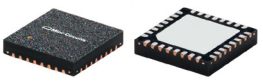
MMIC SURFACE MOUNT

Power Splitter/Combiner EP4RKU+

4 Way-0° 50Ω DC to 18 GHz

THE BIG DEAL

- Wide bandwidth, DC to 18 GHz
- Excellent isolation, 20 dB typ. at 9 GHz
- Excellent amplitude unbalance, 0.3 dB typ. at 9 GHz
- Good phase unbalance, 2 deg typ. at 9 GHz
- Small size, 5x5 mm
- Aqueous washable



Generic photo used for illustration purposes only

CASE STYLE: DG1677-2

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

APPLICATIONS

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

PRODUCT OVERVIEW

Mini-Circuits' EP4RKU+ is a MMIC 4-way 0° splitter/combiner designed for wideband operation from 10.7 to 31 GHz supporting many applications requiring high performance across a wide frequency range including LTE bands through phased array radars, 5G, as well as instrumentation and more. This model provides good isolation, and low phase and amplitude unbalance in a small 5 x 5mm QFN package. Manufactured using GaAs IPD technology, the EP4RKU+ not only provides a repeatable performance, but also a high level of ESD protection.

KEY FEATURES

Feature	Advantages
Wideband, DC to 18 GHz	One power splitter can be used in a HF thru, LTE bands, WiMax and WiFi, saving component count. Also ideal for wideband applications such as military and instrumentation.
Excellent Amplitude unbalance, 0.3 dB typ. at 9 GHz Excellent phase unbalance, 2° typ. at 9 GHz	Ideal for Applications such as MIMO & phased array radars
Small size, 5 x 5mm QFN package	Tiny footprint saves space in dense layouts while providing low inductance, repeatable transitions, and excellent thermal contact to the PCB.

Power Splitter/Combiner EP4RKU+

ELECTRICAL SPECIFICATIONS[1] AT +25°C

Parameter		Frequency (GHz)	Min.	Typ.	Max.	Unit
Frequency Range			DC		18	GHz
Insertion Loss above 6.0 dB		DC - 4	—	4.2	5.2	dB
		4 - 18	—	3.4	4.9	
Isolation		DC - 4	9	12.1	—	dB
		4 - 18	11	18.8	—	
Phase Unbalance		DC - 4	—	0.3	4	Degree
		4 - 18	—	1.9	19	
Amplitude Unbalance		DC - 4	—	0.1	0.6	dB
		4 - 18	—	0.2	1.2	
VSWR (Port S)		DC - 4	—	1.8	—	:1
		4 - 18	—	1.4	—	
VSWR (Port 1-4)		DC - 4	—	1.6	—	:1
		4 - 18	—	1.5	—	
Power Handling[2]	As a splitter	DC - 18	—	—	3.1	W
	Per Port as a combiner	DC - 18	—	—	3.1	

1. Tested on Mini-Circuits Test Board TB-EP4RKUC+
2. Measurements performed with one port energized and other ports terminated.

ABSOLUTE MAXIMUM RATINGS

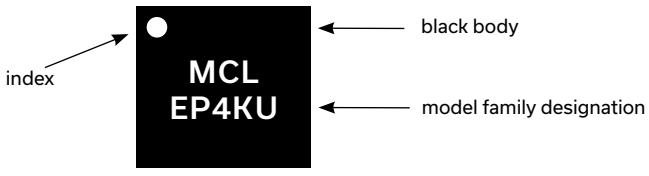
Parameter	Ratings
Operating temperature	-55°C to +105°C
Storage temperature	-65°C to +150°C

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

PAD CONNECTIONS

Function	Pad Number
SUM PORT	21
PORT 1	14
PORT 2	10
PORT 3	31
PORT 4	27
GROUND	9,11,13,15,20,22,26,28,30,32 and Paddle
NOT USED, GROUND EXTERNALLY	1-8, 12, 16-19, 23-25, 29

PRODUCT MARKING



Marking may contain other features or characters for internal lot control

SIMPLIFIED ELECTRICAL SCHEMATIC

Power Splitter/Combiner EP4RKU+

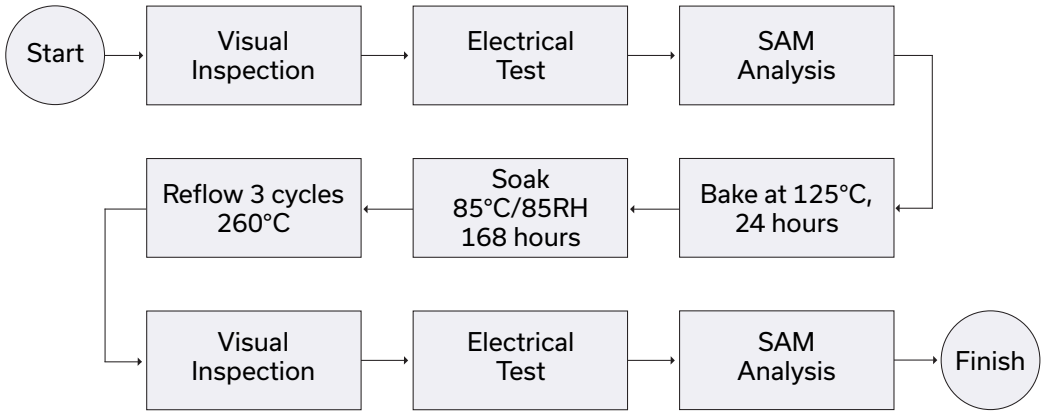
ADDITIONAL DETAILED TECHNICAL INFORMATION IS AVAILABLE ON OUR DASHBOARD CLICK HERE

Performance Data and Graphs	Data Table Swept Graphs S-Parameter (S3P Files) Data Set (.zip file)
Case Style	DG1677-2 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
Suggested Layout for PCB Design	PL-649
Evaluation Board	TB-EP4RKU+ (Without connectors) TB-EP4RKUC+ (With connectors)
Environmental Ratings	ENV08T1

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