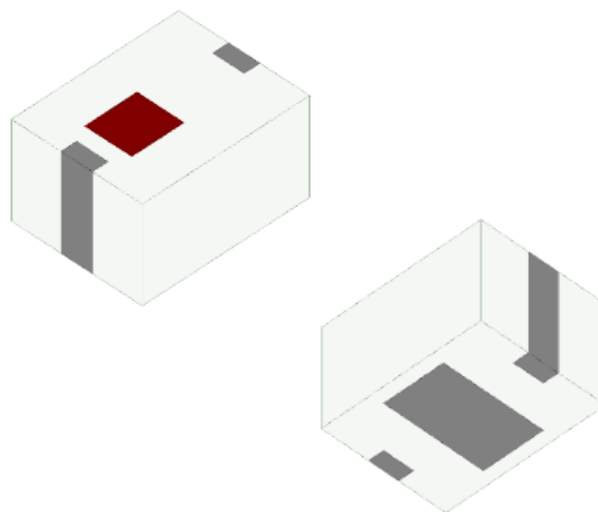




1.98 GHz Band Pass Filter

- 1680 - 2295 MHz passband
- Best for FDD and TDD LTE band applications
- Low insertion loss
- High out-of-band rejection
- SMD, EIA 1210
- RoHS complaint



General Specifications^{1 2}

Insertion Loss (dB)	1680 - 2295 MHz	2.0 Typ.	2.5 Max.
Return Loss (dB)	1680 - 2295 MHz	12 Min.	
Group Delay (ns)	1680 - 2295 MHz		2 Max.
Group Delay Ripple (ns)	1680 - 2295 MHz		1 Max.
Ripple (dB)	1680 - 2295 MHz		1.5 Max.
Attenuation (dB)	0 - 1400 MHz	30 Min.	
	2620 - 2705 MHz	30 Min.	
	2705 - 2740 MHz	40 Min.	
	2740 - 3115 MHz	35 Min.	
	3115 - 3235 MHz	40 Min.	
	3235 - 6590 MHz	40 Min.	
	6590 - 7210 MHz	15 Min.	

Maximum Ratings

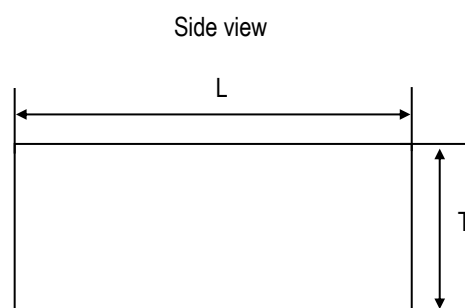
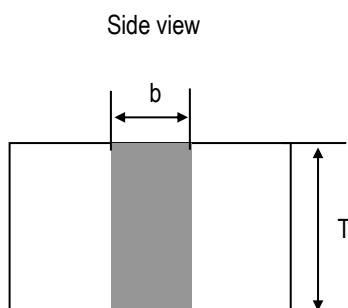
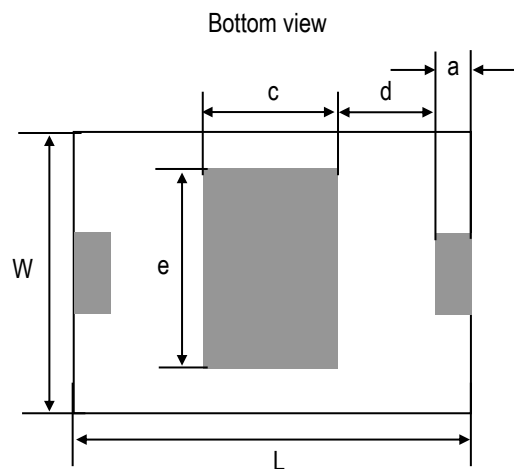
Power Capacity (W)	1 Max. (CW)
Operating Temperature (°C)	-40 to +105
Recommended Storage Conditions post-installation (°C)	-40 to +105
Recommended Storage Conditions and Period for Unused T&R Product	45% - 75% RH
	+5 to +35°C
	18 Months Max.

¹ Typical value represents average measurement at 25°C. Min./Max. values represent measurements over specified operating temperature.

² General specifications measured on Johanson's evaluation board PN 1988BP41A0600001CE1.

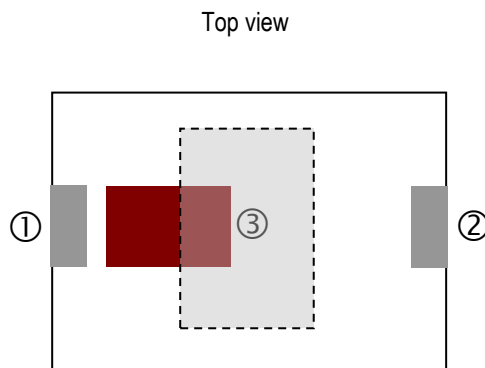
Mechanical Dimensions

	Inches			Millimeters		
L	0.126	±	0.008	3.20	±	0.20
W	0.098	±	0.008	2.50	±	0.20
T	0.059	±	0.004	1.50	±	0.10
a	0.012	±	0.006	0.30	±	0.15
b	0.024	±	0.008	0.60	±	0.20
c	0.047	±	0.006	1.20	±	0.15
d	0.028	±	0.006	0.70	±	0.15
e	0.079	±	0.006	2.00	±	0.15



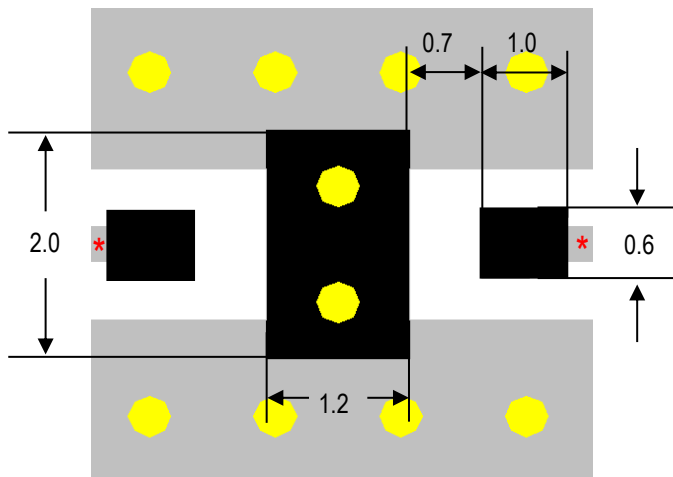
Terminal Configuration³

Pin Number	Function
1	INPUT/OUTPUT
2	INPUT/OUTPUT
3	GND



³ The termination type is Nickel Tin. Go to: <https://www.johansontechnology.com/tech-notes/typical-soldering-profile-ipc>. Typical Soldering Profile.

Recommended PCB Layout



Units in mm

 Solder Resist

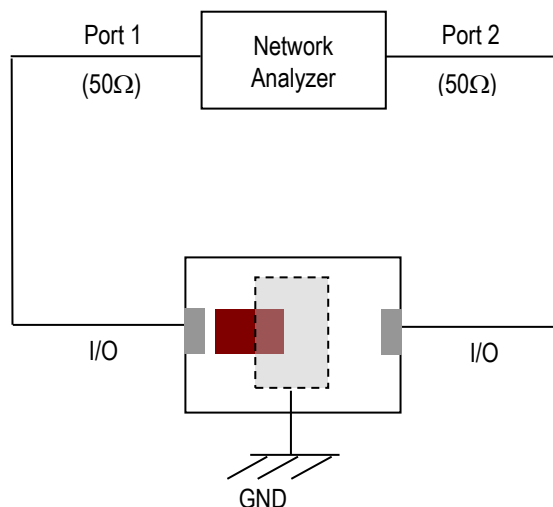
 Land

 Through-hole ($\phi 0.35$)

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

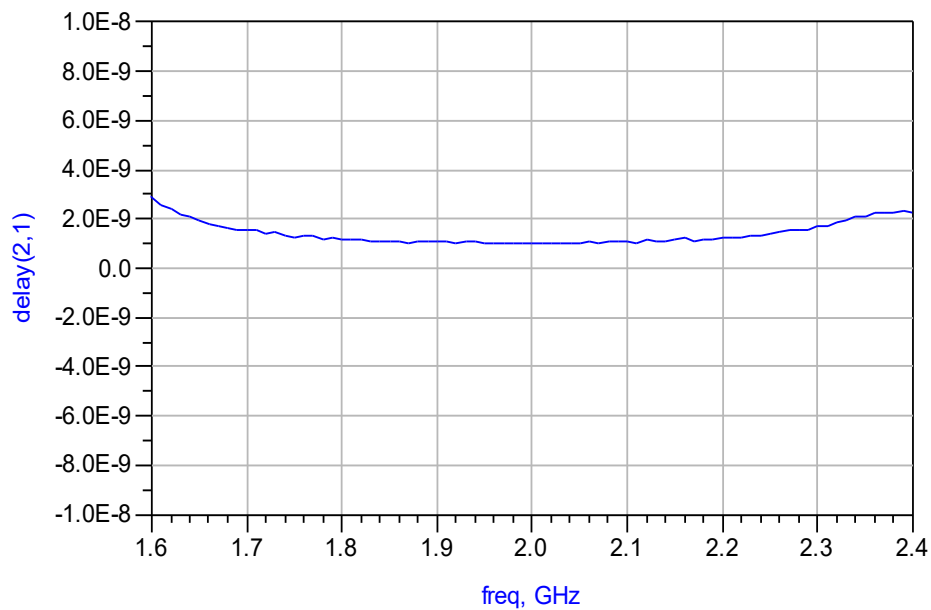
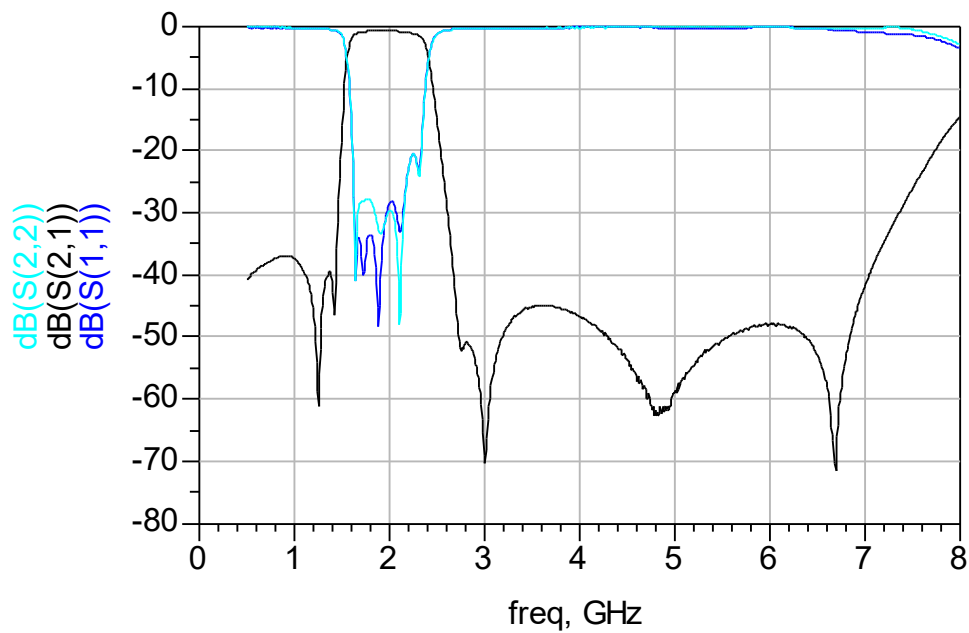
If you would like the full reference design package or have any questions, contact our application engineers at <https://www.johansontechnology.com/ask-a-question>

Measuring Diagram





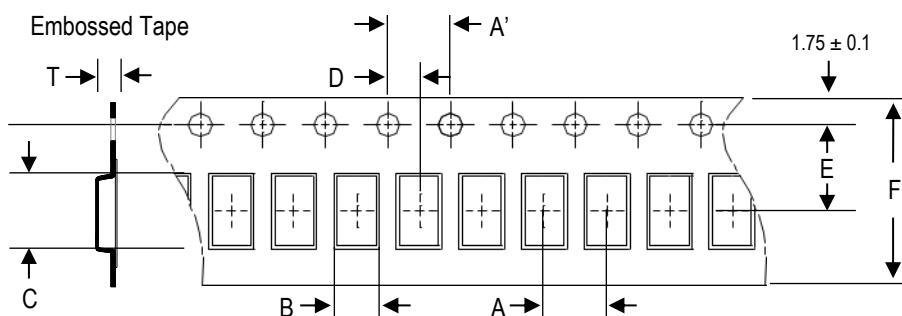
RF Measurements (T = 25°C)



S-parameter, layout files and complimentary design review available upon request. Contact our application engineers at <https://www.johansontechnology.com/ask-a-question>

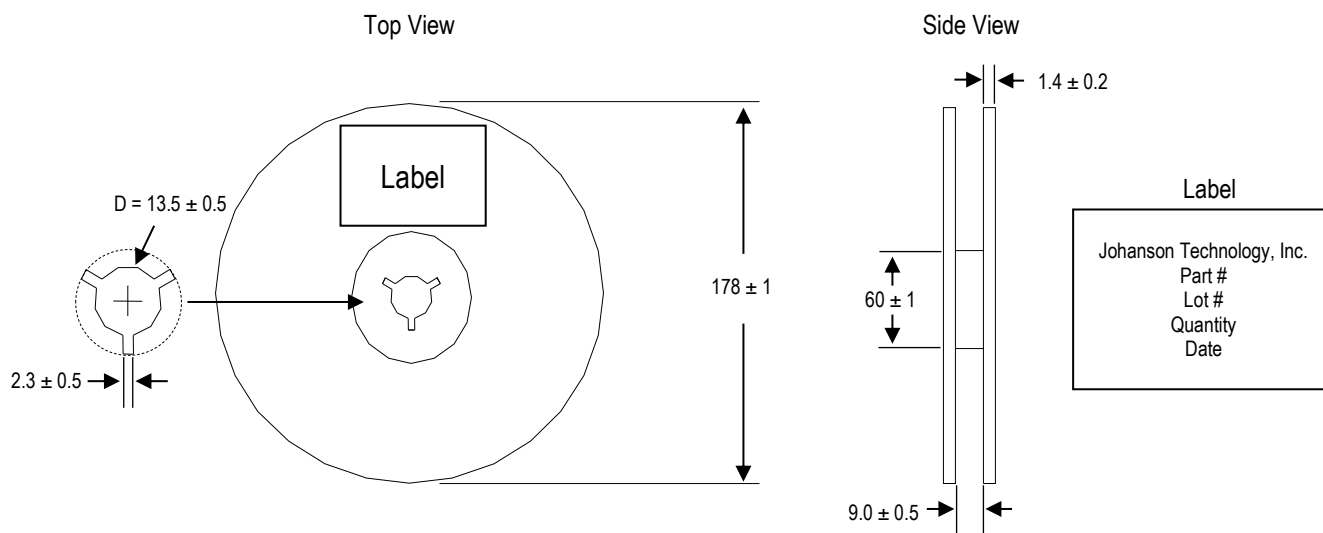
Tape and Reel Specifications (Units in mm)

Tape Dimensions

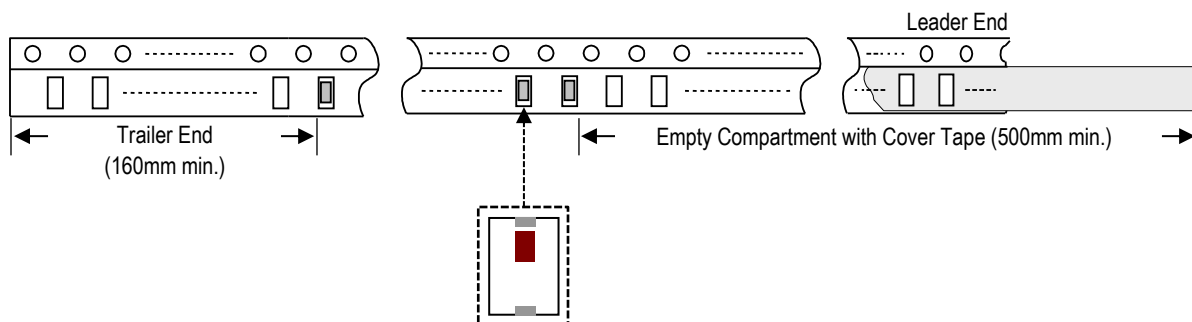


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
4.0 ± 0.1	4.0 ± 0.1	2.75 ± 0.1	3.45 ± 0.1	2.0 ± 0.1	3.5 ± 0.1	8.0 ± 0.1	1.70 ± 0.1	2,000 pcs	Plastic (Embossed)

Reel Dimensions



Leader and Trailer Dimensions



Orderable Part Numbers

Packaging Style	Part Number	Termination
Bulk (loose pcs.)	1988BP41A0600001B	Nickel Tin
T & R (7" Reel Embossed Tape)	1988BP41A0600001E (Qty: 2,000 pcs./reel)	
Evaluation Board with 2 SMA Connector	1988BP41A0600001CE1	

Important Links

[1988BP41A0600001E Product Page](#)

[More Band Pass Filters](#)

[Antenna Tuning, Optimization, and Validation Services](#)

[Soldering Information](#)

[MSL Information](#)

[Packaging Information](#)

[Recommended Storage Condition and Max Shelf Life](#)

[RoHS Compliance](#)

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

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