Product Description

ATEK848P3 is a power divider covering LF to 26 GHz frequency range. RF ports are DC coupled which allows operation down to DC.

ATEK848P3 provides flat loss over its frequency range. This allows users to easily realize wideband receivers with high data rate.

Divider is housed in compact 3x3 mm low cost SMD package, input and output ports are matched to 50 ohms internally.

Evaluation Board, bare die, custom package, and module options are available upon request.

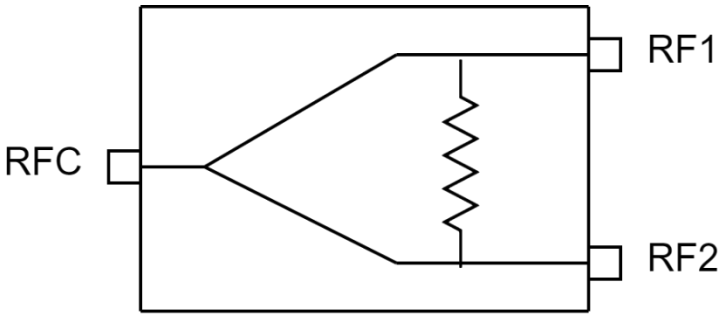
Product Features

- Frequency Range: LF - 26 GHz
- Loss: 1 dB (In addition to 3 dB)
- Amplitude Imbalance: 0.2 dB
- Phase Imbalance: 1.5 degrees
- 3x3 mm compact size

Applications

- Wideband Receivers
- Telecommunication
- Test and Measurement
- SATCOM
- SDR

Functional Block Diagram



Electrical Specifications

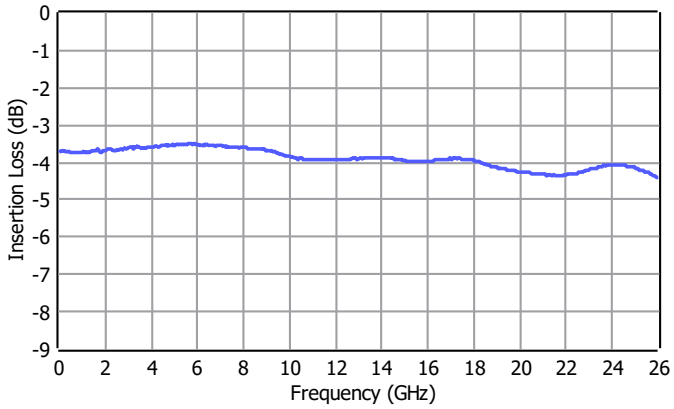
Conditions unless otherwise specified: Typical, T = 25 C, CW.

Parameter		Min	Typ	Max	Units
Operational Frequency Range		LF		26	GHz
Insertion Loss	0.01 GHz		3.7		dB
	2 GHz		3.7		
	8 GHz		3.6		
	12 GHz		3.9		
	20 GHz		4.2		
	26 GHz		4.5		
Isolation	0.01 GHz		4.2		dB
	2 GHz		7.8		
	8 GHz		26		
	12 GHz		22		
	20 GHz		23		
	26 GHz		17		
Input Return Loss			-15		dB
Output Return Loss			-19		dB
Operating Temperature		-40		85	°C

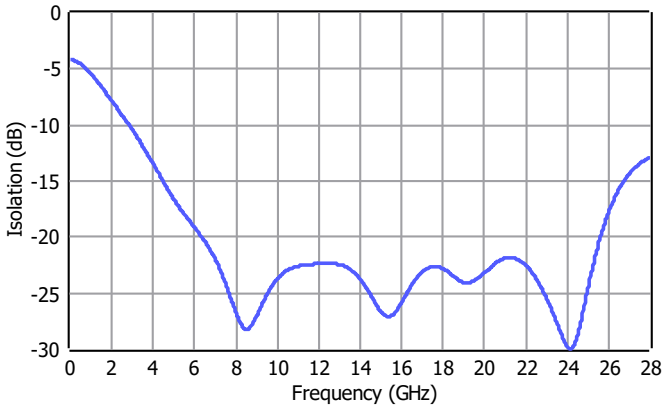
Typical Performance Plots

Conditions unless otherwise specified: Typical, T = 25 C, CW.

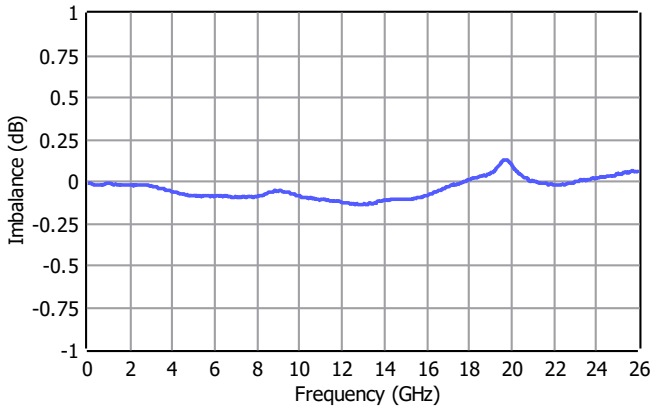
Insertion Loss



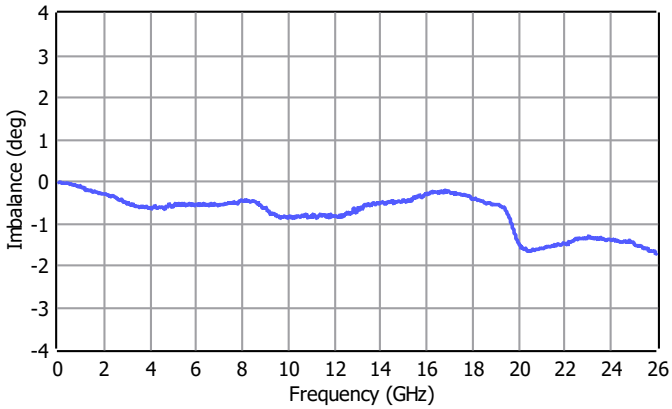
Isolation



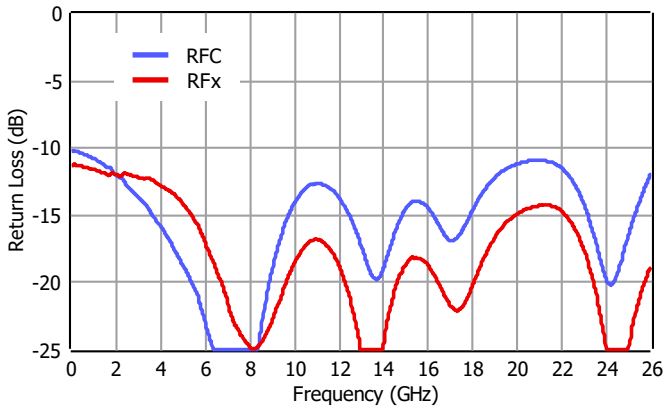
Amplitude Imbalance



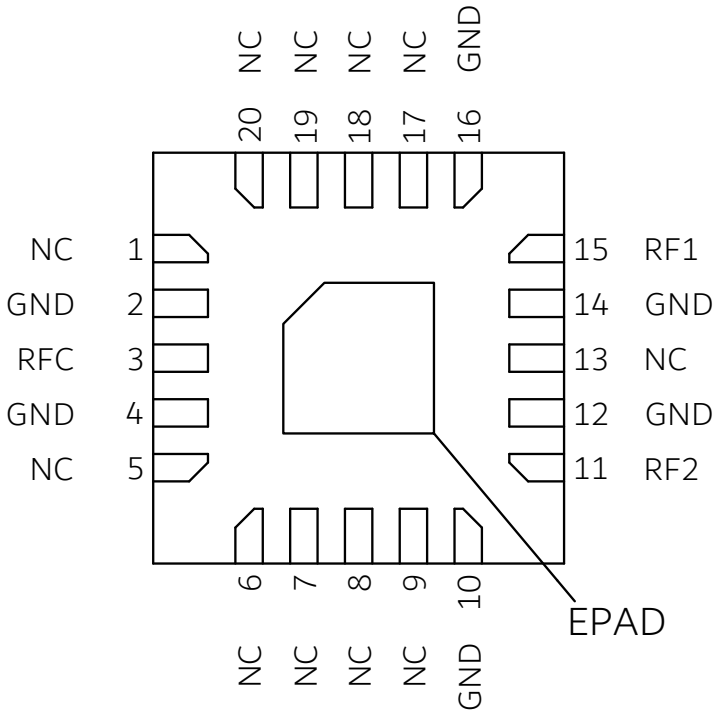
Phase Imbalance



Return Loss



Pin Description

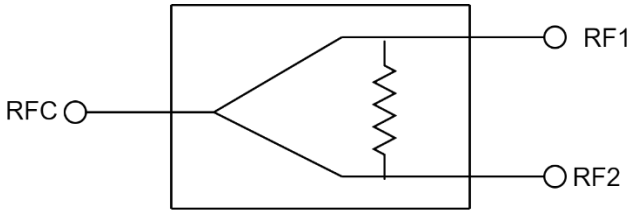


Top View

Pin Number	Pin Name	Description
3	RFC	RF input/output pin.
15	RF1	RF input/output pin.
11	RF2	RF input/output pin.
1, 5-9, 13, 17-20	NC	These pins are not internally connected. Can be grounded on the PCB.
2, 4, 10, 12, 14, 16	GND	Ground.
21	EPAD	Exposed Pad on the bottom of the package should be connected to ground with multiple number of vias to reduce the inductance to the GND.

Applications Information

Signal entering from RFC is divided into 2, then delivered to RF1 and RF2 pins.
Typical application schematic to operate the power divider is given below.



All data are gathered with connectorized evaluation board measurements, to generate data shown in this document.

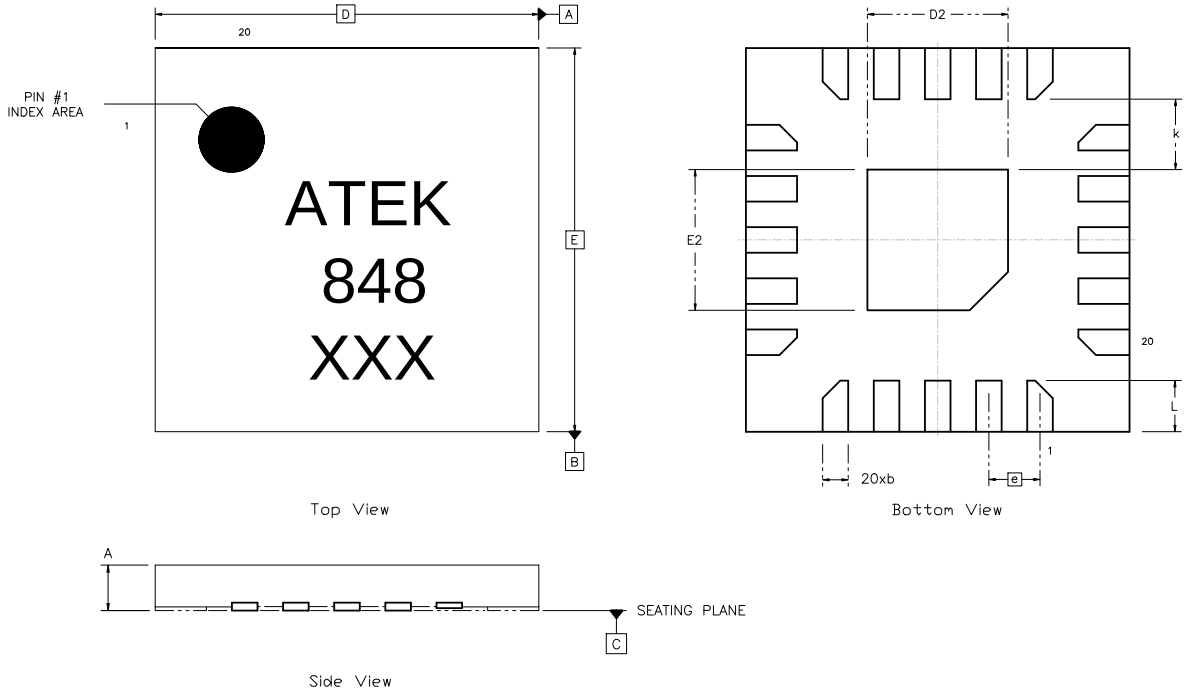
The NC pins of the power divider are connected to the GND on the PCB used to generate the plots shown in this document.

Absolute Maximum Ratings

Parameter	Value/Range
Supply Voltage (Vdd)	TBD
RF Input Power	TBD
Storage Temperature	−55 to +125°C

Operation of this device outside the parameter ranges given above may cause damage. These conditions should not be applied simultaneously.

Mechanical and Marking Information



NOTES:
1) ALL DIMENSIONS IN MM

SYMBOL	MIN	MAX	SYMBOL	MIN	MAX
A, V	0.80	1.00	E2	1.00	1.20
b	0.15	0.25	e	0.40 BSC	
D	3.00 BSC		k	0.20	–
D2	1.00	1.20	L	0.35	0.45
E	3.00 BSC				

Handling Precautions

Caution!
ESD-Sensitive Device
Handle Accordingly

Contact Information

For the latest specifications, additional product information, support, and sales.
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Revisions

Revision No	Revision Date	Revision Reason	Section / Page No
1.0	23.10.2023	Initial Release	