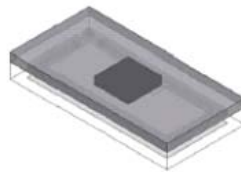


Murata Electronics
MAGICSTRAP®
Technical Data Sheet

Aug 2009



MAGICSTRAP® Technical Data Sheet

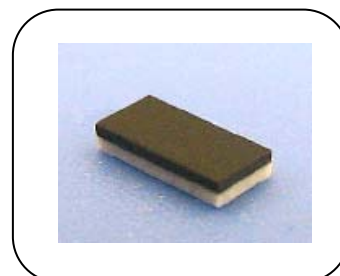
Murata part number: LXMS31ACNA / LXMS31ACNB



Innovator in Electronics

1. General Descriptions

Murata MAGICSTRAP® is an innovative RFID module with a wide range of RF features. It incorporates an industry standard IC.



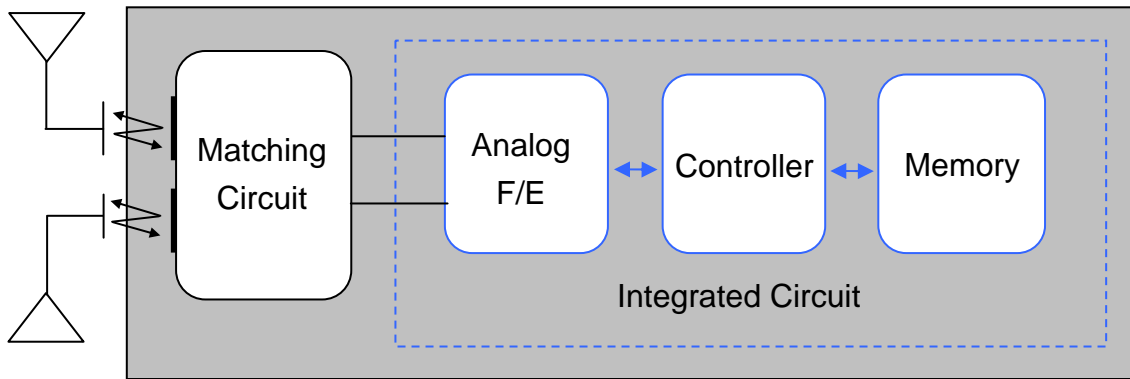
[Features]

- 1-1. Compliant to EPC global Class1Gen2
- 1-2. Ultra small package (3.2 x 1.6 x 0.55mm typ.) ensuring high durability
- 1-3. Supports wide frequency range from 860MHz to 960MHz, covering all global UHF frequency bands with one single design.
- 1-4. Impedance transformation function for more accurate matching with various antenna designs
 - 4 different variants available, which allow perfect matching to antenna impedance
- 1-5. Inductive coupling with antenna even through non-conductive adhesive
- 1-6. Wide mechanical mounting tolerance for assembly into RFID tag or inlay
- 1-7. Compatible with plastic molding process (150°C max. over 2 hours)
- 1-8. Fully Compatible with conventional SMT process (Soldering/Reflow)
- 1-9. High ESD protection function up to 2kV (MM)
- 1-10. 100% green material for full RoHS compliance
- 1-11. Internal 512bit user memory available

2. Standard & Memory Capacity

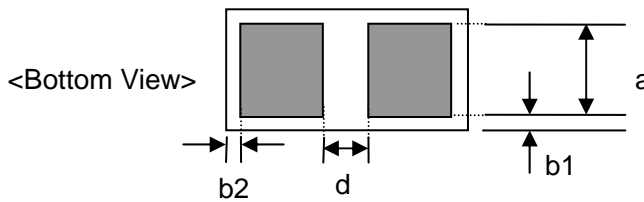
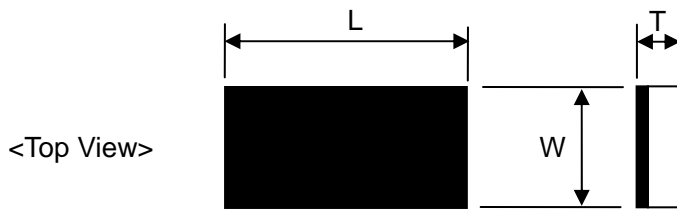
MAGICSTRAP® P/N \ Parameter	EPC Memory	User Memory	TID Memory
LXMS31ACNA – 009, 010, 011, 012	Up to 240 bits	512 bits	64 bits inc. 32 bits serial #
LXMS31ACNB – 019, 020, 021, 022	Up to 240 bits	-	64 bits inc. 32 bits serial #

3. Block Diagram



Mechanical Information

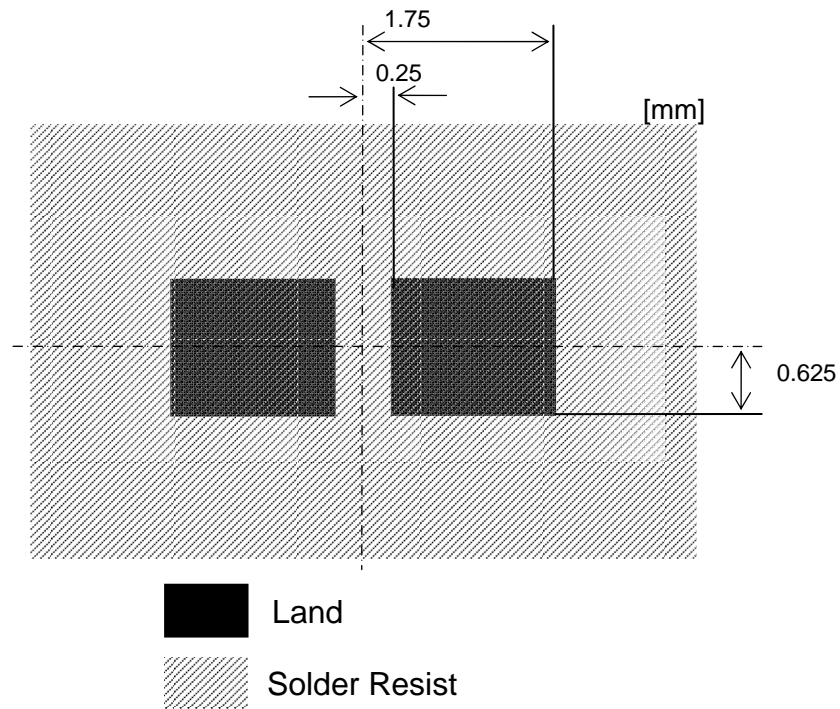
4-1. Dimensions



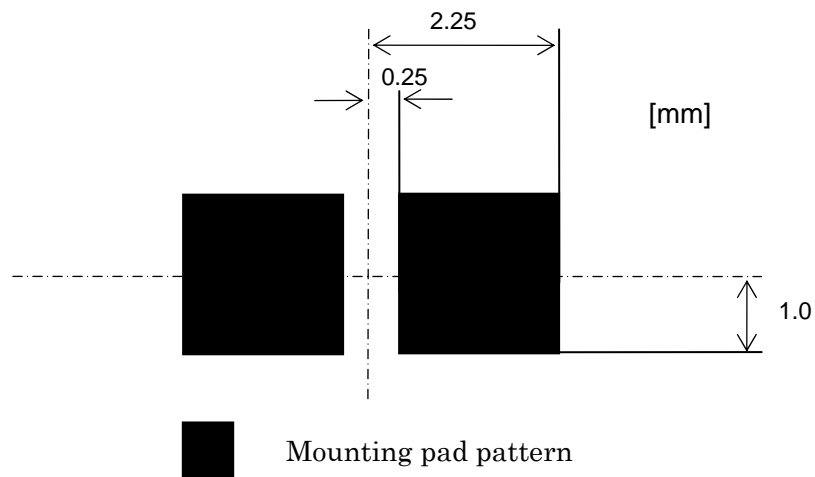
[mm]

Mark	Dimensions	Mark	Dimensions
L	3.2 ± 0.2	b1	0.18 ± 0.18
W	1.6 ± 0.2	b2	0.18 ± 0.18
T	0.7 max.	d	0.7 ± 0.1
a	1.25 ± 0.1	-	-

4-2. Recommended mounting pattern at antenna side for reflow soldering



4-3. Recommended mounting pattern at antenna side for the attachment by adhesive



Electrical Performance

5-1. Frequency range

865 – 955 MHz

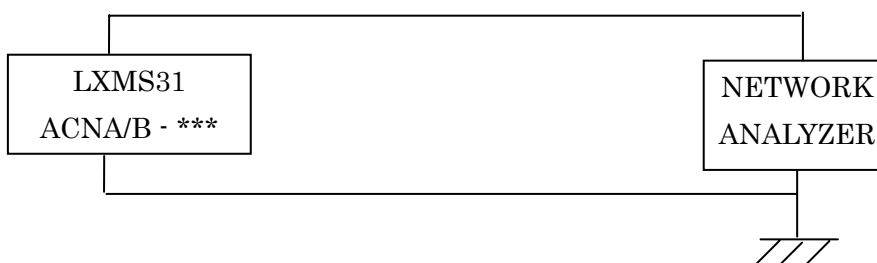
5-2. Minimum operating power

-8dBm

5-3. Electrical characteristics at minimum operating power (Ta=25°C, Unit : Ohm)

MAGICSTRAP® P/N			LXMS31ACNA	LXMS31ACNA	LXMS31ACNA	LXMS31ACNA
			- 009	- 010	- 011	- 012
Parameter			LXMS31ACNB	LXMS31ACNB	LXMS31ACNB	LXMS31ACNB
			- 019	- 020	- 021	- 022
Impedance value	@866.5	R	15	12	25	80
	MHz	X	-45	-107	-200	-405
	@915.0	R	25	12	25	80
	MHz	X	-45	-107	-200	-420
	@953.0	R	30	9	20	60
	MHz	X	-48	-105	-195	-425

5-4. Impedance Measurement Method



5-5. IC incorporated

NXP UCODE G2XM (PNs -009 to -012) or UCODE G2XL (PNs -019 to -022).

OPERATING TEMPERATURE

-40 °C ~ +85 °C

7. RoHS compliance

MAGICSTRAP® is compliant to RoHS directive.

8. Attachment of MAGICSTRAP®

MAGICSTRAP® has electrodes at the bottom side which enable an inductive coupling with the antenna pad when using a non-conductive adhesive as well as making a conductive connection with antenna.

< Note >

- This document is downloaded from the website of Murata Manufacturing Co., Ltd. Specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.