*Surface Mount*

# Power Splitter/Combiner

# SYPS-2-1+

## 2 Way-0° 50Ω 2 to 500 MHz

*Generic photo used for illustration purposes only*

CASE STYLE: TTT167

***+RoHS Compliant***

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

## Maximum Ratings

| | |
|---|---|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Power Input (as a splitter) | 1W max. |
| Internal Dissipation | 0.125W max. |

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

## Pin Connections

| | |
|---|---|
| SUM PORT | 3 |
| PORT 1 | 1 |
| PORT 2 | 2 |
| GROUND | 4,5,6 |

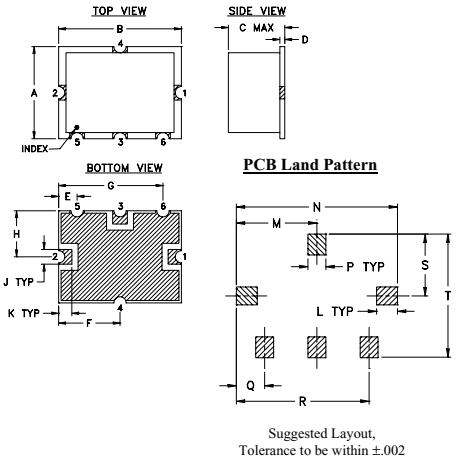
## Features

- wideband, 2 to 500 MHz
- low insertion loss, 0.3 dB typ.
- high isolation, 32 dB typ.

## Applications

- VHF/UHF
- communications systems
- receivers & transmitters
- instrumentation

## Outline Drawing



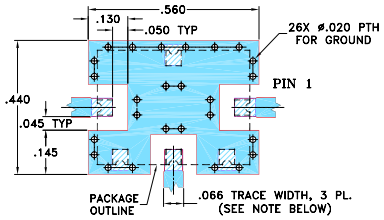

Suggested Layout,
Tolerance to be within ±.002

## Outline Dimensions (inch / mm)

| A | B | C | D | E | F | G | H | J | K |
|---|---|---|---|---|---|---|---|---|---|
| .38 | .50 | .23 | .020 | .075 | .250 | .425 | .187 | .050 | .050 |
| 9.65 | 12.70 | 5.84 | 0.51 | 1.91 | 6.35 | 10.80 | 4.75 | 1.27 | 1.27 |

| L | M | N | P | Q | R | S | T | wt. |
|---|---|---|---|---|---|---|---|---|
| .070 | .270 | .540 | .060 | .095 | .445 | .208 | .415 | grams |
| 1.78 | 6.86 | 13.72 | 1.52 | 2.41 | 11.30 | 5.28 | 10.54 | 0.8 |

***Demo Board MCL P/N: TB-12***
***Suggested PCB Layout (PL-079)***




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. THE USE OF SOLDER MASK OVER THE GROUND AREA UNDER THE UNIT AS SHOWN IS RECOMMENDED TO PREVENT POTENTIAL SHORTING. IF USER CHOOSES TO EXPOSE METAL UNDER THE ENTIRE UNIT GROUND PAD FOR IMPROVED GROUNDING, IT IS RECOMMENDED A SOLDER MASK DAM BE APPLIED AROUND EACH GROUND PAD TO ENSURE FILLET AND CONNECTION AT GROUND PADS.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER), SEE NOTE 2.

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## Electrical Specifications

| FREQ. RANGE (MHz) | ISOLATION (dB) | | | | | | INSERTION LOSS (dB) ABOVE 3.0 dB | | | | | | PHASE UNBALANCE (Degrees) | | | AMPLITUDE UNBALANCE (dB) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | | M | | U | | L | | M | | U | | L | M | U | L | M | U |
| $f_L$-$f_U$ | Typ. | Min | Typ. | Min | Typ. | Min | Typ. | Max. | Typ. | Max. | Typ. | Max. | Max. | Max. | Max. | Max. | Max. | Max. |
| 2-500 | 40 | 20 | 32 | 20 | 30 | 20 | 0.2 | 0.6 | 0.3 | 0.75 | 0.6 | 1.0 | 2.0 | 3.0 | 4.0 | 0.2 | 0.3 | 0.5 |

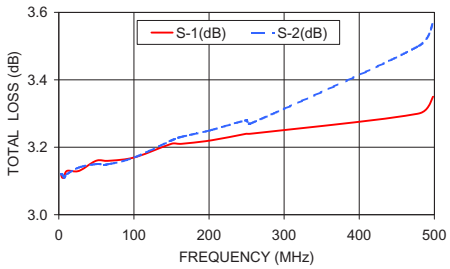
L = low range [$f_L$ to 10 $f_L$] M = mid range [10 $f_L$ to $f_U$/2] U= upper range [$f_U$/2 to $f_U$]

## Typical Performance Data

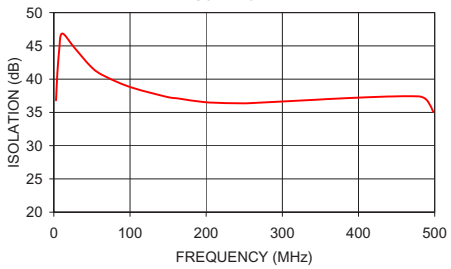
| Frequency (MHz) | Total Loss[1] (dB) | | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|---|---|---|---|---|---|---|---|---|
| | S-1 | S-2 | | | | | | |
| 2.84 | 3.12 | 3.12 | 0.00 | 36.81 | 0.01 | 1.02 | 1.12 | 1.06 |
| 4.47 | 3.11 | 3.12 | 0.00 | 40.46 | 0.02 | 1.02 | 1.11 | 1.05 |
| 7.03 | 3.11 | 3.11 | 0.00 | 44.30 | 0.01 | 1.02 | 1.10 | 1.04 |
| 10.86 | 3.13 | 3.12 | 0.01 | 46.85 | 0.03 | 1.02 | 1.10 | 1.04 |
| 26.91 | 3.13 | 3.14 | 0.00 | 44.74 | 0.07 | 1.03 | 1.10 | 1.04 |
| 49.59 | 3.16 | 3.15 | 0.00 | 41.78 | 0.08 | 1.03 | 1.10 | 1.04 |
| 66.66 | 3.16 | 3.15 | 0.00 | 40.46 | 0.18 | 1.03 | 1.10 | 1.04 |
| 100.87 | 3.17 | 3.17 | 0.00 | 38.79 | 0.28 | 1.04 | 1.09 | 1.04 |
| 149.64 | 3.21 | 3.22 | 0.01 | 37.29 | 0.35 | 1.04 | 1.09 | 1.04 |
| 161.93 | 3.21 | 3.23 | 0.01 | 37.11 | 0.39 | 1.04 | 1.09 | 1.04 |
| 201.16 | 3.22 | 3.25 | 0.03 | 36.51 | 0.47 | 1.05 | 1.08 | 1.03 |
| 249.89 | 3.24 | 3.28 | 0.04 | 36.36 | 0.52 | 1.06 | 1.07 | 1.03 |
| 254.97 | 3.24 | 3.27 | 0.03 | 36.38 | 0.59 | 1.06 | 1.07 | 1.03 |
| 479.07 | 3.30 | 3.50 | 0.20 | 37.41 | 0.80 | 1.18 | 1.10 | 1.10 |
| 498.34 | 3.35 | 3.57 | 0.22 | 35.04 | 0.75 | 1.20 | 1.12 | 1.12 |

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

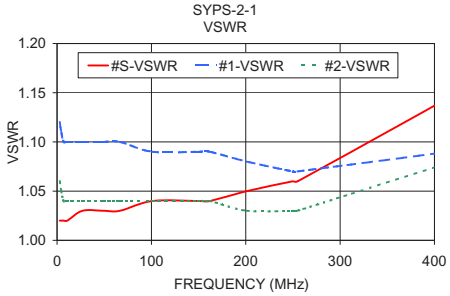
SYPS-2-1
TOTAL LOSS



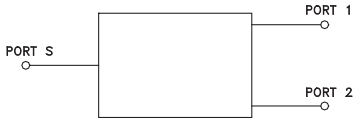

SYPS-2-1
ISOLATION




SYPS-2-1
VSWR




## electrical schematic




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

# X-ON Electronics

Largest Supplier of Electrical and Electronic Components

***Click to view similar products for*** Signal Conditioning ***category:***

***Click to view products by*** Mini-Circuits ***manufacturer:***

Other Similar products are found below :

MAPDCC0001 MAPDCC0004 PD0409J5050S2HF 880157 HHS-109-PIN DC1417J5005AHF AFS14A30-2185.00-T3 AFS14A35-1591.50-T3 DS-323-PIN B39321R801H210 1A0220-3 JP510S LFB212G45SG8C341 LFB322G45SN1A504 LFL182G45TC3B746 SF2159E 30057 FM-104-PIN CER0813B MAPDCC0005 3A325 40287 41180 ATB3225-75032NCT BD0810N50100AHF BD2425J50200AHF C5060J5003AHF JHS-115-PIN JP503AS DC0710J5005AHF DC2327J5005AHF DC3338J5005AHF 43020 LFB2H2G60BB1C106 LFL15869MTC1B787 X3C19F1-20S XC3500P-20S 10013-20 SF2194E CDBLB455KCAX39-B0 TGL2208-SM, EVAL RF1353C PD0922J5050D2HF 1E1305-3 1G1304-30 B0922J7575AHF 2020-6622-20 TP-102-PIN TP-103-PIN BD1222J50200AHF