

Surface Mount

RF Transformer

SYTX2-61HP+

50Ω 12.5 Watt 10 to 60 MHz

The Big Deal

- High power handling, 12.5W
- Low insertion loss, 0.3 dB
- Small size, 0.43 x 0.69 x 0.42"



CASE STYLE: AH1647

Product Overview

Mini-Circuits' SYTX2-61HP+ is a high-power, DC isolated surface-mount transformer with a secondary/primary impedance ratio of 0.5 for applications from 10 to 60 MHz. With proper heat sinking, the transformer is capable of handling RF input power up to 12.5W. It provides very low insertion loss (0.3 dB) as well as low phase unbalance (3°) and amplitude unbalance (0.2 dB). Featuring core and wire construction mounted on a printed laminate base with wraparound terminations, the unit comes enclosed in a miniature, shielded package measuring just 0.43 x 0.69 x 0.42", ideal for dense circuit board layouts.

Key Features

| Feature | Advantages |
|--|---|
| High RF power handling (12.5W) and high DC current handling (30mA) | Supports systems with high power requirements and may be used to isolate DC current. |
| Low insertion loss, 0.3 dB | Excellent transmission of signal power from input to output. |
| Low phase and amplitude unbalance, 3°, 0.2 dB | Low phase and amplitude unbalance can improve a system's electromagnetic compatibility by rejecting unwanted common-mode noise. |
| Small footprint, 0.43 x 0.69 x .42" | Accommodates tight space requirements for 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 RF Transformer

SYTX2-61HP+

50Ω 12.5 Watt 10 to 60 MHz



CASE STYLE: AH1647

Maximum Ratings

| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power | 12.5W |
| DC Current | 30mA |

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

Pin Connections

| | |
|---------------|---------|
| PRIMARY DOT | 1 |
| PRIMARY | 4 |
| SECONDARY DOT | 5 |
| SECONDARY | 8 |
| GROUND | 2,3,6,7 |

Features

- high power input, 12.5 Watt max.
- wide bandwidth, 10 MHz
- good amplitude unbalance, 0.2 dB typ. at 1 dB bandwidth
- excellent phase unbalance 3 deg. typ. at 1 dB bandwidth

Applications

- PCS
- BALUN
- diode matching

Electrical Specifications at 25°C

| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|---------------------|-----------------|------|------|------|--------|
| Impedance Ratio | | | 0.5 | | |
| Frequency Range | | 10 | — | 60 | MHz |
| Insertion Loss* | 10-60 | — | 0.3 | 1.0 | dB |
| Amplitude Unbalance | 10-60 | — | 0.2 | 0.8 | dB |
| Phase Unbalance | 10-60 | — | 3 | 9 | Degree |

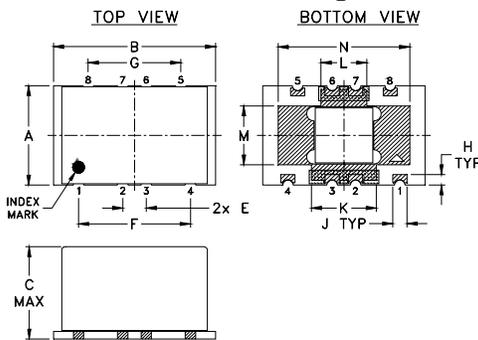
* Insertion Loss is referenced to mid-band loss 0.25 dB typ.

1. The user must provide adequate means of heat removal to limit the temperature of ground connections under the PCB to +85°C, in order to ensure proper performance. At 25°C ambient temperature this requires thermal resistance of the user's PC board heat sink to be 10°C/W.

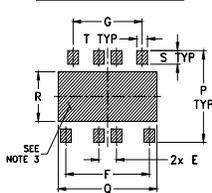
+RoHS Compliant

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

Outline Drawing



PCB Land Pattern

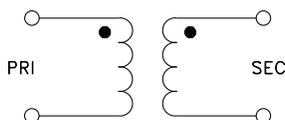


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

| A | B | C | E | F | G | H | J | K |
|-------|-------|-------|-------|-------|-------|------|------|-------|
| .433 | .690 | .415 | .100 | .476 | .394 | .045 | .060 | .276 |
| 11.00 | 17.53 | 10.54 | 2.54 | 12.09 | 10.01 | 1.14 | 1.52 | 7.01 |
| L | M | N | P | Q | R | S | T | wt |
| .194 | .257 | .560 | .475 | .561 | .258 | .069 | .061 | grams |
| 4.93 | 6.53 | 14.22 | 12.07 | 14.25 | 6.55 | 1.75 | 1.55 | 2.80 |

Config. C



Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp



www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

Typical Performance Data

| FREQUENCY (MHz) | INSERTION LOSS (dB) | INPUT R. LOSS (dB) | AMPLITUDE UNBALANCE (dB) | PHASE UNBALANCE (Deg.) |
|-----------------|---------------------|--------------------|--------------------------|------------------------|
| 10 | 0.24 | 15.69 | 0.01 | 0.86 |
| 12 | 0.25 | 16.36 | 0.02 | 1.16 |
| 14 | 0.25 | 16.49 | 0.03 | 1.38 |
| 16 | 0.26 | 16.44 | 0.05 | 1.58 |
| 18 | 0.27 | 16.26 | 0.05 | 1.80 |
| 20 | 0.28 | 16.01 | 0.06 | 2.00 |
| 30 | 0.36 | 14.41 | 0.14 | 3.03 |
| 40 | 0.48 | 12.86 | 0.26 | 4.11 |
| 50 | 0.64 | 11.54 | 0.41 | 5.23 |
| 60 | 0.80 | 10.35 | 0.59 | 6.43 |

