



Mini-Circuits

MMIC SURFACE MOUNT

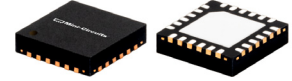
# Power Splitter/Combiner

EP2C+

2 Way-0° 50Ω 1800 to 12500 MHz

## THE BIG DEAL

- Ultra-Wide Bandwidth, 1800 to 12500 MHz
- High Power Handling, 1.85 W as a Splitter
- Excellent Amplitude Unbalance, 0.2 dB Typ.
- Good Phase Unbalance, 6° Typ.
- Small Size, 4x4 mm QFN-Style Package
- Aqueous Washable
- DC Passing



Generic photo used for illustration purposes only

CASE STYLE: DG1847

### +RoHS Compliant

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

## APPLICATIONS

- WIMAX
- ISM
- Instrumentation
- Radar
- WLAN
- Satellite Communications
- LTE

## PRODUCT OVERVIEW

Mini-Circuits EP2C+ is a MMIC splitter/combiner designed for wideband operation from 1800 to 12500 MHz. This model provides excellent power ratings in a tiny device package (4x4x1 mm), with up to 1.85 W power handling (as a splitter) and up to 0.4 A DC current handling. Manufactured using GaAs IPD technology, it provides a high level of ESD protection and excellent reliability.

## KEY FEATURES

Feature	Advantages
Wideband, 1800 to 12500 MHz	One power splitter can be used in many applications, saving component count. Also ideal for wideband applications such as military and instrumentation.
Excellent Power Handling 1.8 W as a Splitter 0.85 W Internal Dissipation as a Combiner	In power combiner applications, half the power is dissipated internally. EP2C+ is designed to handle 0.85 W internal dissipation as a combiner allowing reliable operation without excessive temperature rise. Similar splitters implemented as Wilkinson splitters on PCB require big resistors and additional heat sinking. As a splitter, EP2C+ can handle up to 1.85 W in a very small package.
DC Passing Up to 0.4 A	DC current passing is helpful in applications where both RF & DC need to pass through the DUT, such as antenna-mounted hardware.
Small Size, 4x4 mm QFN-Style Package	Tiny footprint saves space in dense layouts while providing low inductance, repeatable transitions, and excellent thermal contact to the PCB.





## ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		1800		12500	GHz
Insertion Loss above 3.0 dB	1800-3800		0.8	1.1	dB
	3800-8500		1.1	1.4	
	8500-12500		1.8	2.1	
Isolation	1800-3800	7.0	10.0		dB
	3800-8500	13.0	16.0		
	8500-12500	14.0	17.0		
Phase Unbalance	1800-3800		3.0	6.0	Degree
	3800-8500		6.0	10.0	
	8500-12500		11.0		
Amplitude Unbalance	1800-3800		0.1	0.2	dB
	3800-8500		0.2	0.4	
	8500-12500		0.7	0.9	
VSWR (Port S)	1800-3800		1.5		:1
	3800-8500		1.3		
	8500-12500		1.4		
VSWR (Port 1-2)	1800-3800		1.2		:1
	3800-8500		1.3		
	8500-12500		1.6		

## ABSOLUTE MAXIMUM RATINGS

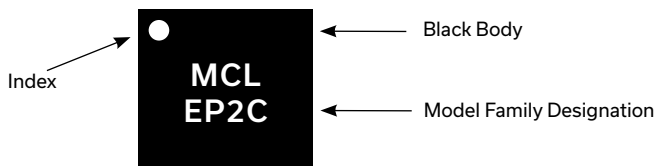
Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C
Power Input (as a Splitter)	1.85 W max.
Internal Dissipation	0.85 W max.
DC Current	0.4 A max.

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

## PAD CONNECTIONS

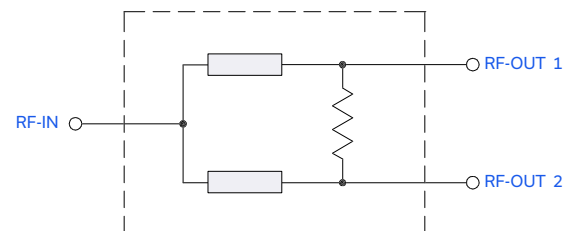
Function	Pad Number
SUM PORT	3
PORT 1	19
PORT 2	12
NOT USED, GROUND EXTERNALLY	1, 2, 4-11, 13-18, 20-24, Paddle

## PRODUCT MARKING



Marking may contain other features or characters for internal lot control.

## SIMPLIFIED ELECTRICAL SCHEMATIC





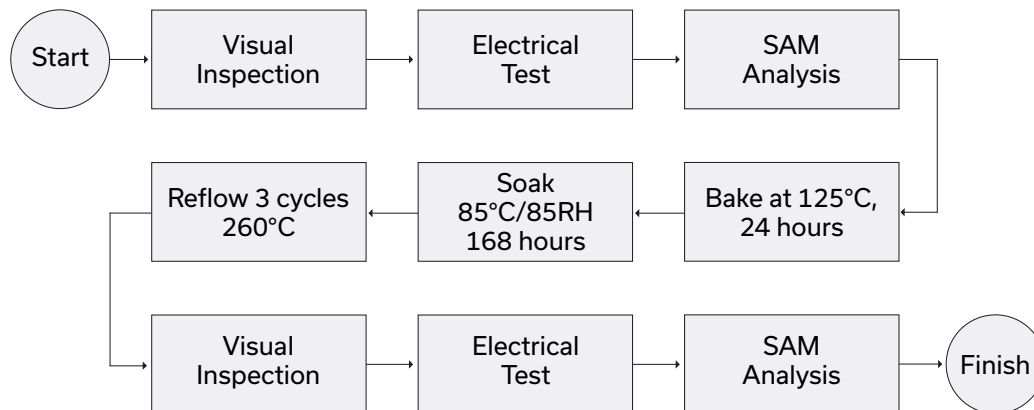
ADDITIONAL DETAILED TECHNICAL INFORMATION IS AVAILABLE ON OUR DASHBOARD. TO ACCESS [CLICK HERE](#)

Performance Data	Data Table
	Swept Graphs
	S-Parameter (S3P Files) Data Set (.zip file)
Case Style	DG1847 Plastic package, exposed paddle; Lead Finish: Matte Tin
Tape & Reel Standard Quantities Available on Reel	F68 7" Reels with 20, 50, 100, 200, 500, 1000 devices 13" Reels with 2000, 3000, 4000 devices
Suggested Layout for PCB Design	PL-442
Evaluation Board	TB-811+
Environmental Ratings	ENV82

**ESD RATING**

Human Body Model (HBM): Class 2 (1800 V to <4000 V) in accordance with ANSI/ESD STM 5.1 - 2001

Machine Model (MM): Class M3 (200 V to <400 V) in accordance with ANSI/ESD STM 5.2 - 1999

**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/terms/viewterm.html](http://www.minicircuits.com/terms/viewterm.html)