

High Frequency Ceramic Solutions

Sub-GHz Impedance Matched Balun + LPF integrated Passive Component for Microchip SAM R30

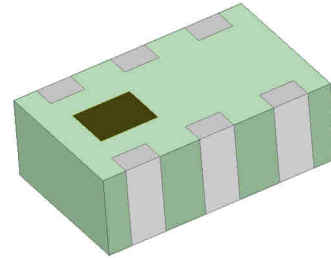
Detail Specification: 1/27/2017

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For the Full App Note and Layout Files, go to: www.johansontechnology.com/microchip

General Specifications

Part Number	0896BM15A0032
Frequency (MHz)	863 - 928
Unbalanced Impedance	50 Ω
Balanced Differential Impedance	Conjugate match to Microchip (Atmel) SAM R30
Insertion Loss	1.5 dB Typ (1.7dB max.)
Return Loss (dB)	12dB Typ (9.5 min.)
Attenuation Differential mode (dB):	
40 Typ. (30 min.) @ 1726-1856 MHz	
49 Typ. (40 min.) @ 2589-2784 MHz	
46 Typ. (38 min.) @ 3452-3712 MHz	



Phase Difference (deg.)	180 $\pm$ 10
Amplitude Difference	2.0 max.
Power Capacity	1W max (CW)
Qty/Reel (pcs)	4,000
Operating Temp. Range	-40 - +85°C
Storage Temp. Range	-40 - +85°C
Recommended Storage Conditions of Unused Product on T&R	+5 - +35 °C, Humidity 45-75%
Storage Period	18 months max.

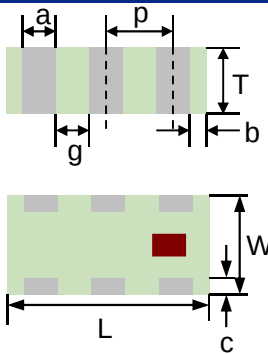
Do you need help selecting the best sub-GHz antenna for your application? Send us a message at: www.johansontechnology.com/ask-a-question

Part Number Explanation

P/N Suffix	Packaging Style	Bulk	Suffix = S	E.g. 0896BM15A0032S
		T & R	Suffix = E	E.g. 0896BM15A0032E
	Termination Style	100% Tin	Suffix = None	E.g. 0896BM15A0032(E or S)

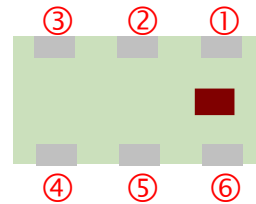
Mechanical Dimensions

Inches		Millimeter	
L	0.079 $\pm$ 0.004	2.00 $\pm$ 0.1	
W	0.049 $\pm$ 0.004	1.25 $\pm$ 0.1	
T	0.028 $\pm$ 0.004	0.70 $\pm$ 0.1	
a	0.012 $\pm$ 0.004	0.30 $\pm$ 0.1	
b	0.008 $\pm$ 0.004	0.20 $\pm$ 0.1	
c	0.012 $\pm$ 0.004/-0.008	0.30 $\pm$ 0.1/-0.2	
g	0.014 $\pm$ 0.004	0.35 $\pm$ 0.1	
p	0.026 $\pm$ 0.002	0.65 $\pm$ 0.05	



Terminal Configuration

No	Function	No	Function
1	Unbalanced Port	4	Balanced Port
2	GND	5	GND
3	Balanced Port	6	GND



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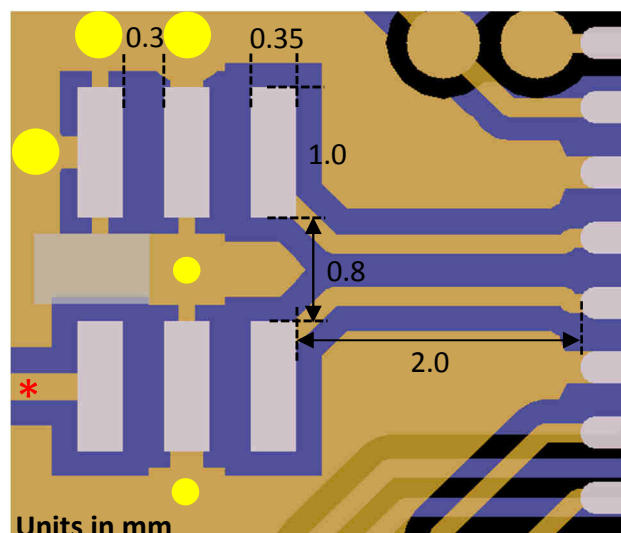
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Mounting Considerations



Units in mm

* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

■ GND

■ Footprint

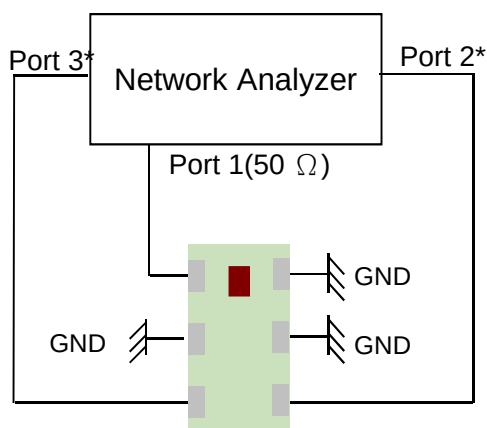
● GND Vias (ϕ 0.35/ ϕ 0.2)

Vias are important for proper harmonic

Would you like us to provide the layout files of the Microchip chipset + 2450BM15A0032? Review your layout for free? Please go to this link to contact our RF team: www.johansontechnology.com/ask-a-question "Applications Engineering" on the drop down question type

Do you need the layout/gerber files of the above? Go to: www.johansontechnology.com/microchip or send us message to review your layout at: <http://www.johansontechnology.com/ask-a-question>

Measuring Diagram



Port 1: Unbalanced Port
Ports 2 and 3: Balanced Port

$$IL = S_{ds21}$$

$$RL = S_{ss11}$$

$$\text{Amp_balance} = \text{dB}(S(2,1)/S(3,1))$$

$$\text{Phase_balance} = \text{Phase}(S(2,1)/S(3,1))$$

*Impedance for ports 2 and 3
= Conjugate to Balanced Impedance/2

You can download the s-parameters at: <http://www.johansontechnology.com/microchip>

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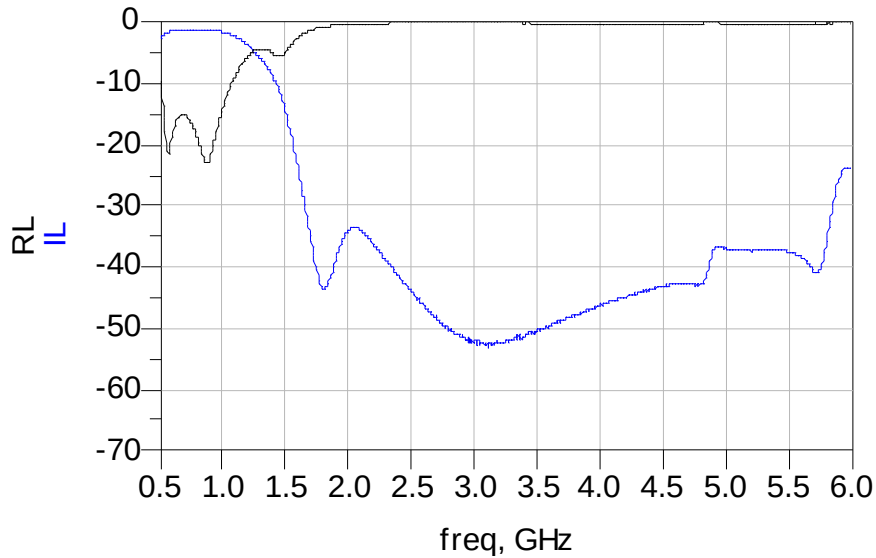
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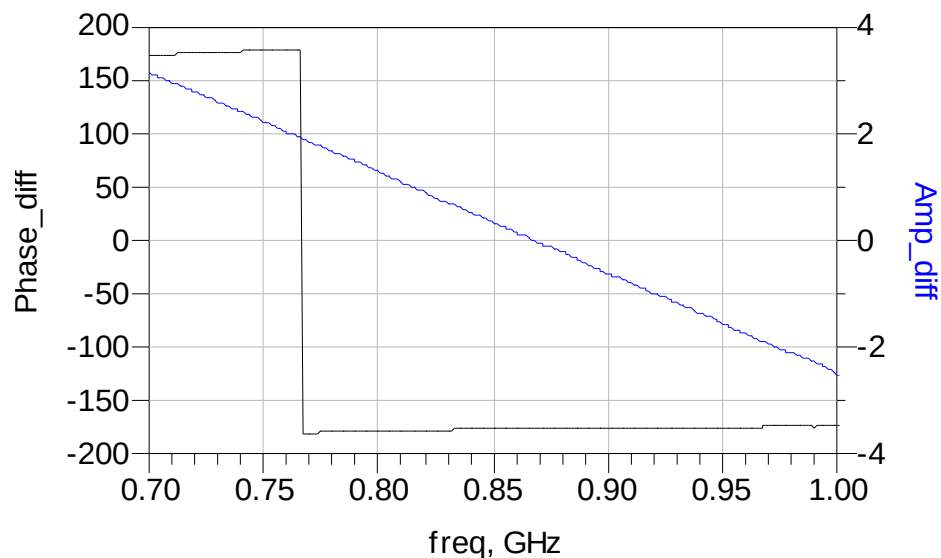
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Typical Electrical Characteristics (T=25°C)

Insertion and Return Loss



Amplitude and Phase Balance



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Application Notes, Layout Files, and more

<http://www.johansontechnology.com/microchip>

Packaging information

www.johansontechnology.com/tape-reel-packaging

Soldering Information

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MSL Info

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Recommended Storage Condition and Max Shelf Life

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