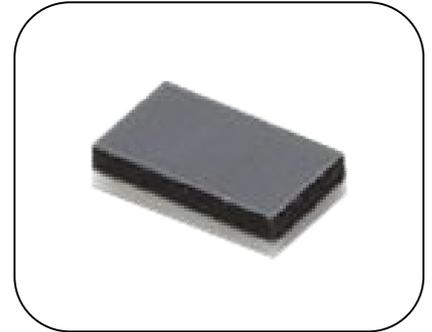


1, General Descriptions

Murata MAGICSTRAP® is an innovative RFID module which complies EPC global Gen2(v1.2.0).

This product can be used as an ultra small tag and this can be fit on any metal objects, non-metal objects, as well as embedding into any objects by glue or adhesive and so on.

This can be used globally with high performance and reliability.



[Features]

- 1-1. Compliant with ISO18000-63 and EPC global Gen2(v1.2.0)
- 1-2. Ultra small package (2.0 x 1.25 x 0.55mm)
- 1-3. Supports wide frequency range from 865MHz to 920MHz, allowing to cover all globally relevant UHF frequency bands
- 1-4. 100% green material for RoHS compliance
- 1-5. Internal 512bit user memory available.

2, MAGICSTRAP® Block Diagram

Figure.1 shows MAGICSTRAP® block diagram.

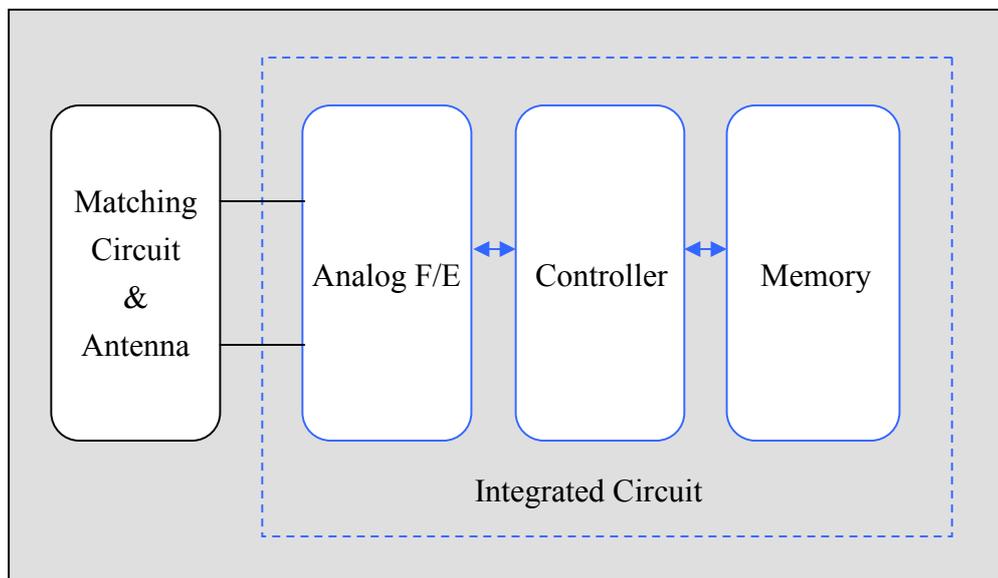
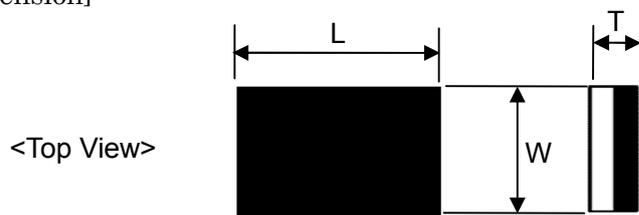


Fig.1 MAGICSTRAP® Block Diagram

3. Mechanical Information

[Dimension]



<Bottom View>



Unit:mm

Mark	Dimensions
L	2.00±0.20
W	1.25±0.20
T	0.55max.

Fig.2 MAGICSTRAP® Package Dimension

4. Electrical Performance

4-1. Frequency range

865 – 928 MHz

Ta=25°C, Unit: Ohm

4-2. Memory size

Part number	IC	TID	EPC	User
LXMS21NCNH-147	NXP UCODE G2iM	96 bit	256 bit	512 bit

4-3. Memory characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
t _{ret}	Retention time	T _{amb} ≤ 55°C	20	-	-	Year
N _{endu(W)}	Write endurance		1000	10000*	-	cycle

*T_{amb} ≤ 25°C

5. Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
T _{stg}	Storage temperature	-55	+125	°C
T _a	Operating temperature	-40	+85	°C

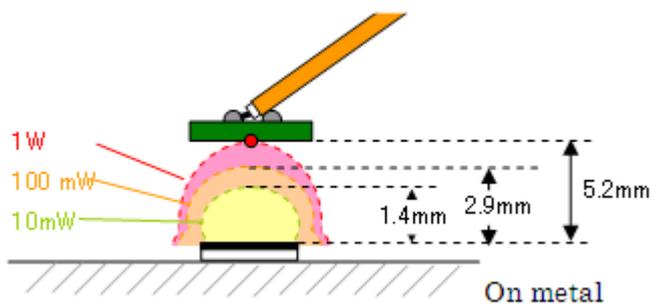
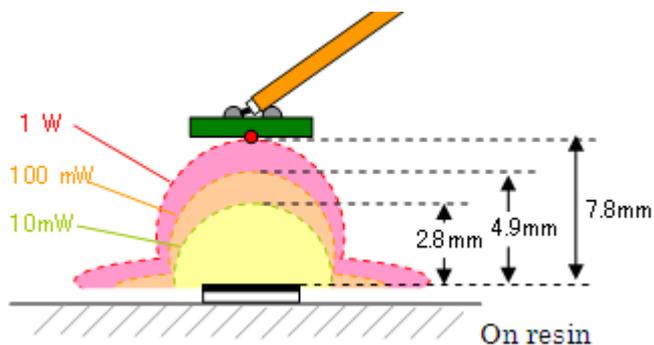
6. RoHS compliance

This product is compliant with RoHS directive

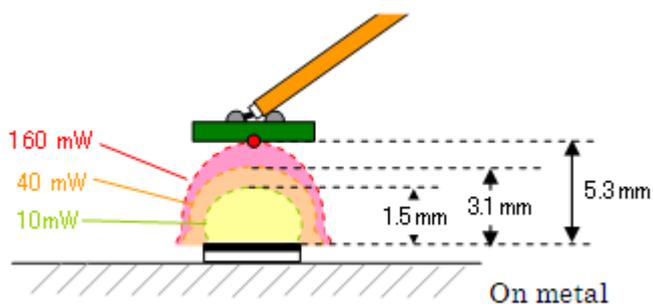
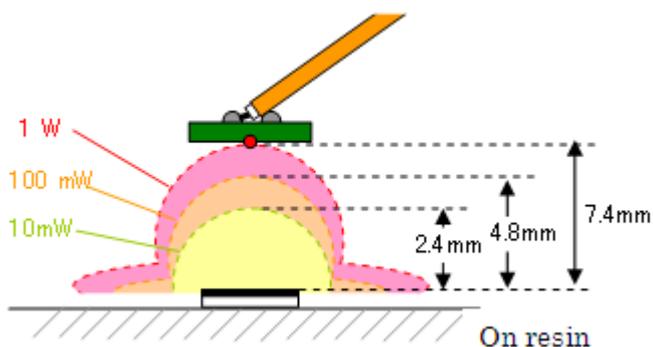
7. Reading range (reference only)

Reading range varies with Output Power of Reader/Writer and reading range hereafter is measured with matched Reader/Writer antenna in 4-3.

7-1. EU band

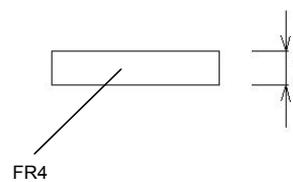
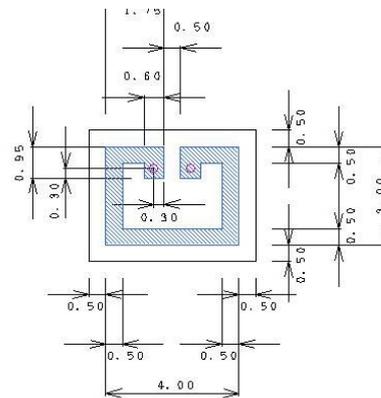
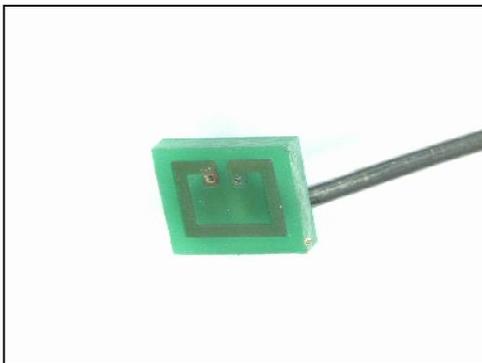
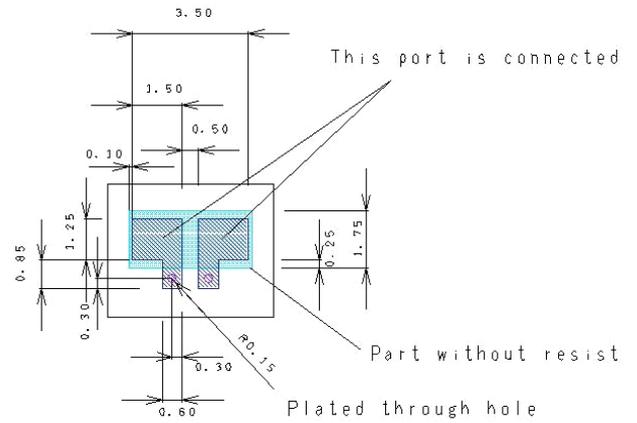
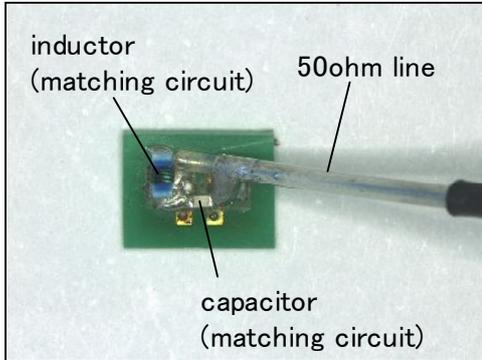


7-2. US band



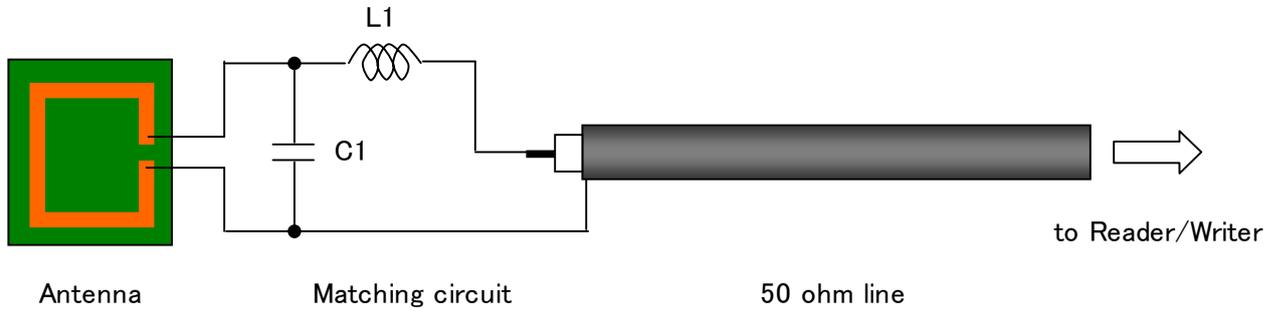
7-3. Reference design of reader/writer antenna

7-3-1. Dimension



[mm]

7-3-2. Matching circuit



Frequency		C1	L1
866.5MHz	EU	6.8pF	39nH
915MHz	US	6.0pF	39nH

Above C1 & L1 are just for references. In actual setting, these values are recommended to be adjusted according to actual antenna characteristics. The best tuning balance will show the minimum return from antenna.

7-3-3. Demo video

Demo video is available from our Web below:-

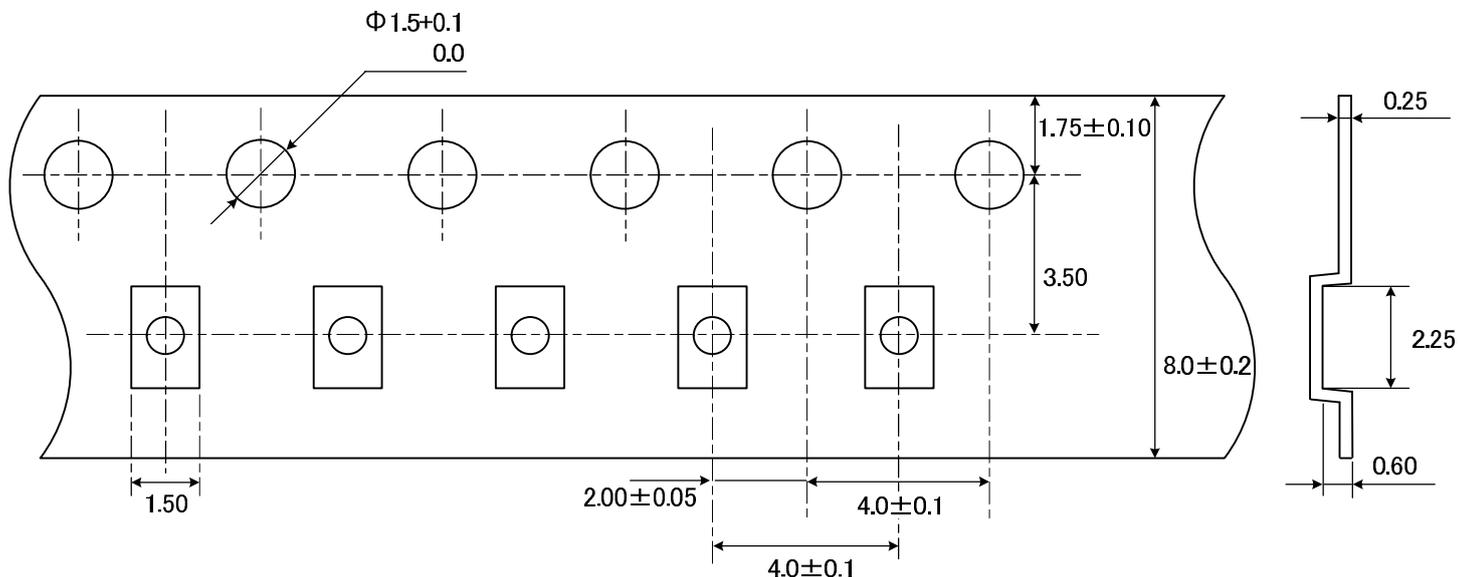
<http://www.murata.com/products/rfid/demonstration/index.html>

8. RoHS compliance

This product is compliant with RoHS directive

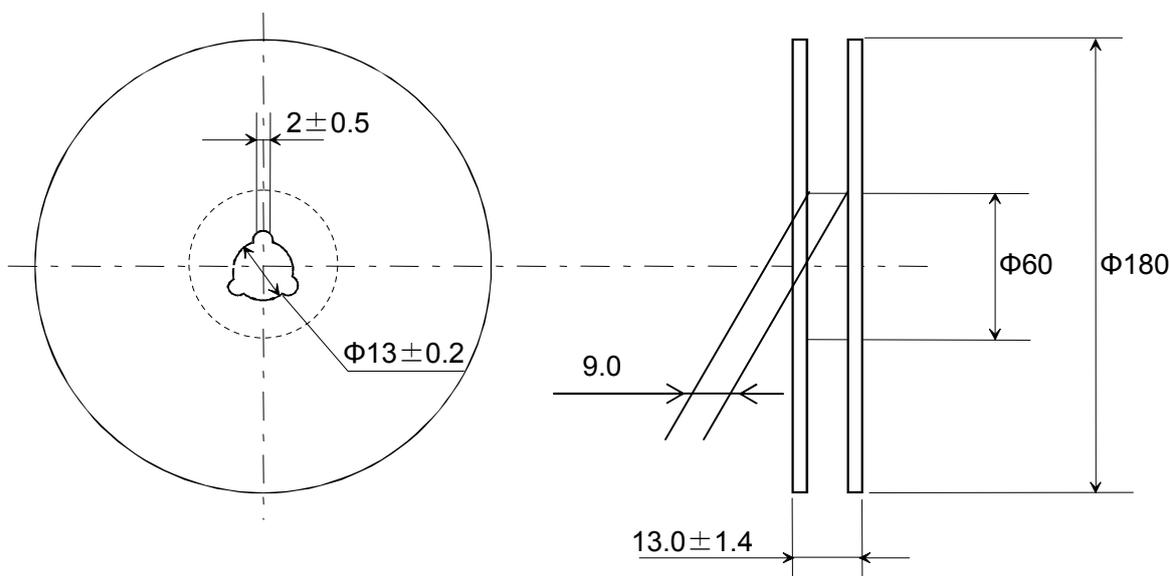
10. Packaging

10-1. Dimensions of tape (plastic tape)



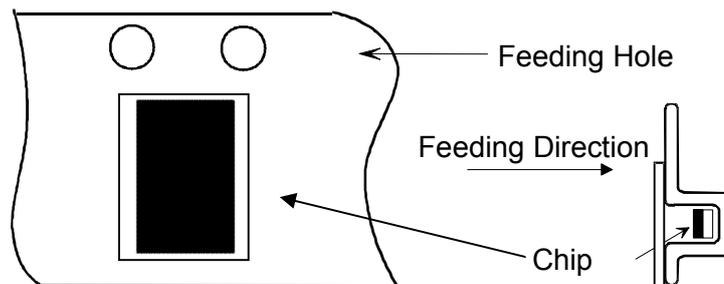
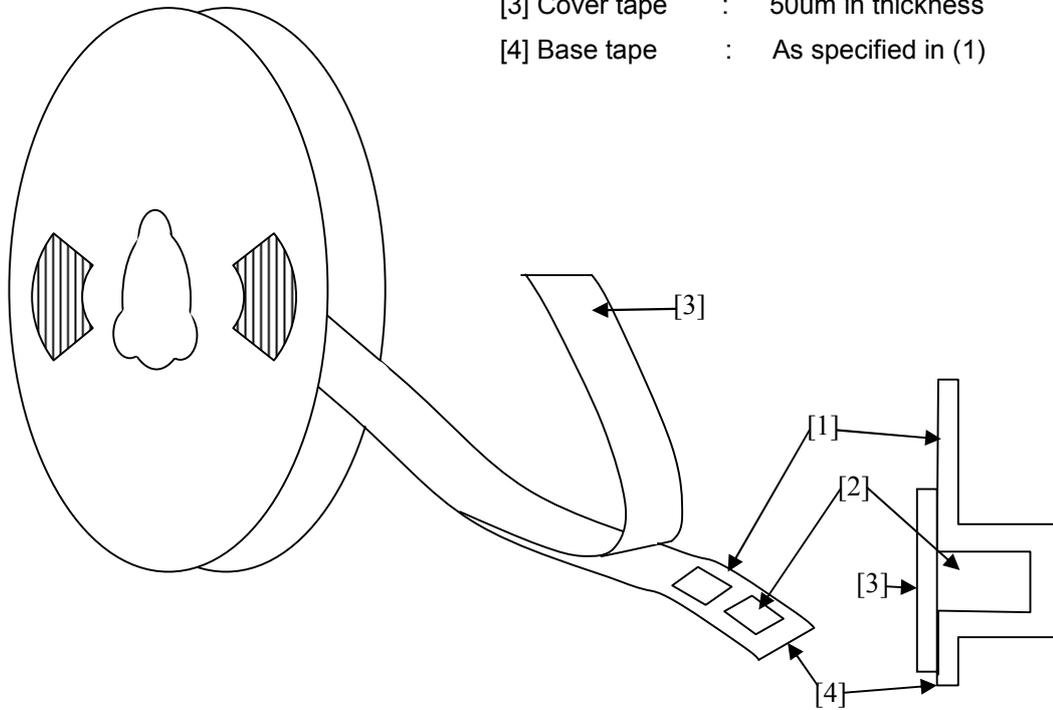
10-2. Dimensions of reel

Unit: mm

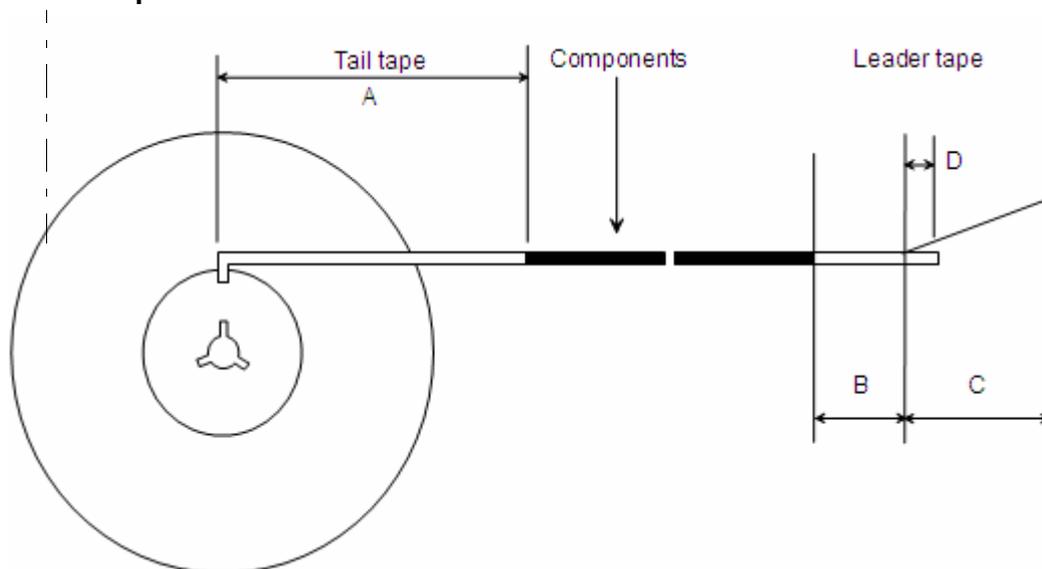


10-3.Taping Diagrams

- [1] Feeding Hole : As specified in (1)
- [2] Hole for chip : As specified in (1)
- [3] Cover tape : 50um in thickness
- [4] Base tape : As specified in (1)



10-4. Leader and Tail tape



[mm]

Tail tape Part	A	No components	160 ~ 190
Leader tape part	B	No components (adhered cover tape)	150 ~ 200
	C	Cover tape part (including D)	250 ~ 300
	D	Not adhered cover tape	20 ~ 40

10-5. Taping direction

The tape for chips are wound clockwise, the feeding holes to the right side as the tape is pulled toward the user.

10-6. Quantity per reel

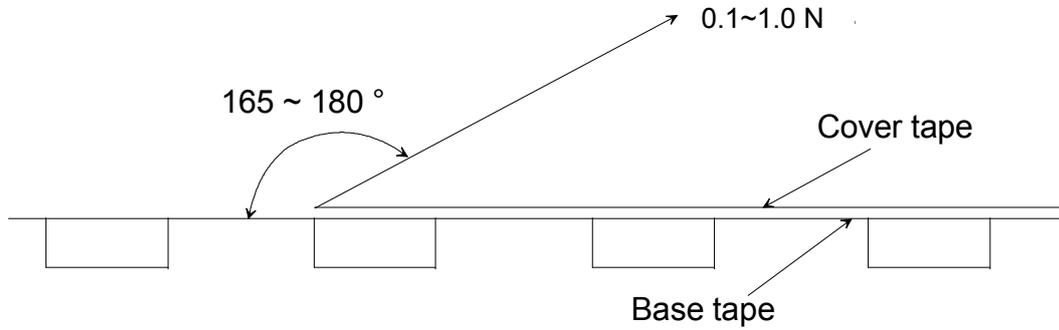
5,000pcs

10-7. Minimum order quantity

5,000pcs

10-9. Peeling force

0.1~1.0 N in the direction of peeling as shown below.



11. Contact window

URL : <http://www.murata.com/products/rfid/index.html>

" MAGICSTRAP® " is the registered trademark of Murata Manufacturing. Co., Ltd. in Japan.

For any inquiries/queries, please feel free to contact us.