SURFACE MOUNT

Power Splitter/Combiner SYPS-3-72-75+

75Ω 3 Way-0° 5 to 700 MHz

KEY FEATURES

- Low Insertion Loss 0.9 dB typ.
- Good Isolation, 24 dB typ.
- Wide Frequency Band, 5 to 700 MHz, usable 5-1000 MHz
- Low Amplitude Unbalance, 0.2 dB typ.
- Low Phase Unbalance, 1.3 deg. typ.



Generic photo used for illustration purposes only

APPLICATIONS

- CATV
- VHF/UHF
- Communication systems

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' SYPS-3-72-75+ is a 75Ω 3-way 0° surface mount splitter/combiner covering the 5 to 700 MHz frequency range, supporting bandwidth requirements for communication systems and equipment as well as other broadband applications. This model can handle up to 1W RF input power as a splitter and provides low insertion loss, high isolation, and low phase and amplitude unbalance. It comes housed in a miniature, 8-lead plastic package (0.38 x 0.50 x 0.25") with wrap-around terminations for excellent solderability and gold over nickel plate termination finish.

ELECTRICAL SPECIFICATIONS[1] AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		5	—	700	MHz
Insertion Loss (above 4.8 dB)	5 - 700	—	0.9	1.4	dB
Isolation	5 - 300 300 - 700	21 16	25 23	— —	dB
Phase Unbalance (±)	5 - 700	—	1.3	3.0	Degree
Amplitude Unbalance (±)	5 - 700	—	0.2	0.4	dB
Return Loss (Port S)	5 - 700	18	25	—	dB
Return Loss (Port 1 and Port 2)	5 - 700	15	20	—	dB

1. Bi-directional can function as a splitter or as a combiner. Refer to S-Parameters for actual performance.

ABSOLUTE MAXIMUM RATINGS[2]

Operating Case Temperature		-40° C to +85° C
Storage Temperature		-55° C to +100° C
Input Power	**as splitter**	1 W
	as combiner per port	0.33 W
Internal Dissipation		0.15 W

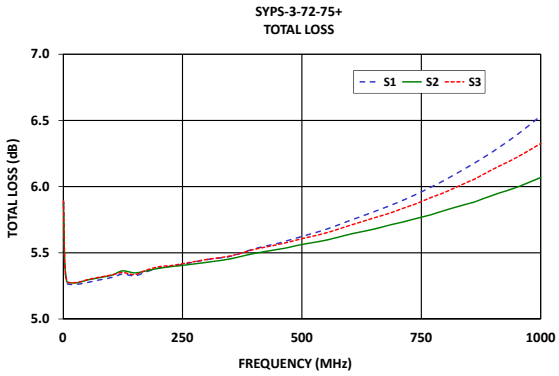
2. Permanent damage may occur if any of these limits are exceeded.

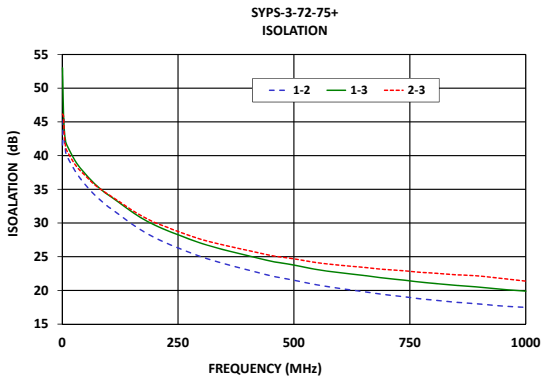
REV. A
ECO-023120
SYPS-3-72-75+
EDU4919
URJ/MCL NY
240920

Power Splitter/Combiner SYPS-3-72-75+

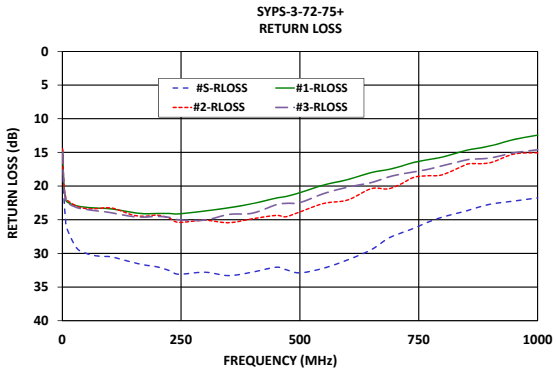
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TYPICAL PERFORMANCE GRAPHS AT +25°C





Total Loss = Insertion Loss + 4.8dB splitter loss.



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FUNCTIONAL DIAGRAM

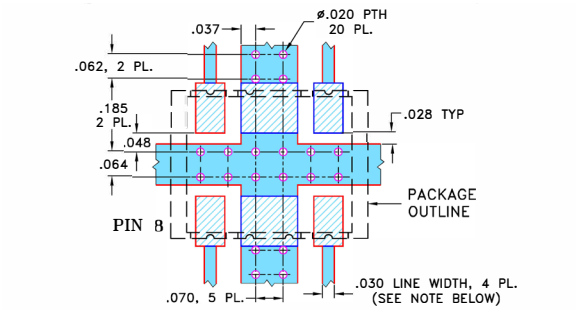


Figure 1. SYPS-3-72-75+ Functional Diagram

PAD DESCRIPTION

Function	Pad Number	Description
Sum Port	8	Connects to Sum Port
Port 1	1	Connects to 1 Port
Port 2	4	Connects to 2 Port
Port 3	5	Connects to 3 Port
GROUND	2,3,6,7	Connects to Ground on PCB (See drawing PL-229)

SUGGESTED PCB LAYOUT (PL-229)



NOTE:

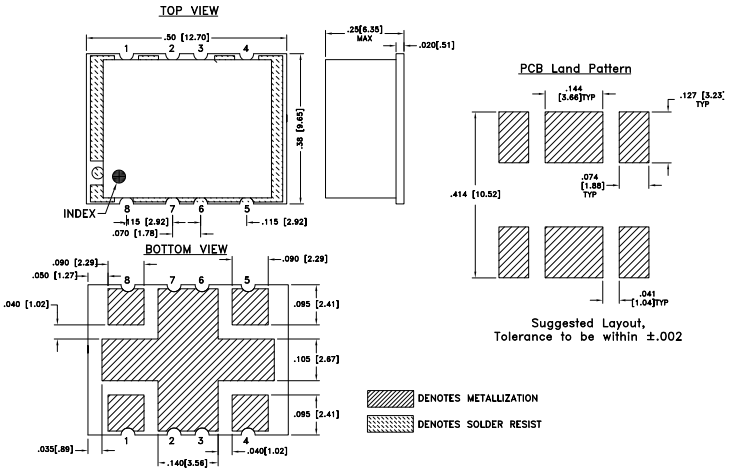
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Figure 2. Suggested PCB Layout PL-229

CASE STYLE DRAWING



WT, GRAM : .80

Dimensions are in inches (mm). Tolerances: 2 Pl.±.01; 3 Pl. ±.005

PRODUCT MARKING*: SYPS-3-72-75

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

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ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASHBOARD.

Performance Data & Graphs	Data Graphs S-Parameter (S4P Files) Data Set (.zip file) De-embedded to device pads
Case Style	AH202 Lead Finish: Gold over Nickel
RoHS Status	Compliant
Tape and Reel	F61
Suggested Layout for PCB Design	PL-229
Evaluation Board	TB-SYPS-3-7275+ Gerber File
Environmental Rating	ENV02T1

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