

Antenna Design Guide

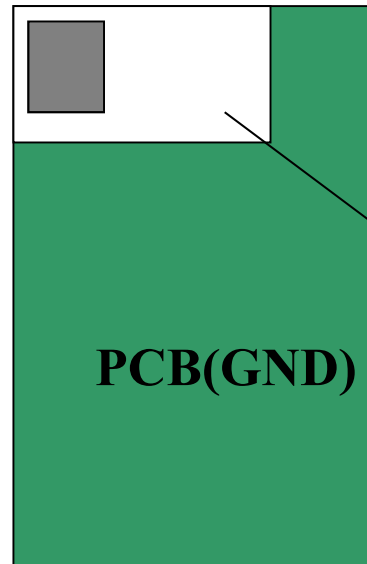
AH 086M555003



Ver. 1.1

TAIYO YUDEN Wide-Band Antenna

Confidential



3.1~8GHz : AH 086M555003



Keep out area
(No GND Area)

Keep Out Area
(No GND Area)

Recommended Size
9.5 x 16.5 mm (157mm²) or more

Antenna Layout Corner of PCB

Radiation Pattern Normal (Omni)

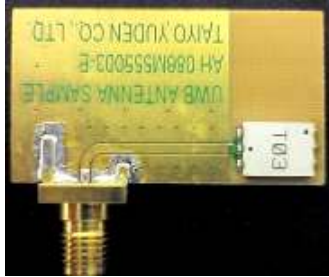
3.1 ~ 8GHz Multilayer Monopole Antenna (for UWB, WiMAX)

AH 086M555003

Confidential

Shapes

L= 8.0 ± 0.3 mm
 W= 6.0 ± 0.3 mm
 T= 1.0 ± 0.3 mm



*on Taiyo Yuden's Evaluation Board
 (36 x 20 mm)

*Element-GND Distance : 1.5 mm

Feature

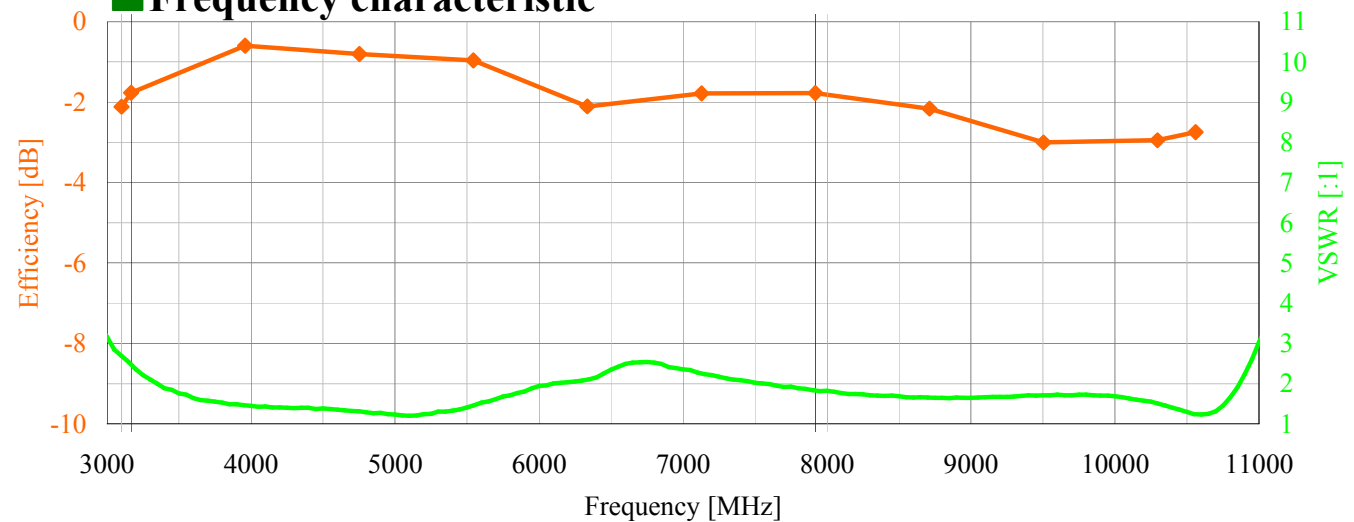
- * Small
- * Wide Band
- * High Performance



Actual data

Efficiency : -0.6 ~ -2.1dB (87 ~ 62%)
 Peak Gain : 2.6 ~ 0.7dBi
 @3168~7920MHz

Frequency characteristic



Electrical Characteristics

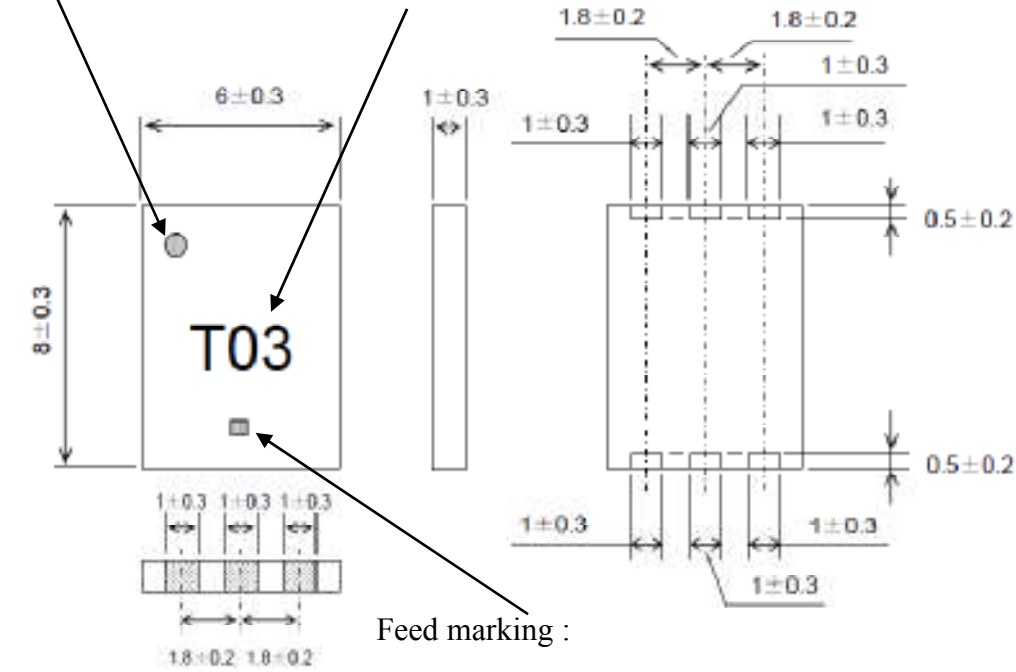
			3100MHz	3168MHz	3960MHz	4752MHz	5544MHz	6336MHz	7128MHz	7920MHz	8712MHz	9504MHz	10296MHz	10560MHz
Efficiency [dB]			-2.1 (61%)	-1.8 (66%)	-0.6 (87%)	-0.8 (83%)	-1.0 (80%)	-2.1 (62%)	-1.8 (66%)	-1.8 (66%)	-2.2 (61%)	-3.0 (50%)	-2.9 (51%)	-2.7 (53%)
Peak gain [dBi]			1.8	2.0	2.6	2.1	1.5	0.8	1.0	0.7	0.4	-0.8	-0.1	0.5
Average gain [dBi]	XY-plane	TX-H	-4.1	-4.0	-2.1	-2.5	-4.3	-6.1	-7.0	-6.1	-5.6	-4.9	-4.7	-4.1
		TX-V	-5.5	-5.7	-4.3	-3.5	-2.7	-3.9	-3.3	-2.6	-3.3	-7.7	-11.7	-12.4
	YZ-plane	TX-H	-3.8	-3.4	-2.7	-2.6	-2.3	-3.4	-3.2	-3.5	-4.1	-5.0	-4.3	-4.3
		TX-V	-14.3	-14.8	-20.1	-19.7	-14.1	-13.9	-11.8	-13.0	-13.4	-14.8	-17.6	-17.0
	ZX-plane	TX-H	-9.8	-9.5	-8.3	-6.5	-5.3	-7.5	-7.7	-6.8	-6.8	-9.7	-14.0	-13.8
		TX-V	-1.1	-0.7	0.5	-0.9	-2.3	-3.5	-2.6	-3.6	-3.6	-3.2	-2.0	-1.6

1. External Dimensions

Direction marking : 0.6mmφ

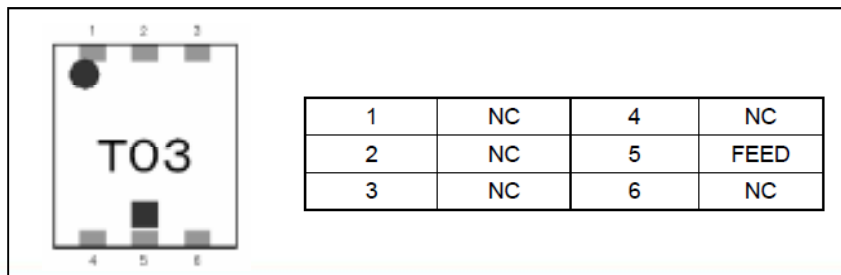
An intestinal pattern code:

1.6mm height 3-digit alpha numeric

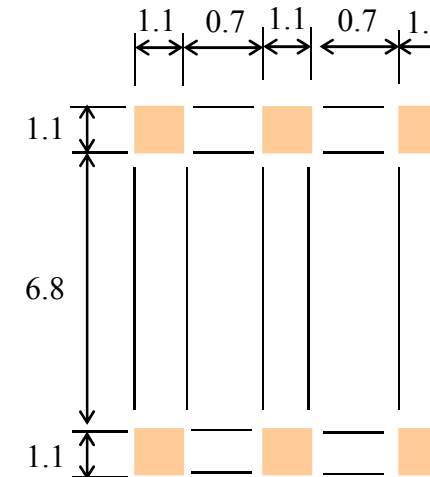


Feed marking :

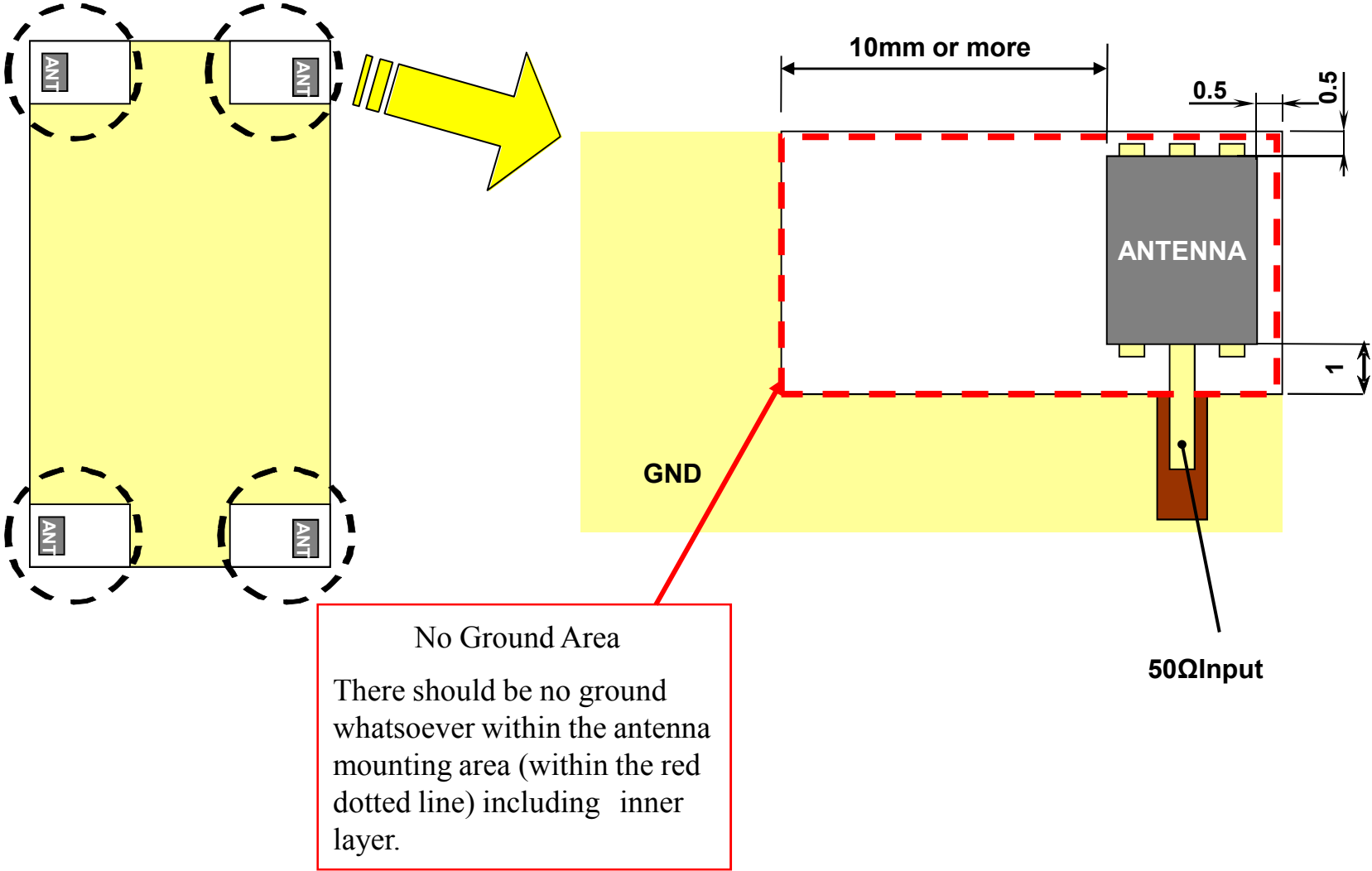
Input terminal is prescribed $0.5\text{mm} \square$



2. Recommended Land Pattern



3-1. Recommended Pattern Layout Design



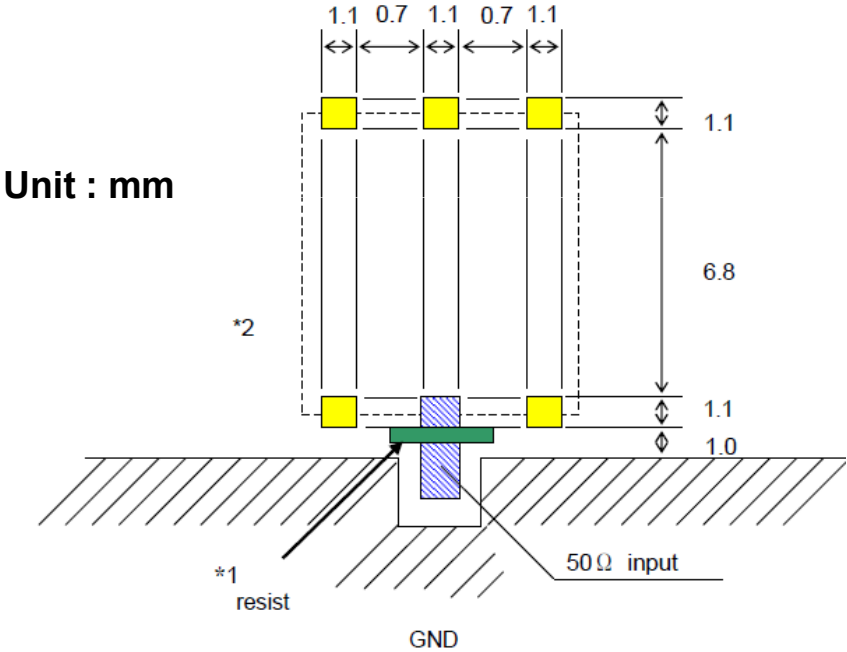
Recommended Design

Confidential

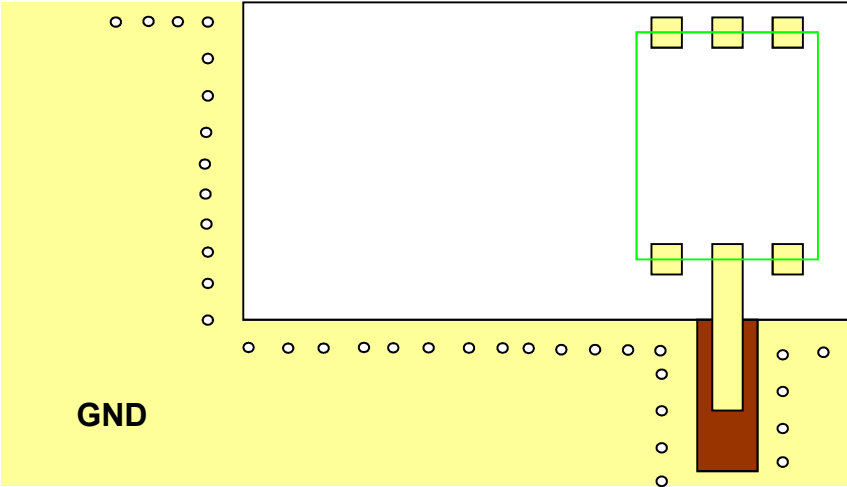
3-2. Precautions



- I . Surface GND layer around the antenna area should be connected with inner GND layer via through hole.
- II . Thickness of PCB can be flexible.

Recommended land pattern



Example of through hole

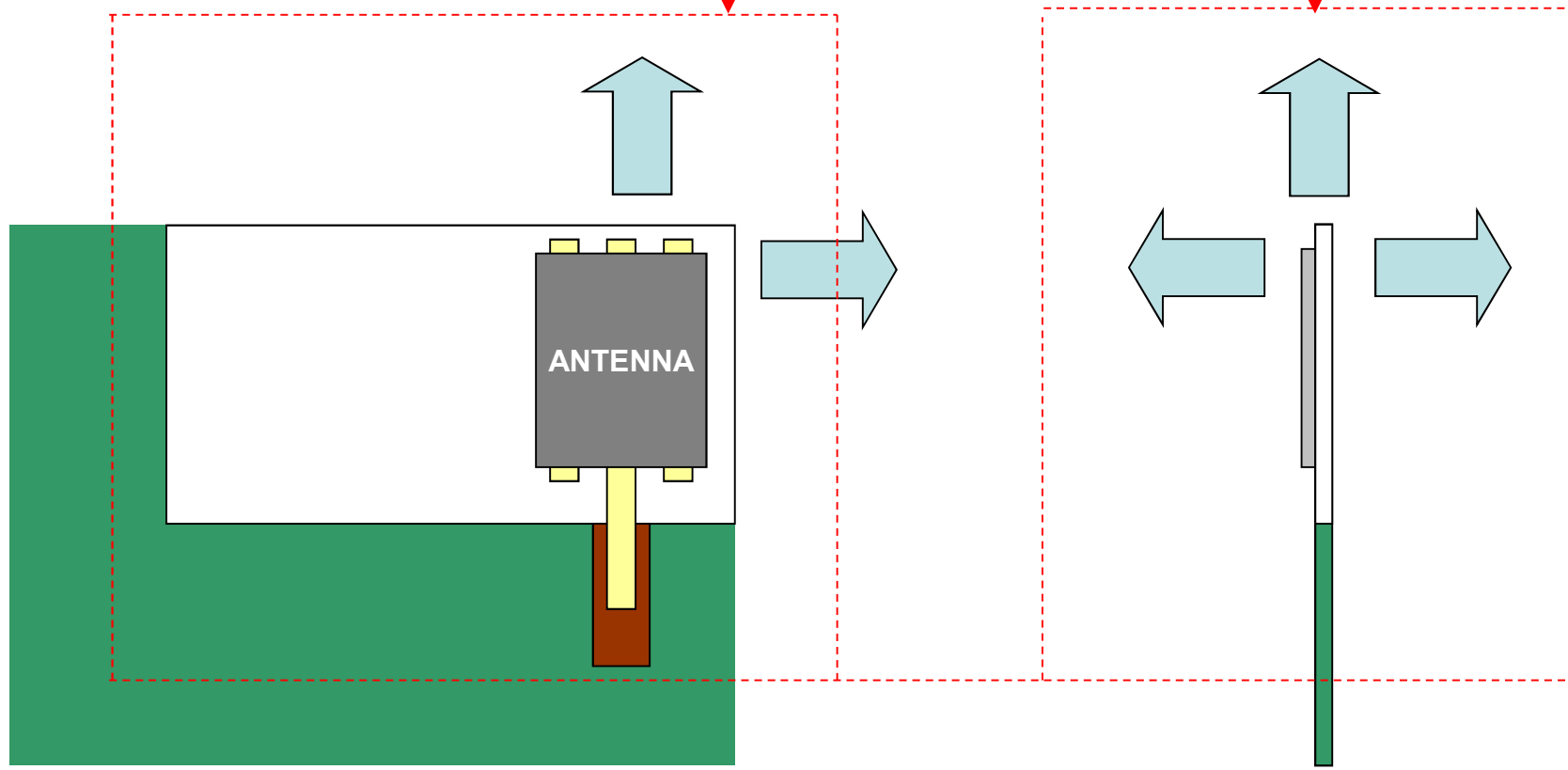


-  Land for input terminal
-  Land for NC terminal

- *1: Soldering area shall be ensured by the solder resist.
- *2: Do not arrange the surface pattern and internal layer pattern on antenna mounting area and its surrounding area.

3-3. Metal avoidance area

Please do not set close to a metal housing, paint including the metal, board GND, the metal chassis, etc.



Front or Back

Side