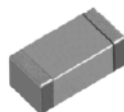


Antenna Design Guide

AH 212M245001



電子デバイスで
eCOをつくる、
太陽誘電。

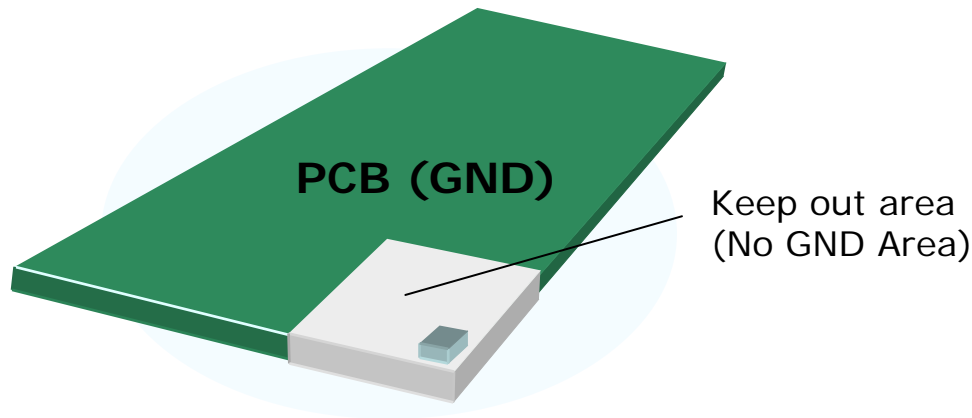


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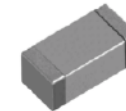
TAIYO YUDEN

<http://www.ty-top.com>

2.4GHz Monopole Antenna



2.4GHz: AH 212M245001



Keep Out Area
(No GND Area)

Recommended Size

5 x 8 mm (40mm²) or more
(Larger area provides the better performance.)

Antenna Layout

Corner of PCB

Radiation Pattern

Normal (Omni)

Data Sheet



Shapes

L = 2.0 ± 0.3 mm
W = 1.25 ± 0.2 mm
T = 0.85 ± 0.2 mm

Feature

- * Ultra Small
- * Low Profile



Actual data

Efficiency : -1.8dB (66%)
Peak Gain : 0.9dBi @2450MHz
Average Gain : -0.9dBi (ZX plane-Vertical polarization)



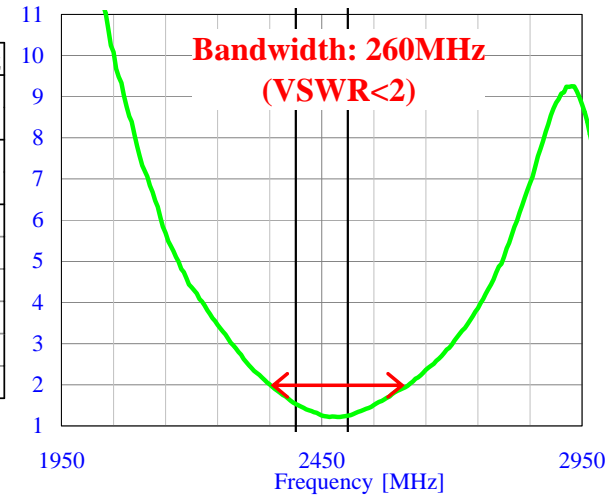
*on Taiyo Yuden's Evaluation Board
(52 x 10 mm)

*Element-GND Distance : 4.0 mm

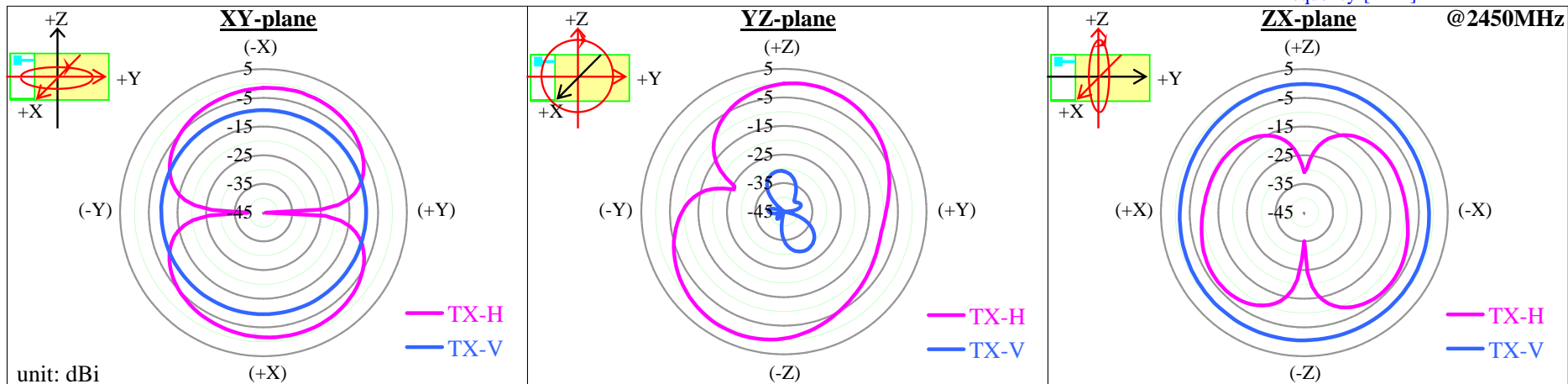
Electrical Characteristics

			2400MHz	2450MHz	2500MHz
Efficiency [dB]			-1.9 (64%)	-1.8 (66%)	-1.7 (68%)
Peak gain [dBi]			0.9	0.9	1.3
Average gain [dBi]	XY-plane	TX-H	-4.1	-4.0	-3.9
		TX-V	-9.8	-9.4	-8.7
	YZ-plane	TX-H	-3.0	-3.0	-2.9
		TX-V	-35.7	-35.1	-34.9
	ZX-plane	TX-H	-10.1	-9.8	-9.3
		TX-V	-1.0	-0.9	-0.9

VSWR



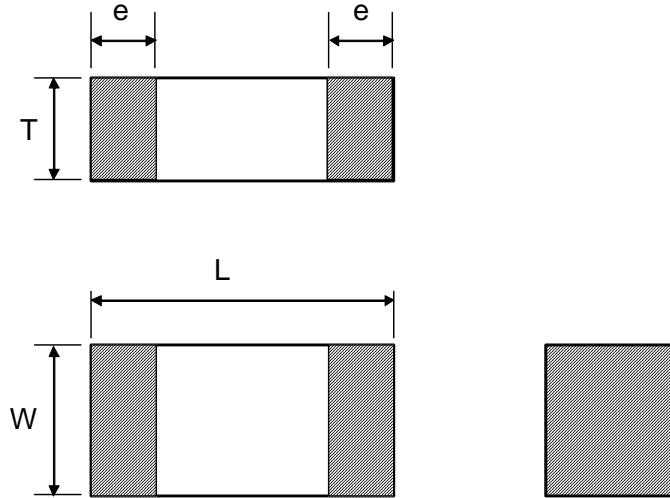
Radiation Pattern



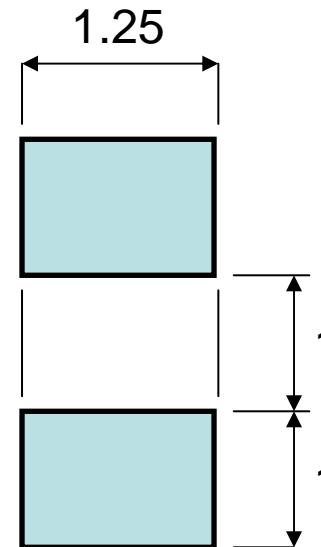
Dimensions and Land pattern



External Dimensions



Recommended Land Pattern



Unit : mm

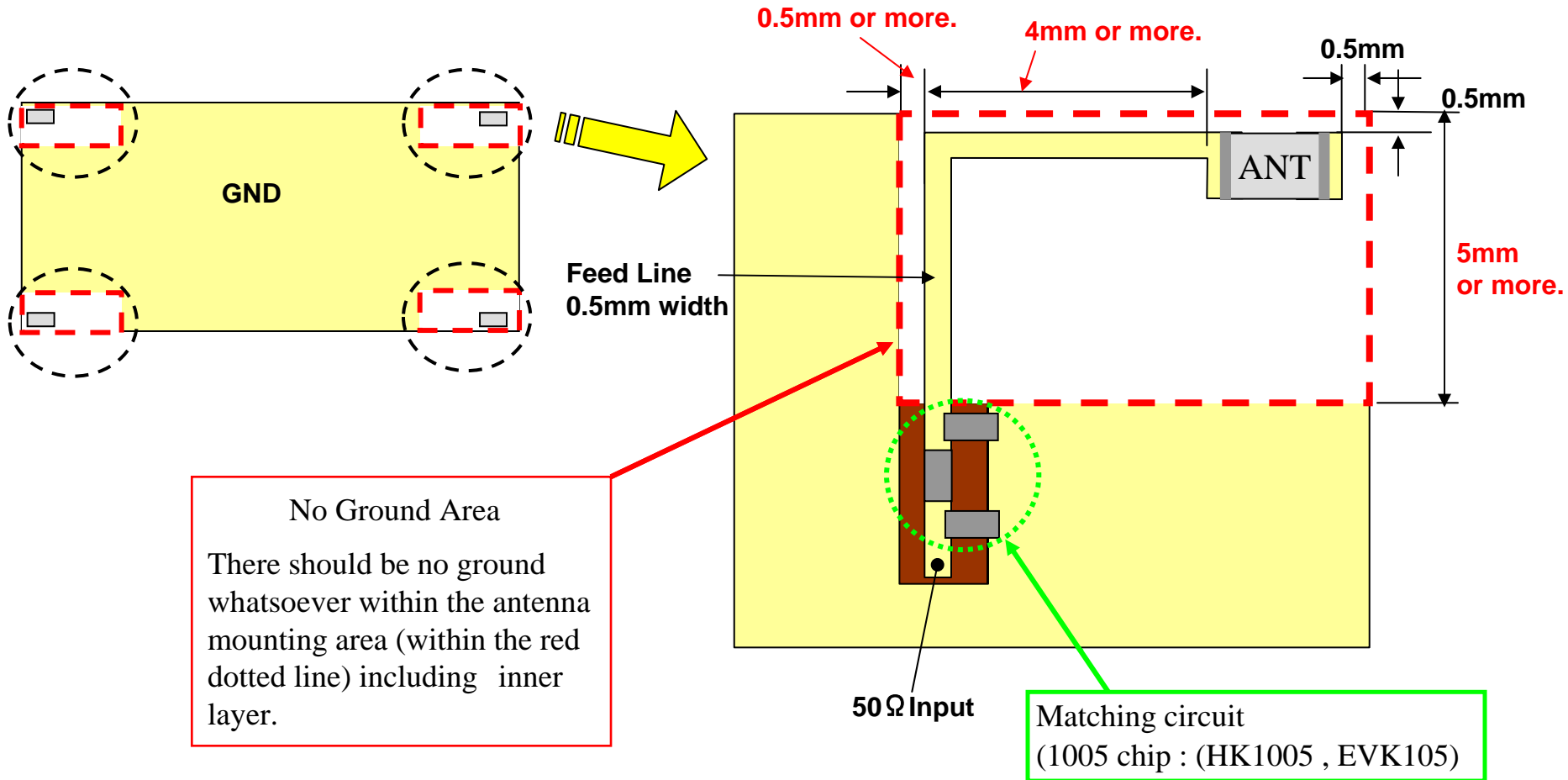
	L	W	T	e
Size	2.0	1.25±0.2	0.85±0.2	0.5±0.3
	+0.3 -0.1			

[Unit: mm]

Design Guide



Recommended Pattern Layout



© Our recommendation is mounting position had better on the corner of PCB.

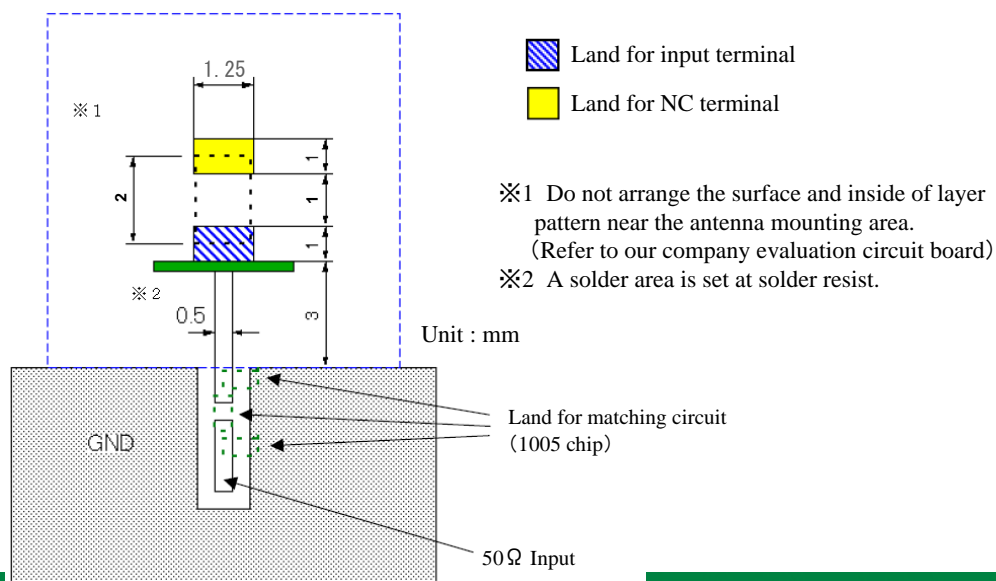
Design Guide



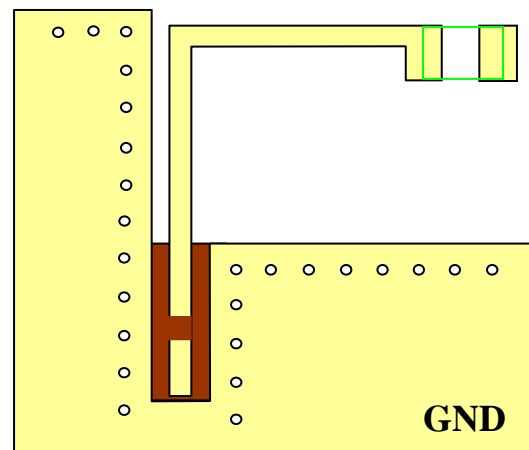
Precautions

- I. Surface GND layer around the antenna area should be connected with inner GND layer via through hole.
- II. Matching circuit line should be designed as $50\ \Omega$.
- III. Thickness of PCB can be flexible.
- IV. Matching circuit should be placed as close as possible to the antenna.
- V. Use of Taiyo Yuden HK1005 and EVK105 series as matching components are highly recommended for the optimized result.
- VI. Matching values may be required to get readjusted contingent upon the condition such as proximity to the metal and/or chassis, board size, etc.

Recommended land pattern



Example of through hole



Design Guide

Metal Avoidance Area

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

