

Product Specification for
UHF Ultra Small Package Tag
(IM5-PK2525B)

Ver.2.0

April, 2016

 **Hitachi Chemical Co., Ltd.**

Protection Film R&D Dept.

1. Scope

This specsheet defines UHF RFID Ultra Small Package Tag IM5-PK2525B.

2. Model No.

Model No. is shown in Table 1.

Table 1.Type

No.	Model	Note
1	IM5-PK2525B	

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 TypeC 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 920MHz		
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

The tag figure is shown in Fig 1.

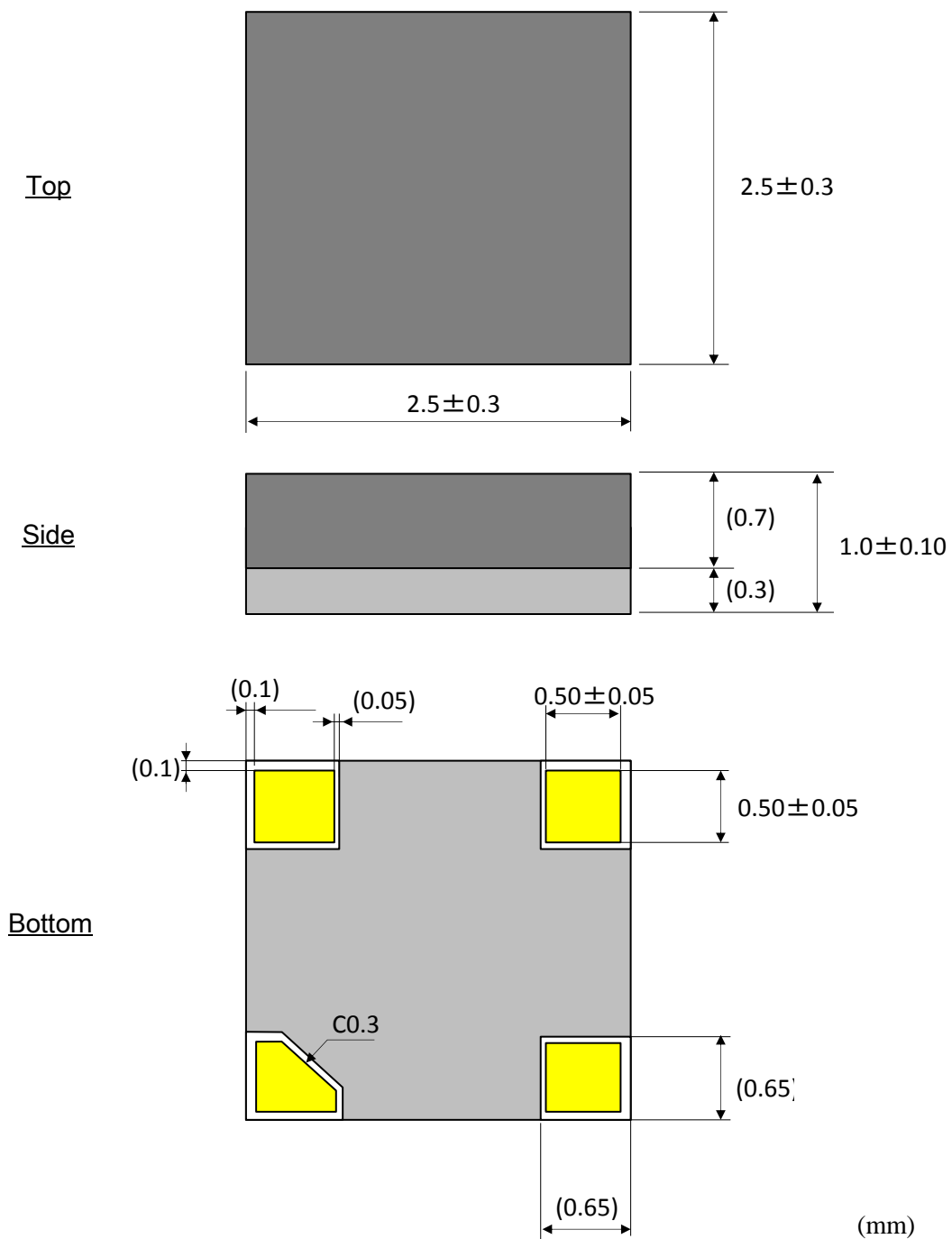


Fig 1. Figure

7. Material

Material of tag is shown in Table 5.

Table 5. Material

No.	Parts	Spec	Note
(1)	IC Chip	Monza5 by Impinj	
(2)	Substrate	Glass-epoxy	
(3)	Packaging Material	Epoxy Resin	
(4)	Surface of Pattern	Au	

8. Read Range

Read range is shown in Table 6.

Table 6. Read range

No.	Item	Specs	Condition	
1	Read Range	Contact with Reader Antenna Surface	Reader	AT-880 by ATID
			Frequency	920MHz
			Power	1W
			Environment	Antenna surface of tag is facing reader antenna surface. (Free Air/Room Temp. and Humidity)

Note : Read range can change by the reader model, power, environment.

9. Packing Specification

(1) Packing Specification

Packing Specification is shown in Table 7.

Table 7. Packing Specification

No.	Item	Specs	Note
1	Delivery Form	Tape and Reel	
2	Quantity	3,000 pieces	
3	Tape Width	8.0±0.3mm	
4	Tag Pitch	4.0±0.1mm	Carrier Tape Pocket
5	Outside Diameter of Reel	180+0/-1.5mm	
6	Inside Diameter of Reel	φ13±0.2mm	

(2) Tape

Tape spec is shown in Fig 2 to Fig4.

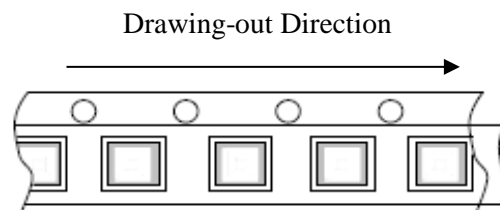


Fig 2. Drawing-out Direction of Tape

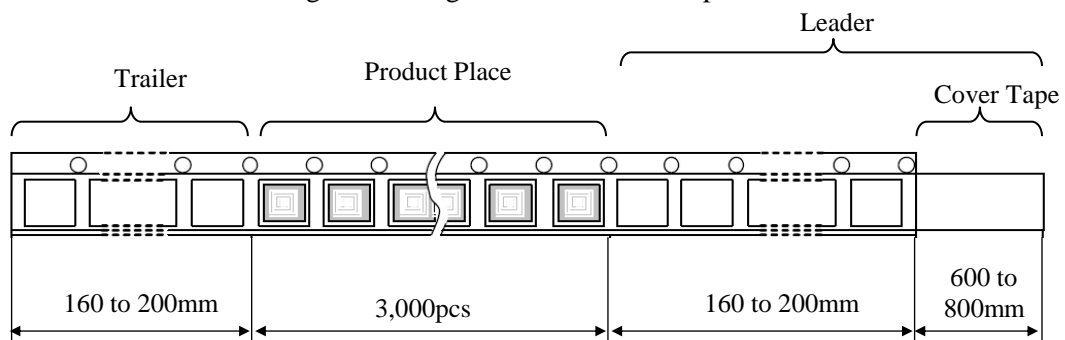


Fig 3. Product Storage

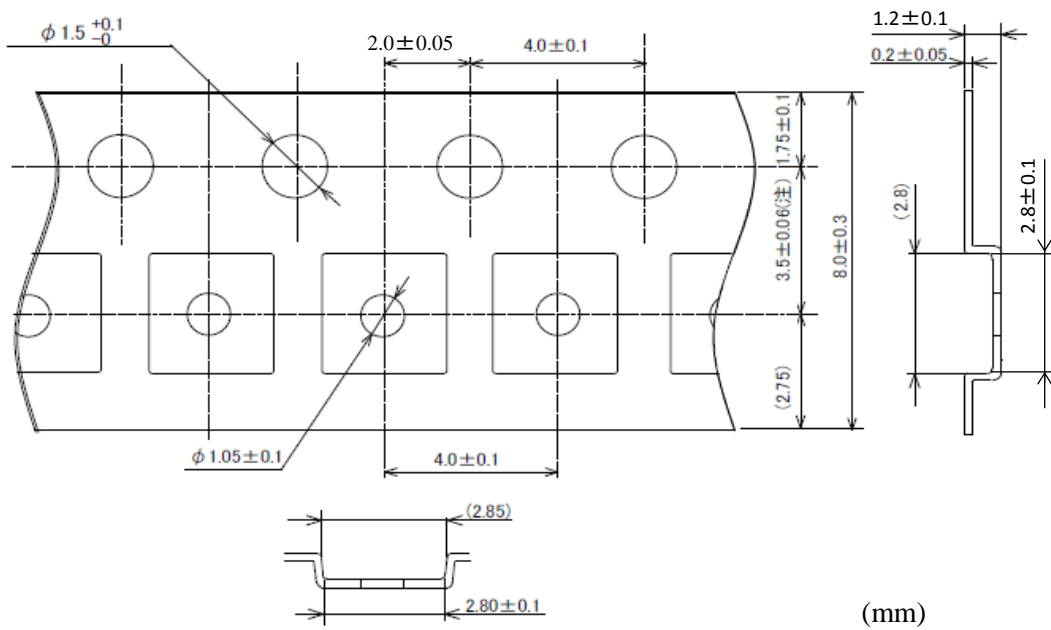


Fig 4. Carrier Tape Size

(3) Reel

Reel Spec is shown in Fig 5.

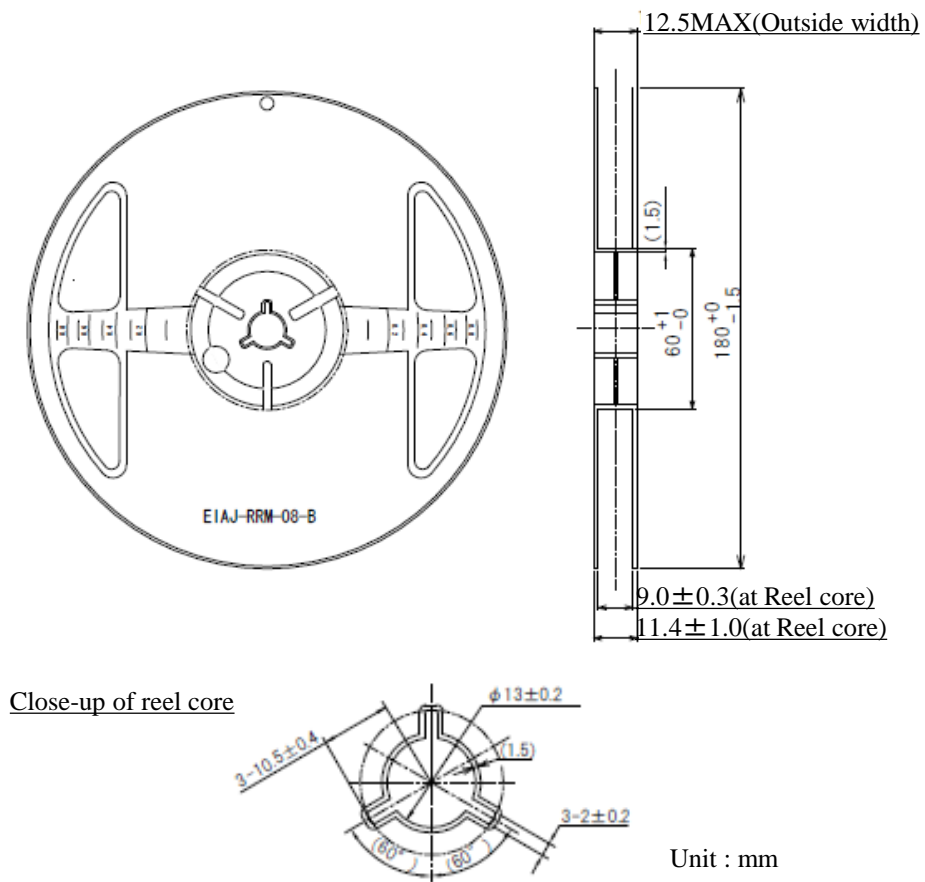
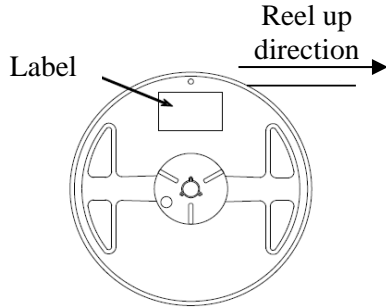
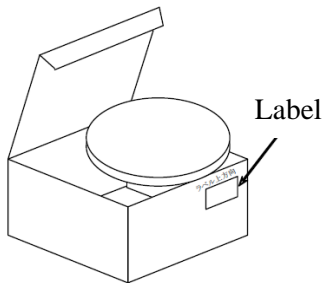
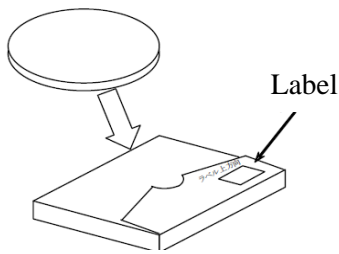


Fig 5. Reel Spec

(4) Inner Box, Label Contents

Inner Box, Label Contents are shown in Table 8.

Table 8. Inner Box, Label Contents

	Delivery Form	Label Example	Quantity						
Tape Reel and		<table border="1"> <tr> <td>P/N</td> <td>IM5-PK2525B</td> </tr> <tr> <td>QTY</td> <td>3,000</td> </tr> <tr> <td>LOT</td> <td></td> </tr> </table>	P/N	IM5-PK2525B	QTY	3,000	LOT		3,000 pieces
P/N	IM5-PK2525B								
QTY	3,000								
LOT									
5 Reels		<table border="1"> <tr> <td>P/N</td> <td>IM5-PK2525B</td> </tr> <tr> <td>QTY</td> <td>15,000</td> </tr> <tr> <td colspan="2">Hitachi Chemical Co.,Ltd.</td> </tr> </table>	P/N	IM5-PK2525B	QTY	15,000	Hitachi Chemical Co.,Ltd.		Max.15,000 pieces (Max.5 Reels)
P/N	IM5-PK2525B								
QTY	15,000								
Hitachi Chemical Co.,Ltd.									
1 Reel		<table border="1"> <tr> <td>P/N</td> <td>IM5-PK2525B</td> </tr> <tr> <td>QTY</td> <td>3,000</td> </tr> <tr> <td colspan="2">Hitachi Chemical Co.,Ltd.</td> </tr> </table>	P/N	IM5-PK2525B	QTY	3,000	Hitachi Chemical Co.,Ltd.		5,000 pieces (1 Reel)
P/N	IM5-PK2525B								
QTY	3,000								
Hitachi Chemical Co.,Ltd.									

10. Precautions for handling of Product

- (1) This product must be stored in a cool and dark place at normal temperature and humidity without direct sunshine in accordance with the provided storage conditions.
- (2) Please care about followings to protect IC chip inside the Product.
 - 1) Not to add pressure and impact on the chip when the Product is processed or attached on the object.
 - 2) Not to keep the Product under high temperature such as at direct sunshine, beside fire burning.
 - 3) Not to keep the Product under high humidity and the place of dewfall for a long time to prevent the malfunctions of Products.
 - 4) Not to keep the Product in the water or other liquid for a long time to prevent the deterioration in communication distance or the malfunction of Products. In the event that the Product gets wet with water, it must be wiped off with a dry cloth.
 - 5) To note that the chip might be malfunctioned by static electricity.
 - 6) Not to use the Product beside strong electric wave to prevent the improper operation or the malfunction of Products.
- (3) In the event that the Product has been processed to make other goods, read range will be affected due to material of the object or reading environment. Please confirm the read range at the site and condition before use.
- (4) When data is written into the Product, please make sure that writing data is completed. It is possible that writing data cannot be completed normally due to the electricity shortage.
- (5) Please care not to swallow or suck in this product because of very small. And care about the corner of the products to prevent cause injury a fingertip or eye.

11. Conditions for the use of Products

- (1) In order to prevent serious accident in case of the malfunctions of Products, the customer shall back up or take measures to minimize damages as a prerequisite for the use of Products.
- (2) The Products are designed and manufactured for general industrial usage and if the customer applies the Products for other than such usage (hereinafter called as “non-general industrial application”, the warranty of this Specification regarding the performance or safety is not applied even within warranty period. In the event that the customer applies this product for non-general industrial application and the customer, HCC or third party gets damage, the customer shall indemnify and hold HCC harmless from and against any losses, costs, damages and fees attributable to any such claims or allegations and solve the problem as its responsibility.

Followings are examples of non-general industrial applications, but not be limited to:

- 1) Atomic power, Aviation, Space, Rail road, Ship, Automotive, Safety equipment, Human-related transportation system, Traffic equipment
- 2) 24 Hours non-stop operation system, Payment system, Supply system for electricity, gas and water
- 3) Radiation related equipment
- 4) Medical, Clinical test
- 5) All of figures in this specification are just an image and not exactly same as the product.
- 6) This specification will be changed without notice.