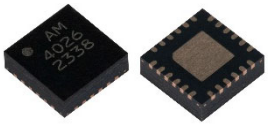
AM4026 – 8-Way Power Splitter

DC to 30 GHz Resistive Power Splitter

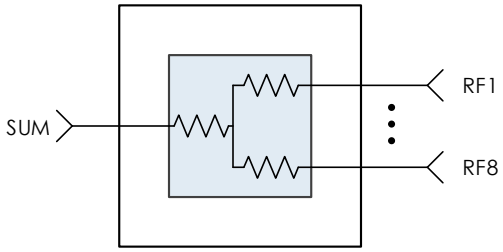


AM4026 is a broadband eight-way resistive power splitter / combiner. The device boasts high isolation, low insertion loss, and high return loss in each of its 8 paths. With good phase and amplitude matching, the AM4026 is suitable for broadband RF/LO distribution circuits. The standard package is a 4mm QFN.

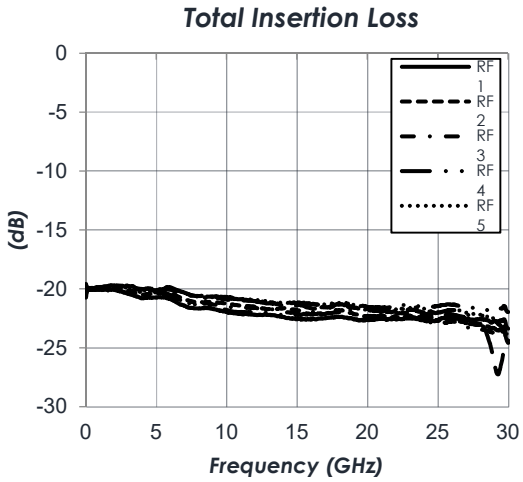
FEATURES

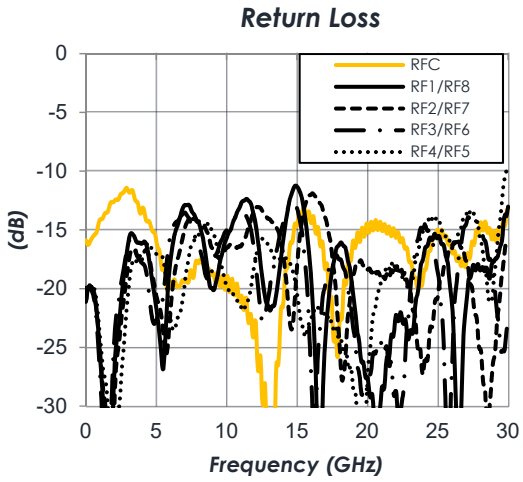
- DC to 30 GHz Frequency range
- 30 dB Isolation
- 21 dB Insertion Loss
- 13 dB Return Loss
- 4mm QFN Package
- -40C to +85C Operation

FUNCTIONAL DIAGRAM



CHARACTERISTIC PERFORMANCE



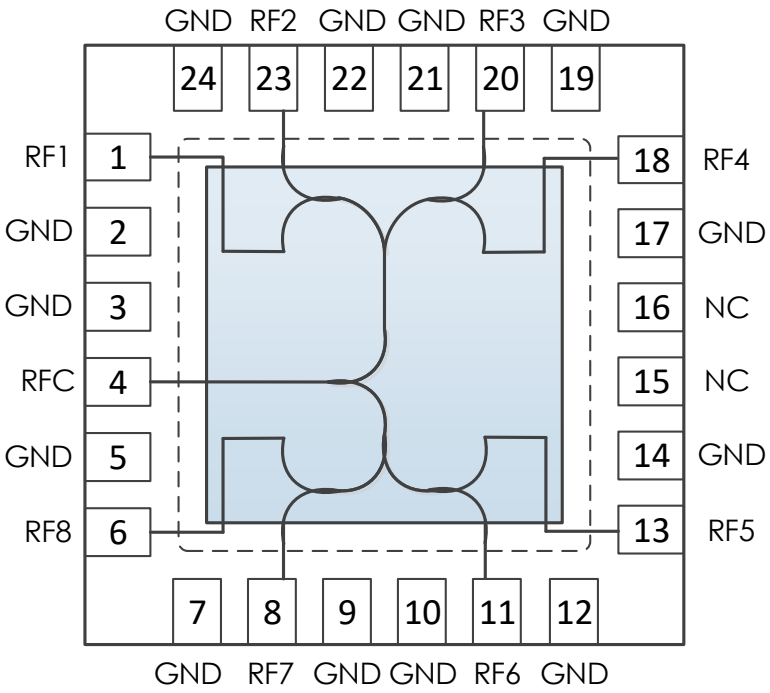


CONTENTS

REVISION HISTORY

Date	Revision	Notes
October 21, 2021	1	Initial Release.
March 21, 2024	2	Incorrect pin out for RF1.
July 22, 2024	3	Changed to Mercury branding. No content changes.

PIN LAYOUT AND DEFINITIONS



Pin	Name	Function
1	RF1	RF Port 1 – 50 Ohms
2	GND	Ground
3	GND	Ground
4	RFC	Sum Port – 50 Ohms
5	GND	Ground
6	RF8	RF Port 8 – 50 Ohms
7	GND	Ground
8	RF7	RF Port 7 – 50 Ohms
9-10	GND	Ground
11	RF6	RF Port 6 – 50 Ohms
12	GND	Ground
13	RF5	RF Port 5 – 50 Ohms
14	GND	Ground

Pin	Name	Function
15-16	NC	No Connect
17	GND	Ground
18	RF4	RF Port 4 – 50 Ohms
19	GND	Ground
20	RF3	RF Port 3 – 50 Ohms
21, 22	GND	Ground
23	RF2	RF Port 2 – 50 Ohms
24	GND	Ground

Note: NC pins may be grounded or left open. Center pad of QFN is ground

SPECIFICATIONS

Absolute Maximum Ratings

	Minimum	Maximum
RF Input Power		+27 dBm
Operating Junction Temperature	-40 C	+150 C
Storage Temperature Range	-55 C	+150 C

Note: Any device operation beyond the Absolute Maximum Ratings may result in permanent damage to the device. The values listed in this table are extremes and do not imply functional operation of the device at these or any other conditions beyond what is listed under Recommended Operating Conditions. Any part subjected to conditions outside of what is recommended for an extended amount of time may suffer from reliability concerns.

Handling Information

	Minimum	Maximum
Moisture Sensitivity Level	MSL 3	
ESD Classification (HBM)	Class 1a	

Mercury products are electrostatic sensitive.
Follow safe handling practices to avoid damage.

Recommended Operating Conditions

	Minimum	Typical	Maximum
Operating Case Temperature	-40 C		+85 C

RF Performance

(T = 25 °C unless otherwise specified)

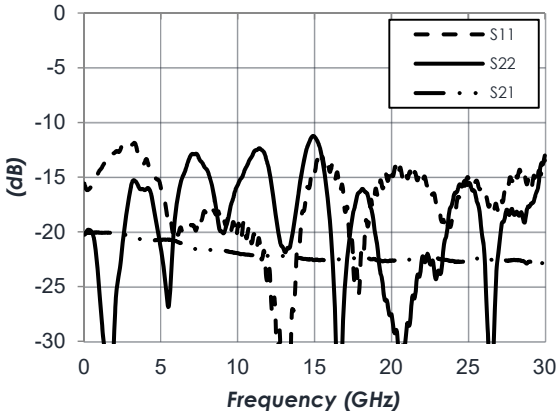
Param	Testing Conditions	Min	Typical	Max
Frequency Range		DC		30 GHz
Additional Insertion Loss*	DC to 30 GHz		3.5 dB	4.5 dB
Return Loss	DC to 30 GHz		13 dB	
Isolation port-to-port	DC to 30 GHz		30 dB	

***Note**: Insertion loss shown is the additional loss after theoretical splitter loss (18 dB).

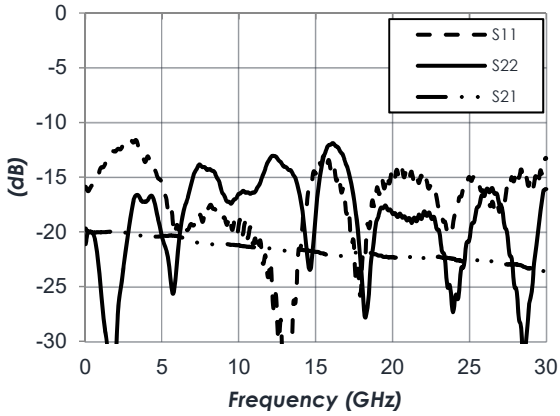
TYPICAL PERFORMANCE

(T = 25 °C unless otherwise specified)

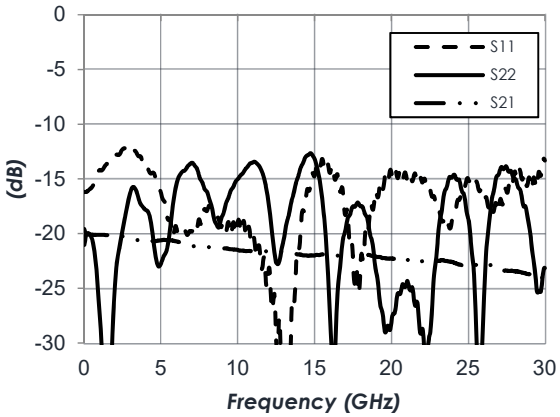
RF1/RF8



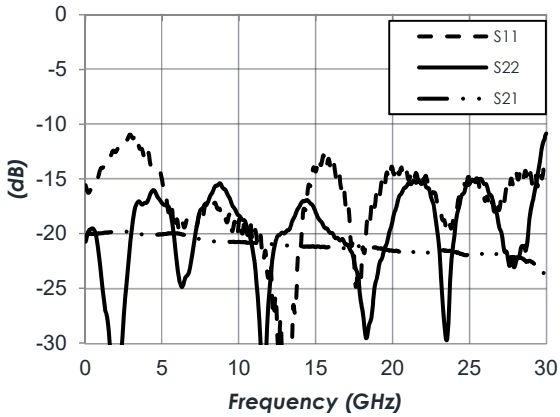
RF2/RF7



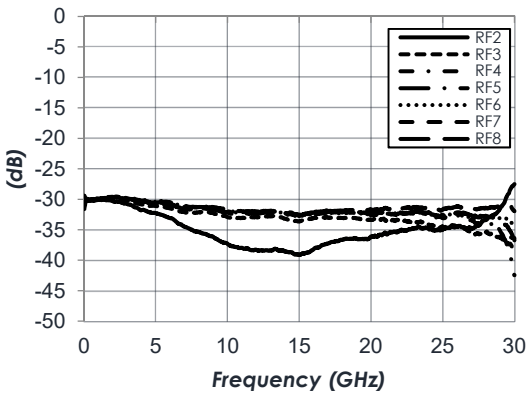
RF3/RF6



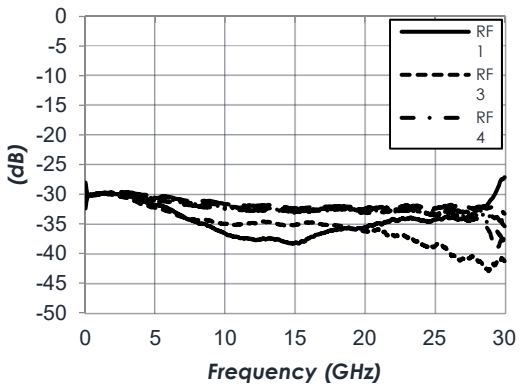
RF4/RF5



RF1 Isolation



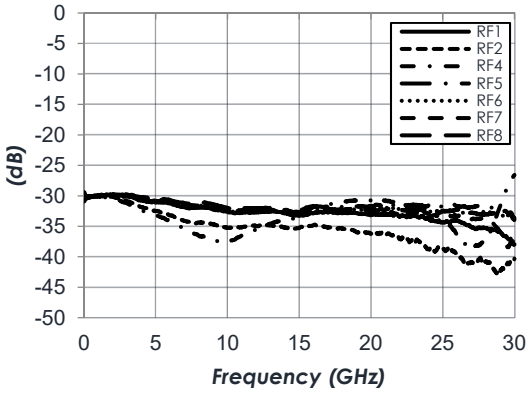
RF2 Isolation



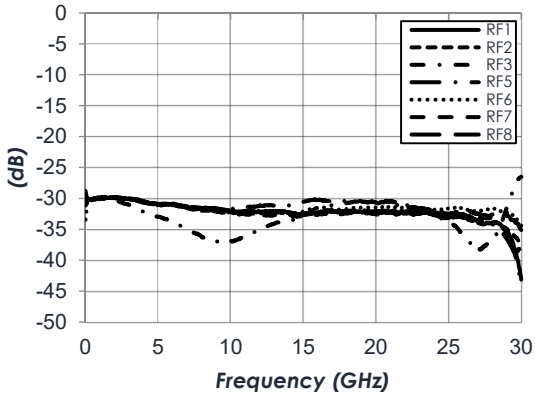
TYPICAL PERFORMANCE (CONTINUED)

(T = 25 °C unless otherwise specified)

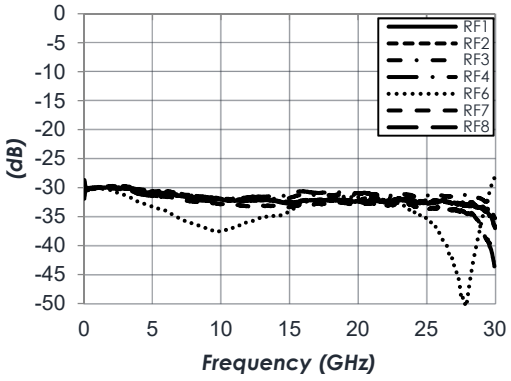
RF3 Isolation



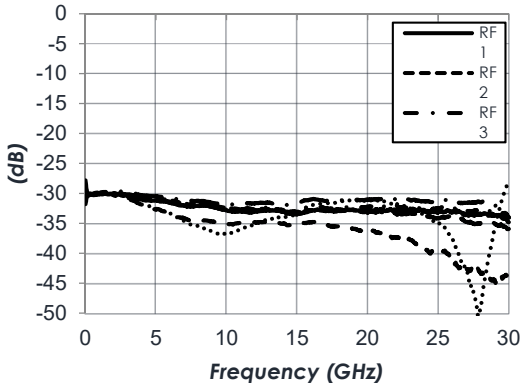
RF4 Isolation



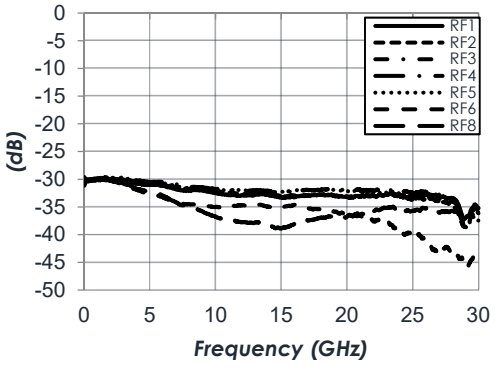
RF5 Isolation



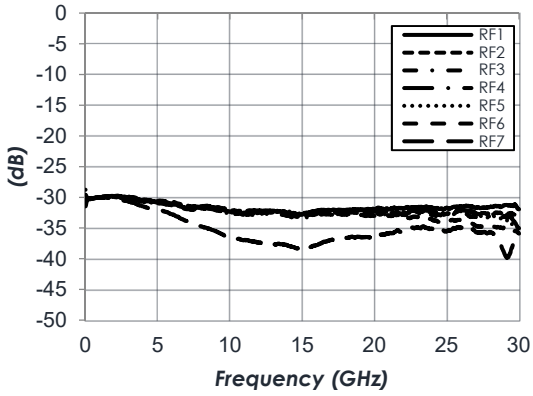
RF6 Isolation



RF7 Isolation

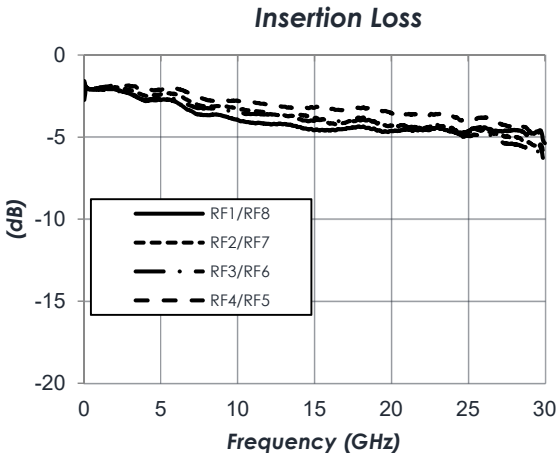


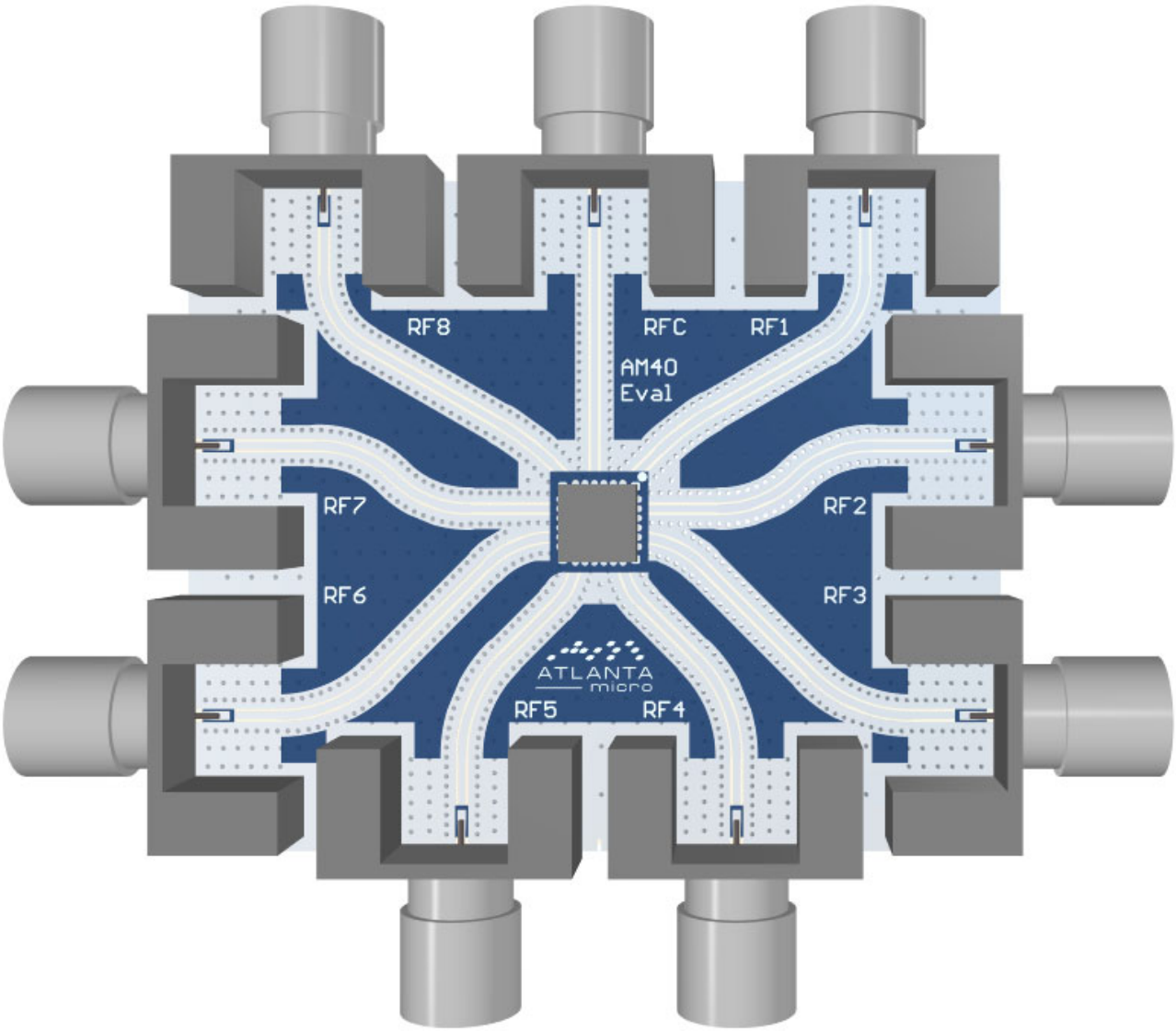
RF8 Isolation



TYPICAL PERFORMANCE (CONTINUED)

(T = 25 °C unless otherwise specified)





RELATED PARTS

Part Number		Description
AM4006	2 GHz to 9 GHz	4-Way Splitter
AM4008	2 GHz to 26.5 GHz	2-Way Splitter
AM4021	3.05 GHz to 5.05 GHz	8-Way Splitter
AM4023	2 GHz to 18 GHz	4-Way Splitter

COMPONENT COMPLIANCE INFORMATION

RoHS: Mercury Systems, Inc. hereby certifies that all products comply with the EC Directive 2011/65/EC on the Restriction of Hazardous Substances, commonly known as EU-RoHS 6 and 10. All products supplied by Mercury shall be compliant with the European Directive 2011/65/EC based on the following substance list.

Substance List	Allowable Maximum Concentration
Lead (Pb)	<1000 PPM (0.1% by weight)
Mercury (Hg)	<1000 PPM (0.1% by weight)
Cadmium (Cd)	<75 PPM (0.0075% by weight)
Hexavalent Chromium (CrVI)	<1000 PPM (0.1% by weight)
Polybrominated Biphenyls (PBB)	<1000 PPM (0.1% by weight)
Polybrominated Diphenyl ethers (PBDE)	<1000 PPM (0.1% by weight)
Decabromodiphenyl Deca BDE	<1000 PPM (0.1% by weight)
Bis (2-ethylheyl) Phthalate (DEHP)	<1000 PPM (0.1% by weight)
Butyl Benzyl Phthalate (BBP)	<1000 PPM (0.1% by weight)
Dibutyl Phthalate (DBP)	<1000 PPM (0.1% by weight)
Diisobutyl Phthalate (DIBP)	<1000 PPM (0.1% by weight)

REACH: Mercury Systems, Inc. neither uses nor intentionally adds any of the substances considered to be a Substance of Very High Concern (SVHC) as defined by the EU Regulation (EC) No. 1907-2006 on Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH).

Conflict Materials: Mercury does not knowingly use materials that are sourced from the Democratic Republic of Congo (DRC) or any other known conflict regions. Mercury's supply chain is comprised of sources that are both environmentally and socially responsible. We periodically review this requirement with our vendors to ensure continued compliance.

Mercury takes its responsibility as a global partner seriously and will use due diligence within our supply chain to ensure all standards are met to the best of our knowledge.

Corporate Headquarters

50 Minuteman Road
Andover, MA 01810 USA
+1 978.967.1401 tel
+1 866.627.6951 tel
+1 978.256.3599 fax

International Headquarters
Mercury International

Avenue Eugène-Lance, 38
PO Box 584
CH-1212 Grand-Lancy 1
Geneva, Switzerland
+41 22 884 5100 tel

Learn more
Visit: mrcy.com
For pricing details, contact: MMICsales@mrcy.com
For technical details, contact: MMICsupport@mrcy.com