

High Frequency Ceramic Solutions

1.585GHz Global Navigation (GPS, GLONASS, Beidou, Galileo) SMD Chip Antenna

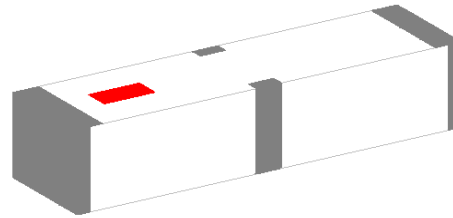
P/N 1582AT54A0045

Detail Specification: 5/26/2020

Page 1 of 5

General Specifications

Part Number	1582AT54A0045
Frequency (MHz)	1560 - 1605
Peak Gain (YZ-total)	1.5 dBi typ.
Average Gain (YZ-total)	-0.5 dBi typ.
Return Loss	9.5 dB min.
Impedance	50 Ω
Power Capacity	3W max. (CW)
Reel Quantity	500 pcs
Operating Temperature	-40 to +85°C



Recommended Storage Conditions of uninstalled product still on T&R	+5 to +35 °C Humidity 45~75%RH 18 months max.
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Measured Efficiencies

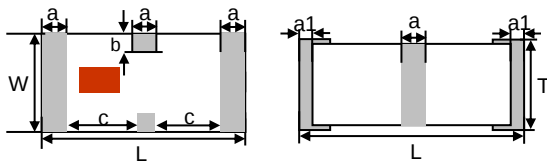
MHz	1565	1575	1585	1595	1602
%	77	80	86	86	82

Part Number Explanation

P/N Suffix	Packaging Style (orderable p/n)	Bulk	Suffix = S	e.g. 1582AT54A0045S
		T & R	Suffix = E	e.g. 1582AT54A0045E
	Termination style	100% Tin	Suffix = E or S	e.g. 1582AT54A0045(E or S)
	Evaluation Board	1582AT54A0045-EB1SMA		

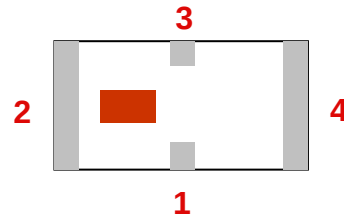
Mechanical Dimensions

	In	mm
L	0.591 $\pm$ 0.008	15.00 $\pm$ 0.20
W	0.157 $\pm$ 0.008	4.00 $\pm$ 0.20
T	0.126 $\pm$ 0.008	3.20 $\pm$ 0.20
a	0.039 $\pm$ 0.008	1.00 $\pm$ 0.20
a1	0.020 $\pm$ 0.008	0.50 $\pm$ 0.20
b	0.020 $\pm$ 0.008	0.50 $\pm$ 0.20
c	0.236 $\pm$ 0.008	6.00 $\pm$ 0.20



Terminal Configuration

No.	Function
1	Feeding Point
2	GND
3	NC
4	GND



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<http://www.johansontechnology.com>

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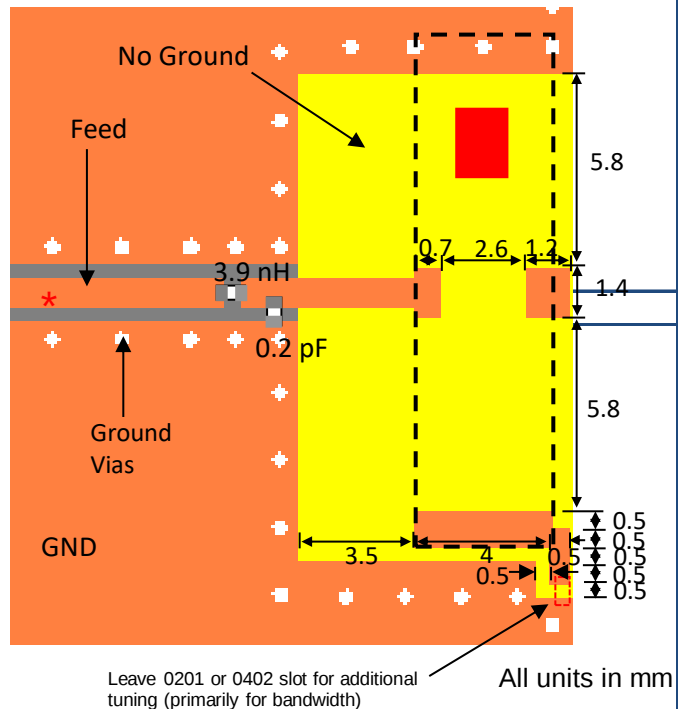
Detail Specification: 5/26/2020

Page 2 of 5

GPS-only Mounting Considerations

* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness. Grounded CPWG will provide best results!

Note: It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values above are used when antenna is mounted on Johanson's evaluation board. The matching values on client's PCB will be different. Go to:
<https://www.johansontechnology.com/tuning> and see how to obtain the new values.



Want the layout file of this? Send us a message at:
<https://www.johansontechnology.com/ask-a-question>

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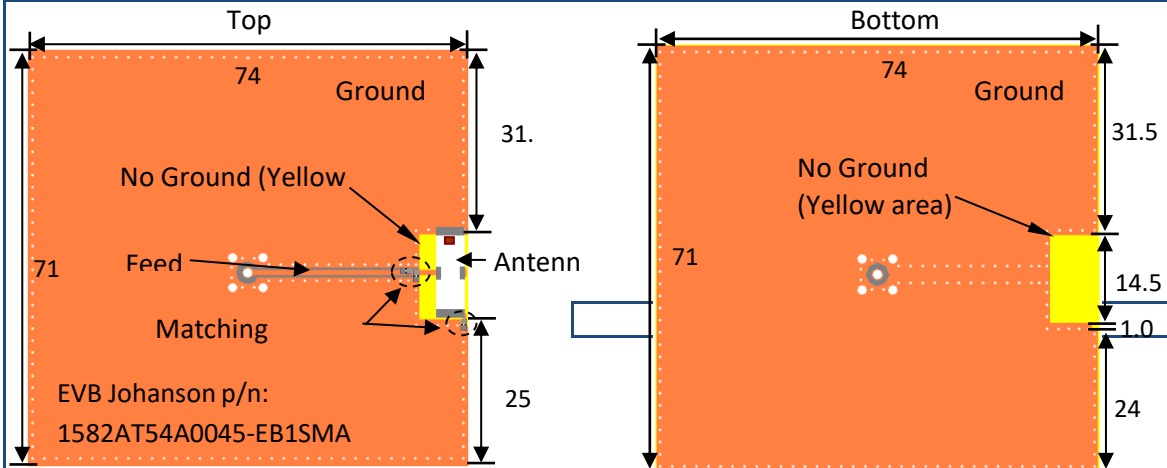
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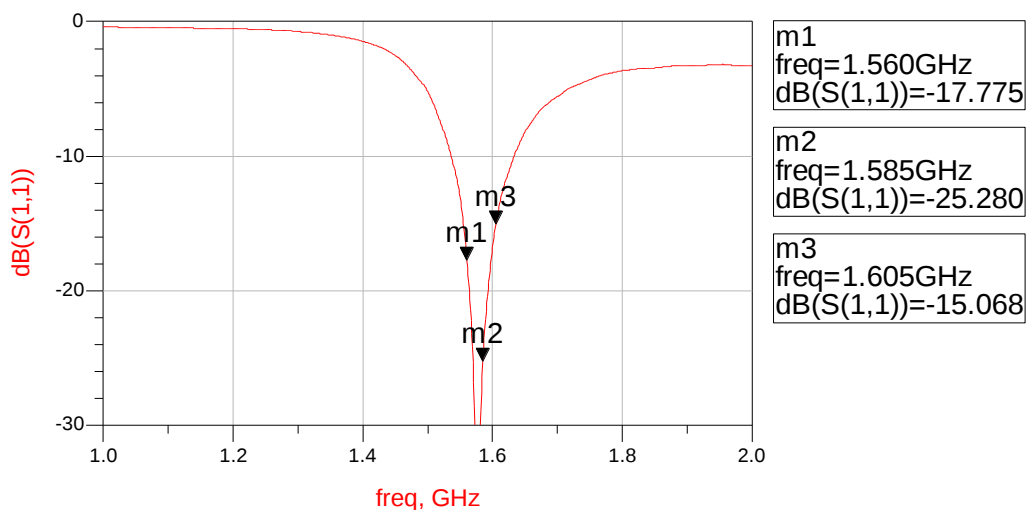
Page 3 of 5

Mounting Considerations



Typical Electrical Characteristics (T=25°C)

Evaluation Board Return Loss



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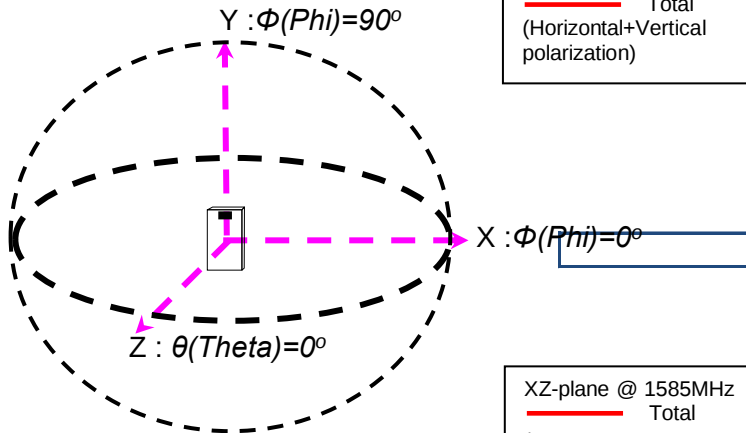
P/N 1582AT54A0045

Detail Specification: 5/26/2020

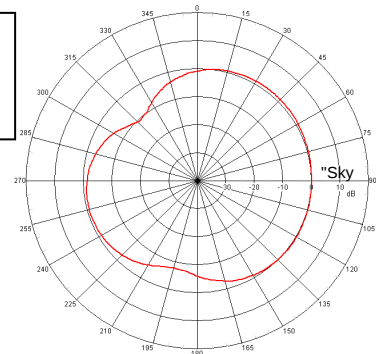
Page 4 of 5

Evaluation Board Typical Electrical Characteristics (T=25°C)

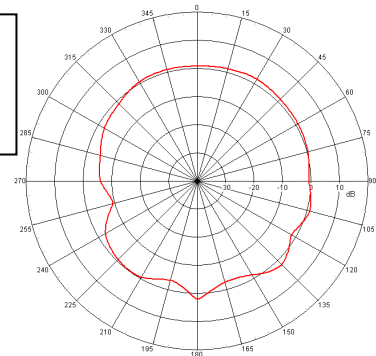
Typical Radiation Patterns



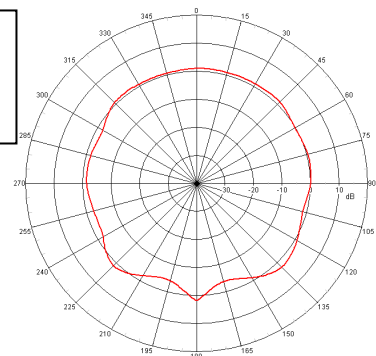
XY-plane @ 1585MHz
— Total
(Horizontal+Vertical
polarization)



XZ-plane @ 1585MHz
— Total
(Horizontal+Vertical
polarization)



YZ-plane @ 1585MHz
— Total
(Horizontal+Vertical
polarization)



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Page 5 of 5

Antenna layout review, tuning, and characterization services

<https://www.johansontechnology.com/ipc-antenna-services>

More SMD Chip Antennas at:

<https://www.johansontechnology.com/antennas>

Soldering Information

<https://www.johansontechnology.com/ipcsoldering-profile>

Antenna layout and tuning techniques (How to obtain the new antenna matching values)

<https://www.johansontechnology.com/tuning>

Packaging information

<https://www.johansontechnology.com/tape-reel-packaging>

RoHS Compliance

<https://www.johansontechnology.com/rohs-compliance>

MSL Info

<https://www.johansontechnology.com/msl-rating>

P/N Explanation and Breakdown

<https://www.johansontechnology.com/ipc-pn-explained>

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