

"High Frequency Ceramic Solutions"

L2 Band 1.227GHz GPS Internal Chip Antenna

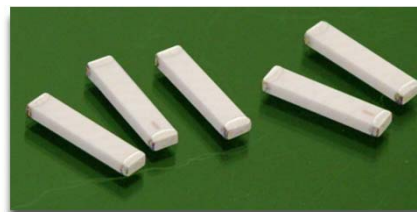
P/N 1227AT45A0042

Detail Specification: 2/5/2014

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General Specifications

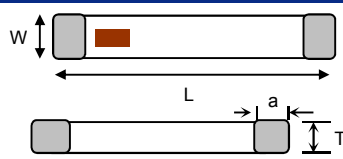
Part Number	1227AT45A0042
Frequency Range (MHz)	1227.6 ± 21MHz
Operating Frequency (MHz)	1206 - 1249 (+10MHz guard band)
Peak Gain	1.0 dBi typ. (XZ-V)
Average Gain	-2.0 dBi typ. (XZ-V)
Return Loss	9.5 dB min.
Impedance	50 Ω
Power Capacity	3W max. (CW)
Recommended Storage Conditions	+5 ~ +35 °C, Humidity 45~75%RH



Operating Temperature	-40 to +85°C
Shelf Life	18 Months
Reel Quantity	1,000

Mechanical Dimensions

	In	mm
L	0.374 ± 0.008	9.50 ± 0.20
W	0.079 ± 0.008	2.00 ± 0.20
T	0.047 +.004/-0.008	1.20 +0.1/-0.2
a	0.020 ± 0.012	0.50 ± 0.30

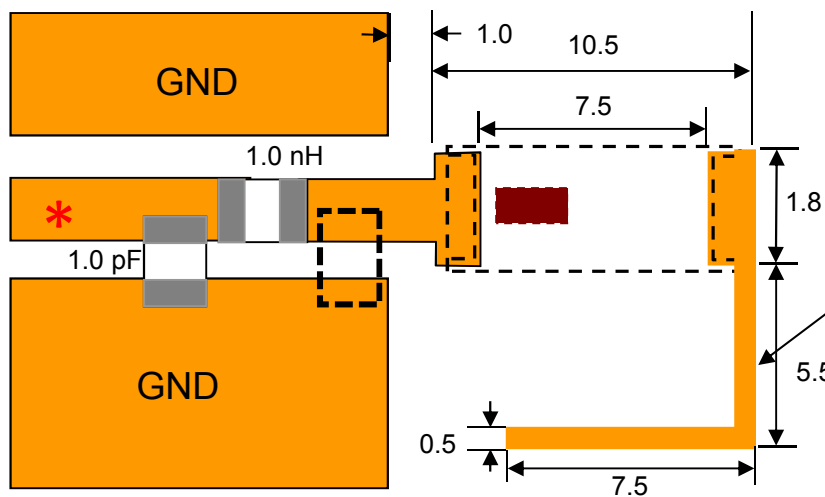


Terminal Configuration

No.	Function
1	Feeding Point
2	NC (to trace)



Mounting Considerations (all units in mm)



We offer 2 free layout reviews as well as antenna tuning and characterization services (lab fee may apply). Go to page 2 for details.

The *length* of this PCB trace element must be followed, however the *shape* may be modified to conform to the designer's particular layout

* Line width should be designed to match 50Ω characteristic impedance (co-planar waveguide), depending on PCB material and thickness. The matching values above only apply to Johanson's evaluation board, see page two for more details or go to: www.johansontechnology.com/tuning

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com

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Ver 2.1

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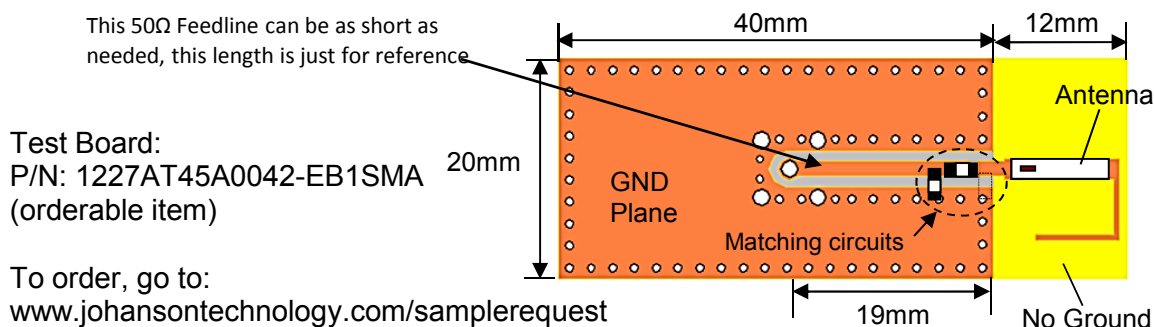
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Mounting Considerations

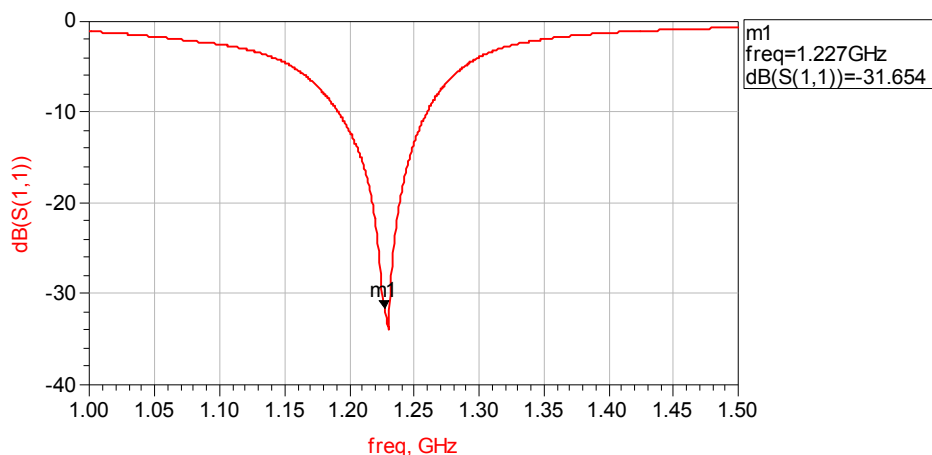
Note: It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values here are used when antenna is mounted on Johanson's evaluation board. The matching values on client's PCB will be different, go to: [johansontechnology.com/tuning](http://www.johansontechnology.com/tuning) and see how to obtain the new values. Contact our RF Applications Eng Team at: <http://www.johansontechnology.com/component/techquestion>



We offer antenna layout/gerber reviews, PCB tuning, optimization, and characterization services, go to: www.johansontechnology.com/ipcantennaservices for details and instructions

Typical Electrical Characteristics (T=25°C)

Return Loss / With Matching Circuits



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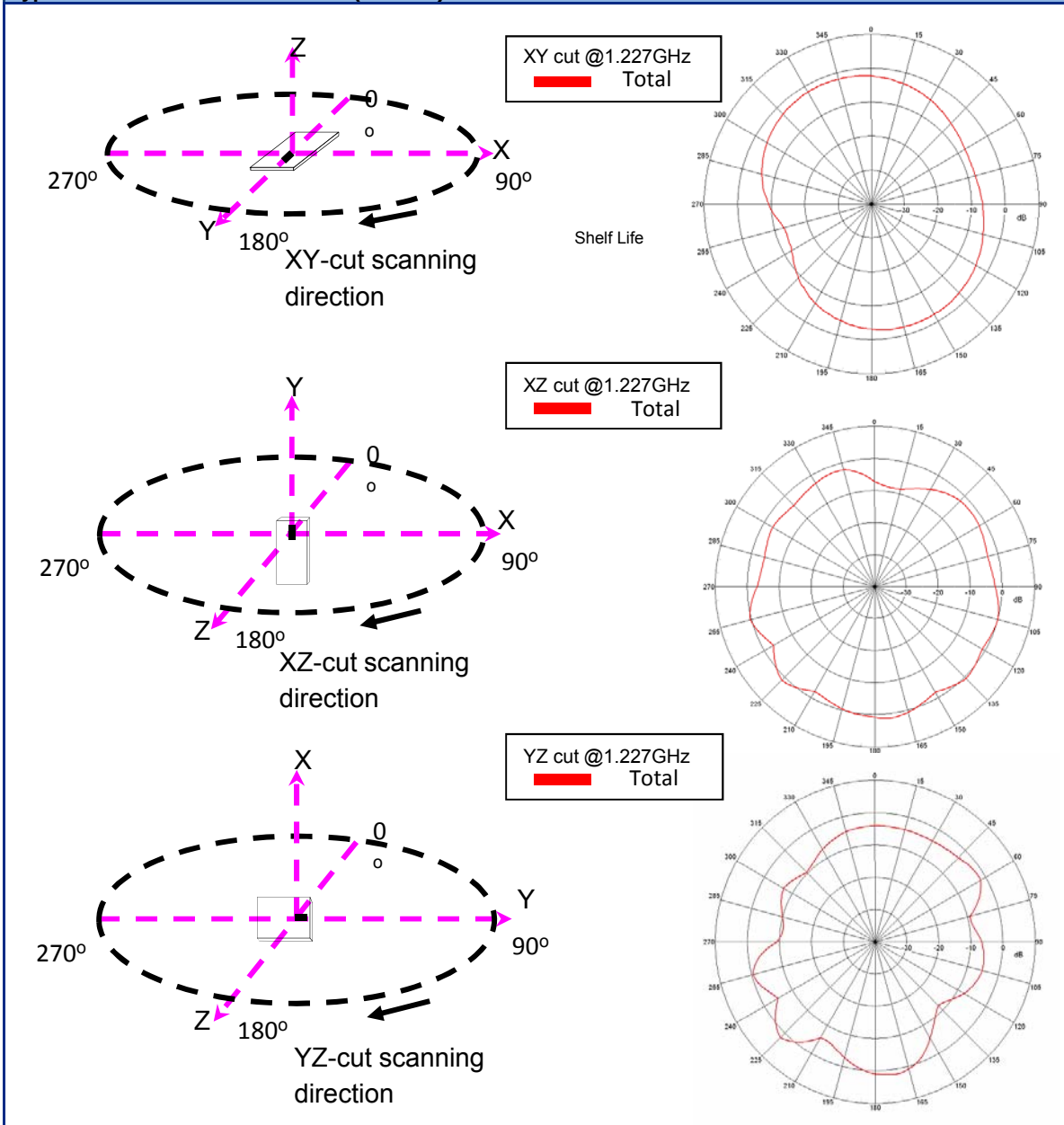
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Typical Electrical Characteristics (T=25°C) Radiation Patterns



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Part Number Explanation

P/N Suffix	Packing Style	Bulk (loose pieces)	Suffix = S	eg. 1227AT45A0042
		T & R	Suffix = E	eg. 1227AT45A0042
		T & R (Reverse)	Suffix = R	eg. 1227AT45A0042R (MOQ Applies)
		100% Tin	Suffix = None	eg. 1227AT45A0042(S, E, R)
	Eval Board (1-port SMA antenna test boards)	1227AT45A0042-EB1SMA (Page 2)		
	More Details	www.johansontechnology.com/ipc-pn-explained		

Storage Conditions and Shelf Life (On T&R or Bulk)

Temperature:	+5C to +35°C	Shelf Life:	18 months max.
Relative Humidity:	45 to 75%		

Packaging information

www.johansontechnology.com/ipcpackaging.html

Soldering Information

www.johansontechnology.com/ipcsoldering-profile

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

www.johansontechnology.com/tuning

Antenna layout review, tuning, and characterization services

www.johansontechnology.com/ipcantennaservices

RoHS Compliance

www.johansontechnology.com/technical-notes/rohs-compliance.html

MSL Info

www.johansontechnology.com/technical-notes/msl-rating.html

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