



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 SPECIFICATIONS¹ 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	21	25	—	dB
	300 - 700	16	23	—	
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 RATINGS²

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



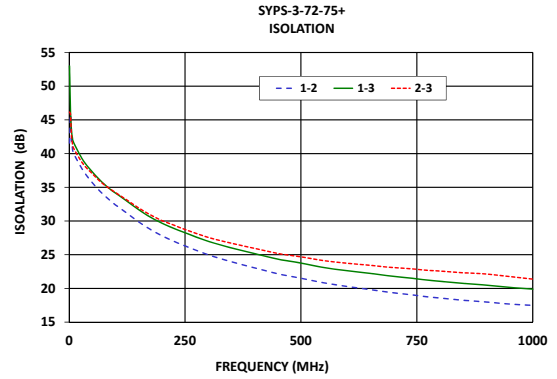
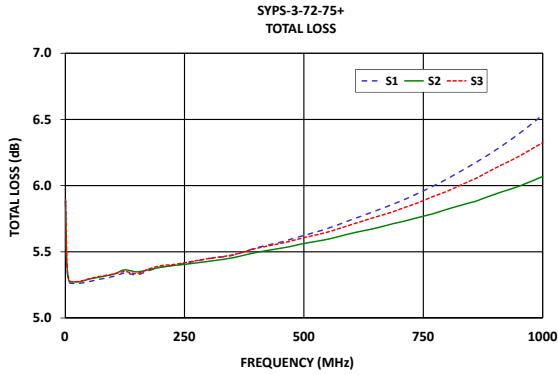


SURFACE MOUNT

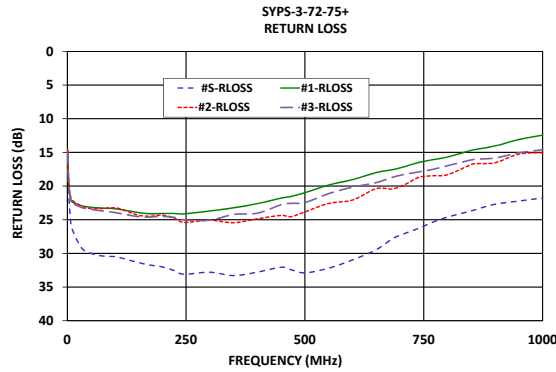
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TYPICAL PERFORMANCE GRAPHS AT +25°C



Total Loss = Insertion Loss + 4.8dB splitter loss.





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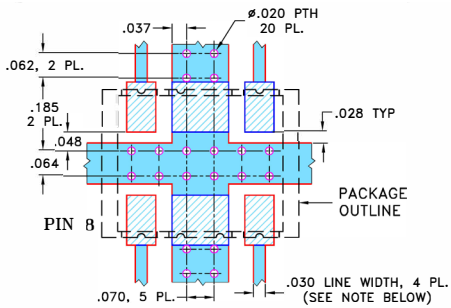


Figure 1. SYPS-3-72-75+ Functional Diagram

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)



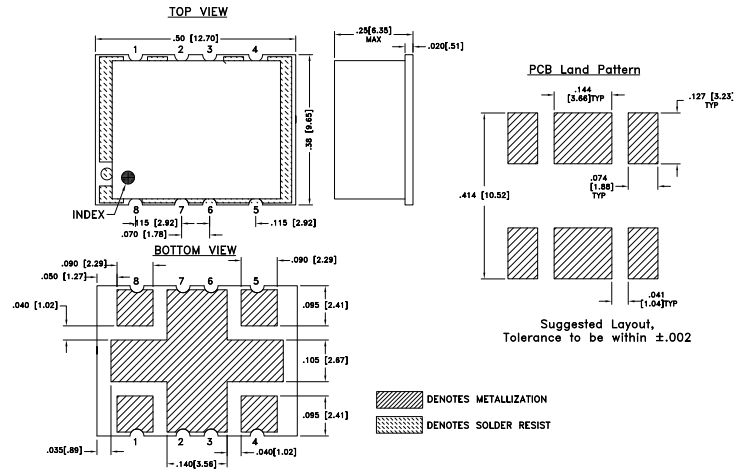
NOTE:

- 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.
- 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

