MMIC SURFACE MOUNT

Power Splitter/Combiner EP2-19+

2 Way-0° 50Ω 15 to 25 GHz

THE BIG DEAL

- Wide bandwidth, 15 to 25 GHz
- High isolation, 34 dB typ. at 19 GHz
- Low cost splitter for 5G Application
- Excellent amplitude unbalance, 0.03 dB typ. at 19 GHz
- Good phase unbalance, 2° at 19 GHz
- Small size, 2x2 mm
- Aqueous washable

CASE STYLE: MC1630-1

Generic photo used for illustration purposes only

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

APPLICATIONS

- Phased array
- Instrumentation
- Radar
- Satellite communications

PRODUCT OVERVIEW

Mini-Circuits' EP2-19+ is a MMIC 2-way 0° splitter/combiner designed for wideband operation from 15 to 25 GHz supporting many applications requiring high performance across a wide frequency range including phased array radars, 5G applications, as well as instrumentation and more. This model provides excellent power handling up to 0.63 W (as a splitter/combiner) with good isolation, and low phase and amplitude unbalance in a tiny 2 x 2 mm 6 lead-QFN package. Manufactured using GaAs IPD technology, the EP2-19+ not only provides a repeatable performance, but also a high level of ESD protection.

KEY FEATURES

Feature	Advantages
Wideband, 15 to 25 GHz	Low cost power splitter designed for phased array radars and 5G applications.
High isolation, 34 dB typ. at 19 GHz Excellent power handling, 0.63 W as a splitter / combiner	In power combiner applications, half the power is dissipated internally. EP2-19+ is designed to handle 0.63 W internal dissipation as a combiner allowing reliable operation without excessive temperature rise.
Excellent Amplitude unbalance, 0.03 dB typ. at 19 GHz Good phase unbalance, 2° typ. at 19 GHz	Ideal for Applications such as MIMO & phased array radars
Tiny size, 2X2mm QFN package	Tiny footprint saves space in dense layouts while providing low inductance, repeatable transitions, and excellent thermal contact to the PCB.

REV. A
ECO-011710
EP2-19+
CM/JM/PS
220203

Power Splitter/Combiner EP2-19+

ELECTRICAL SPECIFICATIONS[1] AT 25°C

Parameter		Frequency (GHz)	Min.	Typ.	Max.	Unit
Frequency Range			15		25	GHz
Insertion Loss, (above 3.0 dB)		17.55 - 20.45 15 - 25	— —	0.4 0.6	1.1 1.4	dB
Isolation		17.55 - 20.45 15 - 25	21 14	32 24		dB
Amplitude Unbalance		17.55 - 20.45 15 - 25	— —	0.03 0.03	0.3 0.5	dB
Phase Unbalance		17.55 - 20.45 15 - 25	— —	2 2	6 6	deg
VSWR (Port S)		17.55 - 20.45 15 - 25	— —	1.3 1.5		:1
VSWR (Port 1-2)		17.55 - 20.45 15 - 25	— —	1.2 1.2		:1
Power Handling	As a splitter As a combiner[2]	15 - 25 15 - 25	— —		0.63 0.63	W

1. Tested on Mini-Circuits Test Board TB-EP2-19+
2. As a combiner of non-coherent signals, max. power per port is 0.31 watts

MAXIMUM RATINGS

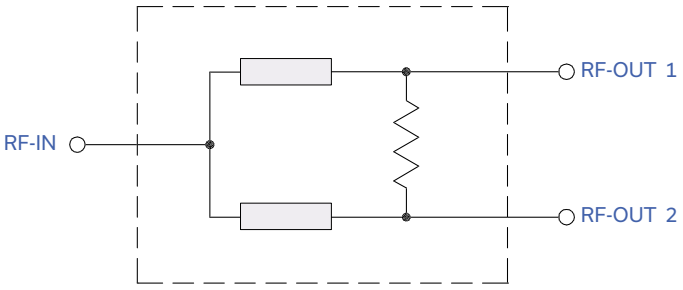
Parameter	Ratings
Operating temperature	-55°C to 105°C
Storage temperature	-65°C to 150°C

Permanent damage may occur if any of these limits are exceeded.

PAD CONNECTIONS

Function	Pad Number
SUM PORT	5
PORT 1	1
PORT 2	3
GROUND	Paddle
NOT USED, GROUND EXTERNALLY	2,4,6

SIMPLIFIED SCHEMATIC



PRODUCT MARKING

Marking may contain other features or characters for internal lot control

Power Splitter/Combiner EP2-19+

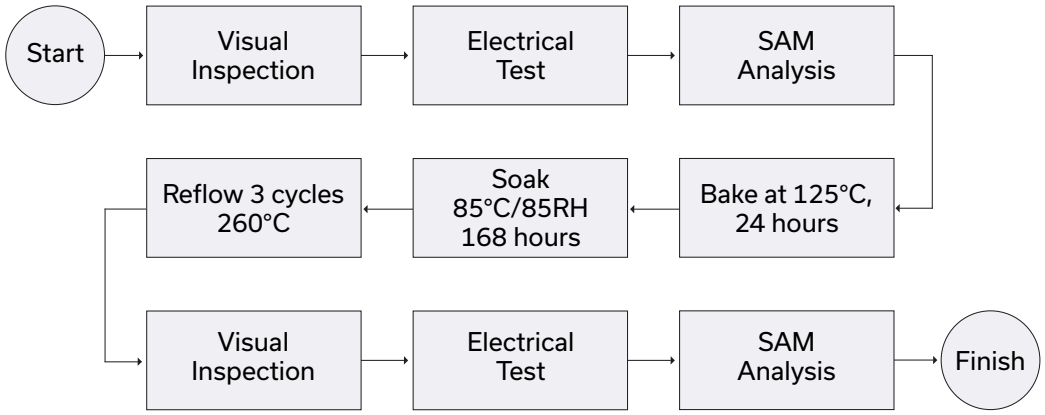
ADDITIONAL DETAILED TECHNICAL INFORMATION IS AVAILABLE ON OUR DASH BOARD. TO ACCESS CLICK HERE

Performance Data	Data Table Swept Graphs S-Parameter (S3P Files) Data Set (.zip file)
Case Style	MC1630-1 Plastic package, exposed paddle; lead finish: Matte Tin
Tape & Reel **Standard quantities available on reel**	F66 7" reels with 20, 50, 100, 200, 500, 1000 & 2000 devices
Suggested Layout for PCB Design	PL-720
Evaluation Board	TB-EP2-19+ (without connectors) TB-EP2-19C+ (with connectors)
Environmental Ratings	ENV82

ESD RATING

Human Body Model (HBM): Class 2 (Pass 2000V) in accordance with ANSI/ESD STM 5.1 - 2001

MSL TEST FLOW CHART



NOTES

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard. Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

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