

Surface Mount

High Power Splitter SCPJ-2-30W-32+

2 Way-180° 50Ω 110 to 330 MHz 30 Watt

The Big Deal

- High power handling, 30W as a splitter
- High power handling, 15W each port as combiner
- Low insertion loss, 0.3 dB typ.
- Low unbalance, 0.5 dB / 5° typ.
- Good isolation, 18 dB typ.



CASE STYLE: BL301-3

Product Overview

Mini-Circuits' SCPJ-2-30W-32+ is a surface-mount 2-way 180° splitter/combiner covering the 110 to 330 MHz frequency range, supporting bandwidth requirements for a wide range of RF/microwave systems. This model can handle up to 30W RF input power as a splitter, 15W each port as combiner and provides low insertion loss, high isolation, low amplitude unbalance, and low phase unbalance. The unit comes housed in a small, shielded, 24-lead package (0.93 x 1.22 x 0.47") with wrap-around terminations for excellent solderability.

Key Features

Feature	Advantages
High power handling, 30W	Supports a wide range of power requirements in a small package, minimizing space requirements.
Low insertion loss, 0.3 dB typ. (above 3 dB theoretical loss)	The combination of 30W power handling and low insertion loss makes this model a suitable candidate for distributing signals while maintaining excellent transmission of signal power.
High isolation, 18 dB typ.	Minimizes interference between ports.
Low unbalance, 0.5 dB / 5° typ.	Low unbalance provides nearly equal output signals, ideal for parallel path/multichannel systems.
Small size, 0.93 x 1.22 x 0.47"	Saves space in dense PCB layouts.

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



Surface Mount High Power Splitter

SCPJ-2-30W-32+

2 Way-180° 50Ω 110 to 330 MHz 30Watt

Maximum Ratings

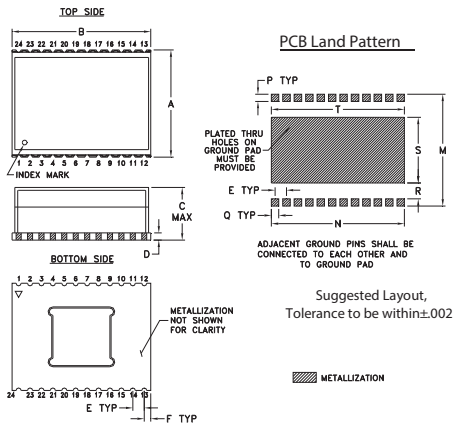
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

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

Pin Connections

SUM PORT	24
PORT 1 (180°)	15
PORT 2 (0°)	10
GROUND	all others

Outline Drawing

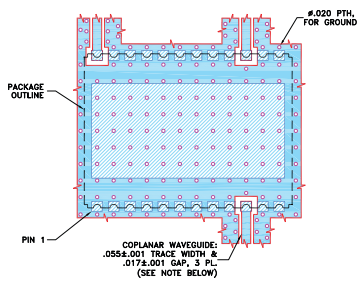


Outline Dimensions (inch/mm)

A	B	C	D	E	F	M
.93	1.22	.47	.062	.100	.058	.970
23.62	30.99	11.94	1.57	2.54	1.47	24.64

N	P	Q	R	S	T	wt
1.165	.063	.065	.138	.570	1.165	grams
29.59	1.60	1.65	3.51	14.48	29.59	6.5

Demo Board MCL P/N: TB-605+ Suggested PCB Layout (PL-437)



- NOTES:
- COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030"±.002", COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS COPLANAR WAVEGUIDE PARAMETERS MAY NEED TO BE MODIFIED.
 - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
 - DENOTES PCB COPPER LAYOUT WITH SMOBC (GOLDER MASK OVER BARE COPPER)
 - DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

Notes

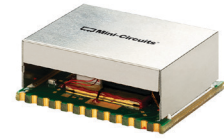
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Features

- low phase unbalance, 5 deg. typ.
- low amplitude unbalance, 0.5 dB typ.
- high input power as a splitter, 30 W
- high input power as combiner, 15 W each port

Applications

- VHF/UHF Radio Transmitters
- Aircraft Communications Systems



Generic photo used for illustration purposes only

CASE STYLE: BL301-3

+RoHS Compliant

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

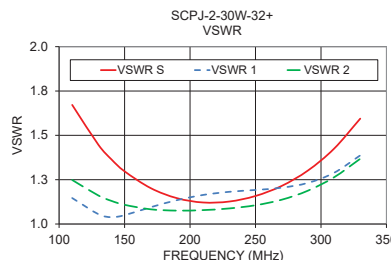
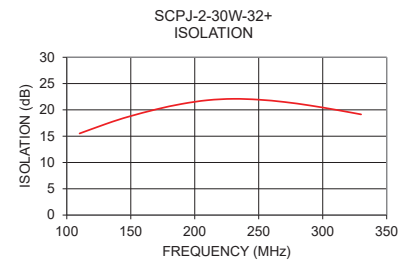
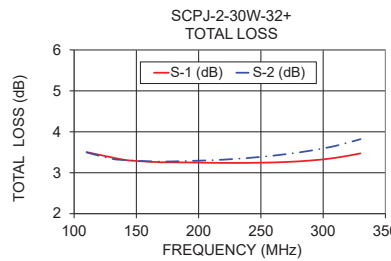
Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency		110		330	MHz
Insertion Loss (above theoretical 3.0 dB)	140-270 110-330		0.5 0.9	0.9 1.5	dB
Isolation	140-270 110-330	15 13	18 16	—	dB
Phase Unbalance	140-270 110-330	—	5 7	10 13	Degree
Amplitude Unbalance	140-270 110-330	—	0.4 0.7	0.8 1.2	dB
VSWR (Port S)	110-330	—	1.4	—	:1
VSWR (Port 1-2)	110-330	—	1.3	—	:1
Input Power	110-330	—	—	30	W
	110-330	—	—	15	W

Typical Performance Data

Frequency (MHz)	Total Loss ¹ (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
110	3.50	3.50	0.01	15.52	2.79	1.67	1.15	1.25
130	3.38	3.34	0.03	17.28	3.35	1.45	1.06	1.16
140	3.32	3.31	0.01	18.09	3.36	1.36	1.04	1.13
150	3.29	3.29	0.01	18.83	3.67	1.30	1.05	1.11
170	3.26	3.27	0.02	20.11	4.12	1.20	1.09	1.08
190	3.25	3.29	0.03	21.14	4.56	1.15	1.13	1.08
210	3.24	3.31	0.06	21.84	4.98	1.12	1.16	1.08
230	3.24	3.34	0.10	22.10	5.41	1.13	1.18	1.09
250	3.25	3.39	0.14	21.94	5.88	1.16	1.19	1.11
270	3.26	3.45	0.19	21.50	6.40	1.21	1.20	1.14
290	3.30	3.54	0.24	20.84	7.00	1.30	1.23	1.19
310	3.36	3.66	0.29	20.03	7.63	1.42	1.29	1.26
330	3.47	3.82	0.35	19.14	8.36	1.59	1.39	1.37

1. Total Loss = Insertion Loss + 3dB splitter theoretical



Electrical Schematic

