

IM5-DBK6406-R Specification
UHF RFID Document Tag (New Version)

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1. Scope

This specsheet defines UHF RFID Ultra Small Package Tag IM5-DBK6406-R

2. Model No.

Model No. is shown in Table 1.

Table 1.Type

No.	Model	Note
1	IM5-DBK6406-R	

3. RFID Protocol

The tag is compliant with RFID standards shown in Table 2.

Table 2. Compliant Standards

No.	Item	Spec
1	Protocol	ISO/IEC 18000-6 Type C EPCglobal™ Class1 Generation2

4. Operating Conditions

Operating conditions are shown in Table 3.

Table 3. Operating Environment

No.	Item	Spec	Note
1	Operating Temp.	-20 to 70°C	Humidity : 10 to 80%RH
2	Storage Temp.	-30 to 75°C	Humidity : 10 to 80%RH

5. General specs

General specs are shown in Table 4.

Table 4. General Specs

No.	Item	Spec		Note
1	Carrier Frequency	860 to 960MHz		
2	Memory	TID	96bit	48bit : Serial No 16bit : TID Header 32bit : Manufacturer/Model No
		EPC	128bit	
		Passwords	64bit	Kill/Access
3	Data Retention	50 years		Reference
4	Write Endurance	100,000 cycles		Reference

6. Figure

6.1 Layer Structure

The tag figure is shown in Fig 1.

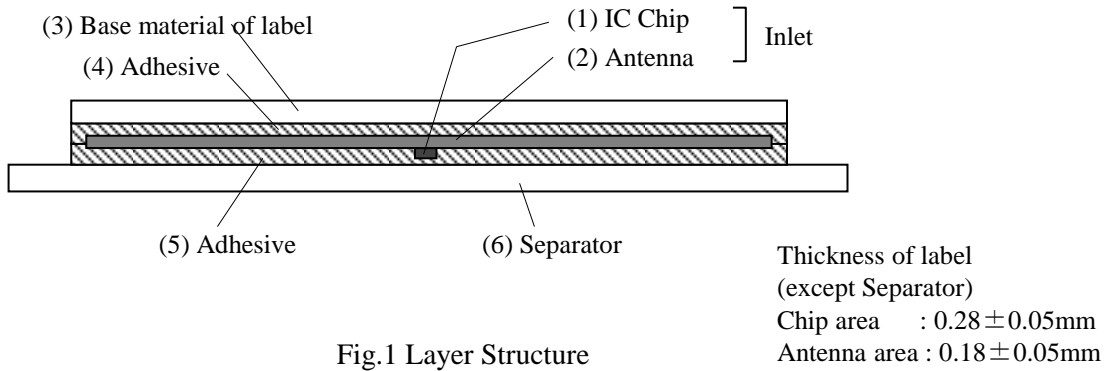


Fig.1 Layer Structure

6.2 Materials

Materials of the products is shown in Table 5

Table 5 Materials

No.	Parts	Materials	Notes
(1)	Inlet	IC Chip	Monza5 (Impinj)
(2)		Antenna	Al (Base material is Polyester)
(3)	Surface	Base Material	High quality paper (White)
(4)		Adhesive	Acrylic
(5)	Adhesive	Acrylic base double-sided tape	
(6)	separator	Glassine paper	

6. Outline

The outline is shown in Fig 2.

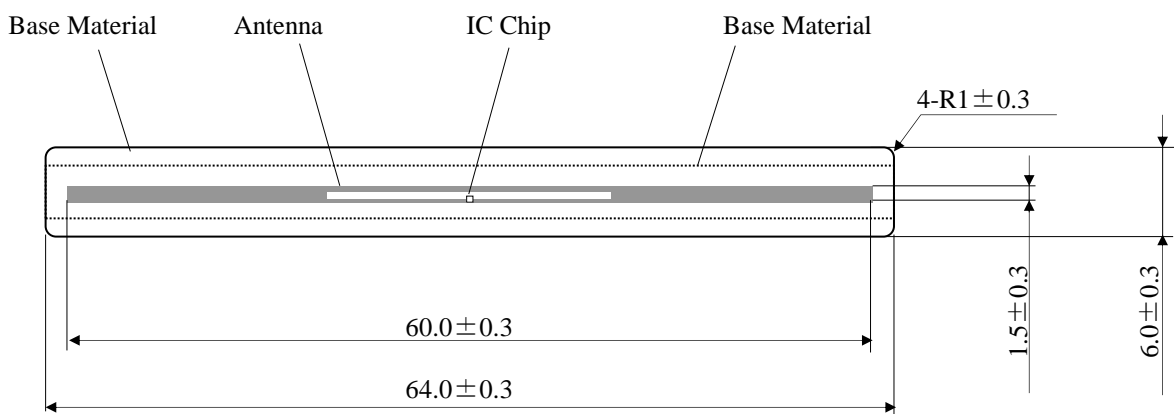


Fig 2. Outline

Unit: mm

6.4 Tag position on the role

This tag is delivered as role. Tag position on the role is shown in Fig.3

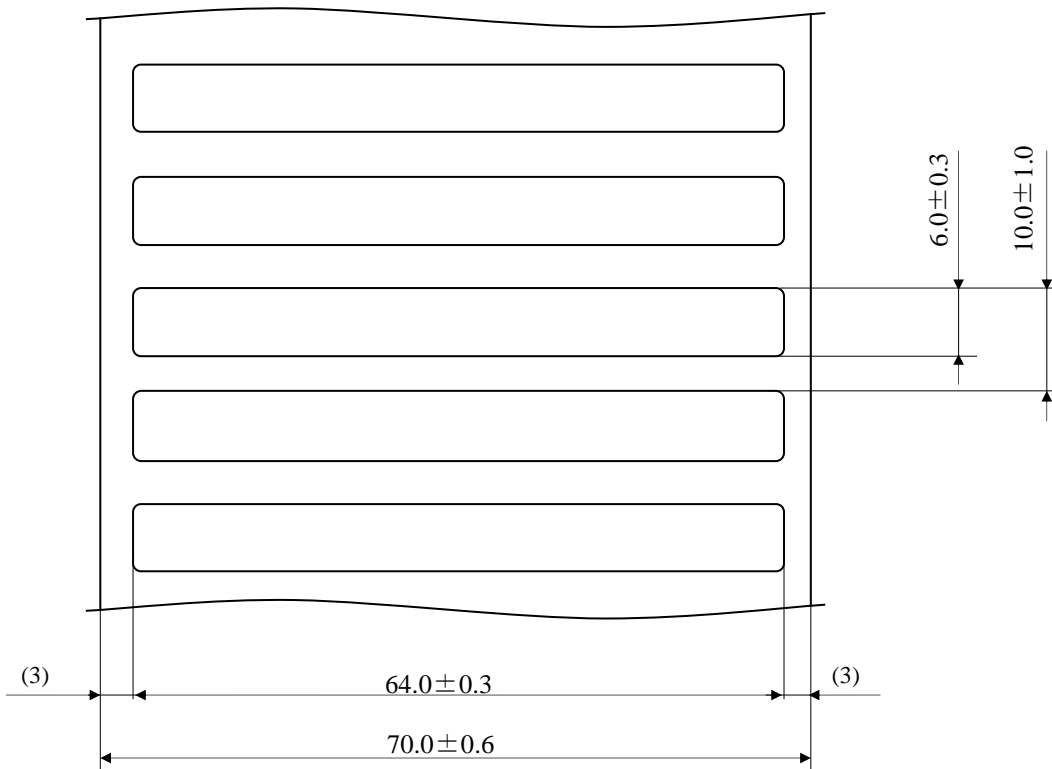


Fig 3. Tag position on the role

Unit: mm
():Reference value

6.5 Role specification

Role specification is shown in Table 6

Table 6. Role Specification

No.	Item	Specification
1	quantity	5,000 pcs per role
2	Width of separator	70.0 ± 0.6 mm
3	Role core material	Paper
4	Bore of core	3 inches
5	Direction of role	Label is surface side
6	Number of seam	3 seams max. (Except the seam at the part of lead and end)
7	Role lead/end	Role lead and end will be more than 50 cm
8	Remove bad tag	Bad tag is removed and is not replaced to good tag.

7. Read Range Specification

Read range specification is shown in Table 67

Table 7. 8. Read Range Specification <Reference only>

No.	Item	Reader	Condition	Ref. value	Notes
1	Read	UHF HHT (1W)	Single Tag	Read range 30cm min.	Notes
			Stacked Tag	Space of documents 1.2mm min.	

(Note1) The center line of antenna face to label vertically

(Note 2) Test condition is room temperature and free air.

Test condition of reading stacked tag is shown in fig. 4

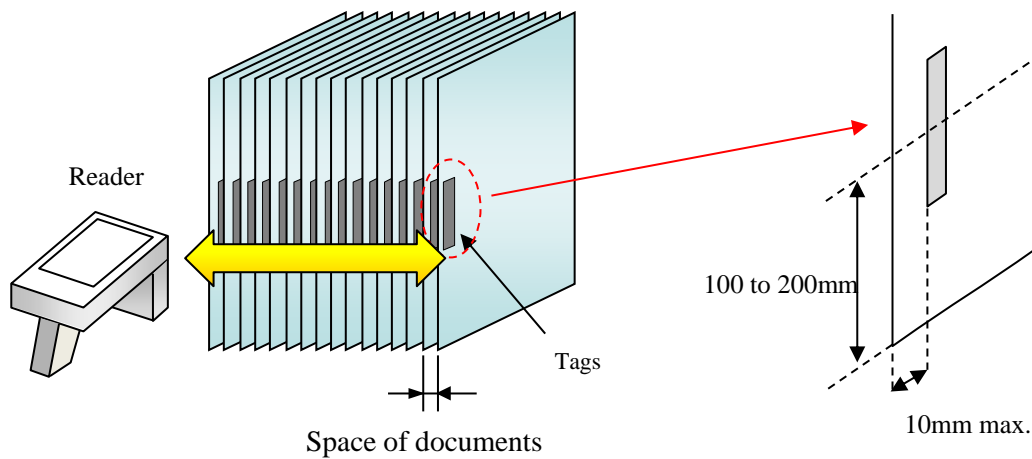


Fig. 4 Test condition of reading stacked tag

- * Space of documents is defined when reader is anti-collision mode, and read by back and forth scanning.
- * Reading results will be affected by tag attached material, reader setting and environment.
Please check actual reader and condition before real operation adequately.
- * This tag is optimized to read stacked tag in very narrow space.
Therefore read range of the tag is limited as optimized design..

8. Packing

The packing form is shown is Fig. 5

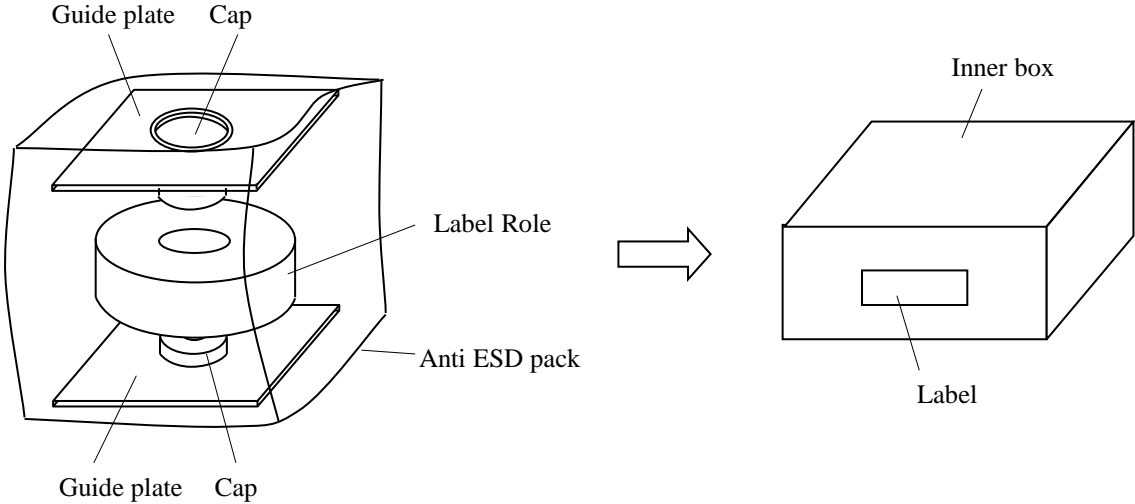


Fig. 5 Packing

◆ Notifications to use

1. To keep away direct daylight, and keep storage condition as shown in this specification.
2. To keep away from ultraviolet light that causes change color and debase adhesively.
3. To attached the label on the flat object. Unflat surface of the object causes debase adhesively.
4. To remove and clean particle, oil, water etc. on the surface of the object before attached.
5. To pay caution to followings due to IC chip in the tag.
 - 1) Not to bend, twist, and give a shock.
 - 2) To keep away from direct daylight and fire causes high temperature.
 - 3) Not to put in a condition of high humidity or condensing
 - 4) Not to put the tag in the water and liquid. (This tag is not water proof)
 - 5) To pay caution of ESD.
 - 6) Not to put the tag under strong electromagnetic field or radial ray.
6. Not to reuse the tag once attached on a object.
7. Read range will be change depend on environment.
8. When you write data in the tag, please keep certain distance and modify wrote data.

For safety designing

1. Although Hitachi Chemical endeavors to improve the quality and reliability of its products, IC Tag products have specific characteristics such as the occurrence of failure at a certain rate and malfunctions under certain use conditions. Please be sure to implement safety measures to guard against the possibility of physical injury, and injury or damage caused by fire in the event of the failure of a Hitachi Chemical product, such as safety design for hardware and software including but not limited to redundancy, fire control and malfunction prevention.

- Illustration in this specsheet will be different from actual products.
- This specification will be changed without notices.