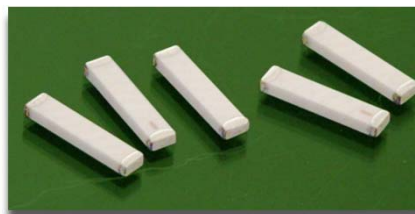


"High Frequency Ceramic Solutions"

L2 Band 1.227GHz GPS Internal Chip Antenna Detail Specification: 2/5/2014	P/N 1227AT45A0042 Page 1 of 4
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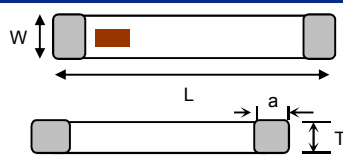
General Specifications	
Part Number	1227AT45A0042
Frequency Range (MHz)	1227.6 ± 21MHz
Operating Frequency (MHz)	1206 - 1249 (+10MHz guard band)
Peak Gain	1.0 dBi typ. (XZ-V)
Average Gain	-2.0 dBi typ. (XZ-V)
Return Loss	9.5 dB min.
Impedance	50 Ω
Power Capacity	3W max. (CW)
Recommended Storage Conditions	+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/-.008	1.20 +0.1/-0.2
a	0.020 ± 0.012	0.50 ± 0.30

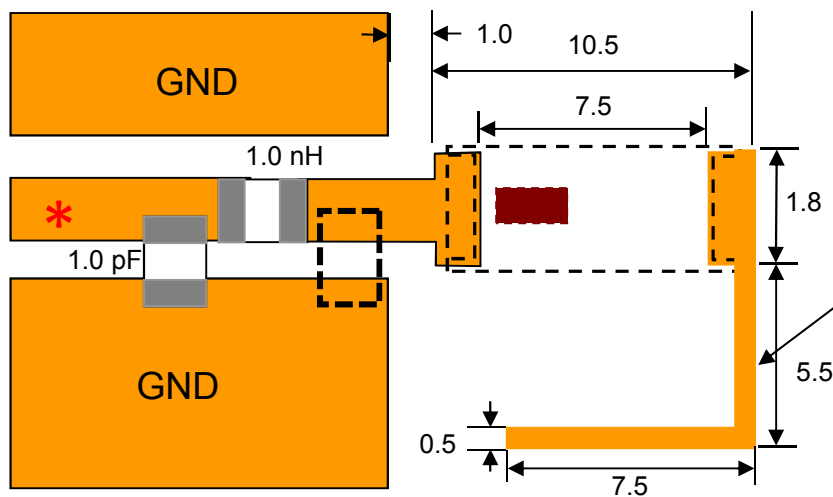
The diagram illustrates the mechanical dimensions of a component. The top view shows a rectangular part with a central slot. The total length is labeled 'L', the width of the slot is 'w', and the thickness of the part is 'T'. The side view shows the distance 'a' from the end of the part to the start of the slot.



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.
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L2 Band 1.227GHz GPS Internal Chip Antenna

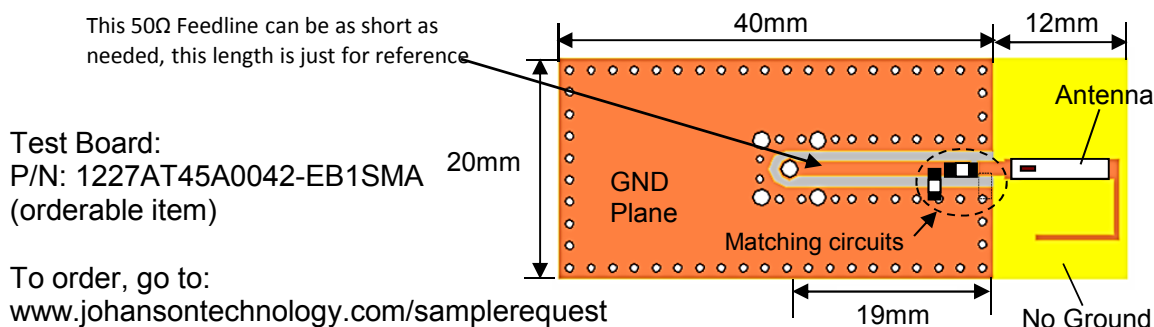
P/N 1227AT45A0042

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Mounting Considerations

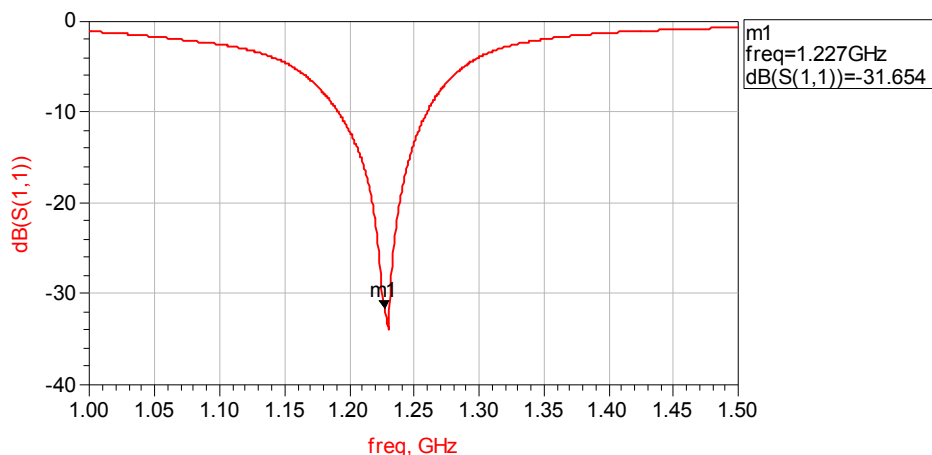
Note: It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values here are used when antenna is mounted on Johanson's evaluation board. The matching values on client's PCB will be different, go to: [johansontechnology.com/tuning](http://www.johansontechnology.com/tuning) 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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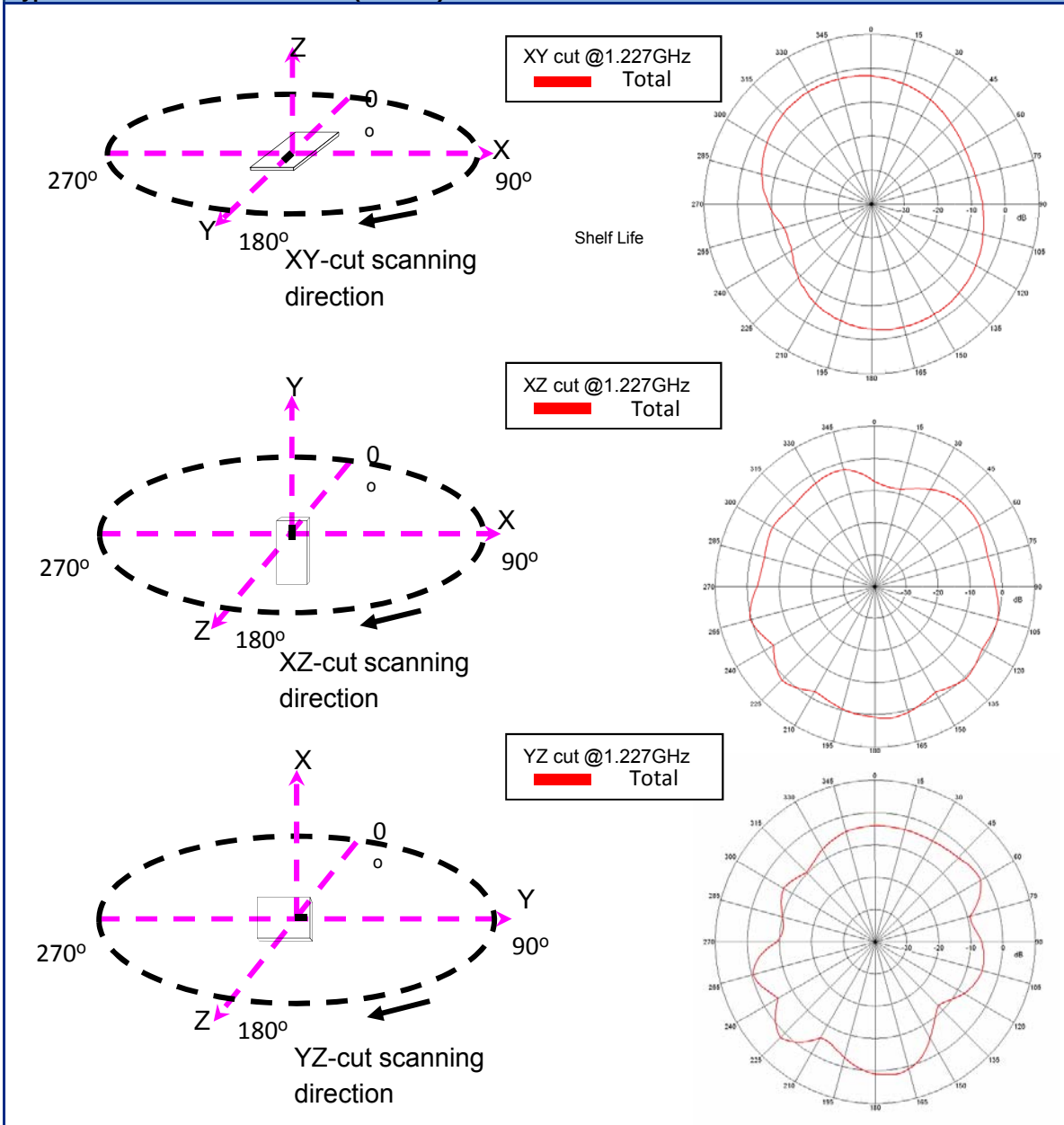
L2 Band 1.227GHz GPS Internal Chip Antenna

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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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