.2
Time within 5°C of actual Peak Temperature (tp)	10-30 seconds	20-40 seconds
Ramp-down rate	6°C/second max	6°C/second max
Time 25°C to Peak Temperature	6 minutes max	8 minutes max

**Note :** All temperatures refer to topside of the package, measured on the package body surface



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