SURFACE MOUNT

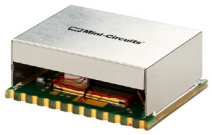
RF Transformer

SYTX3-41-80W+

16.7/50Ω 5 to 40 MHz 80 Watt 1:3 Ratio

KEY FEATURES

- High Power Input, up to 80 W
- Low Insertion Loss , 0.2 dB Typ.
- DC Isolated from IN to Out

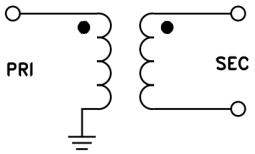


Generic photo used for illustration purposes only

APPLICATIONS

- Aerospace & Defense
- Industrial

CONFIGURATION E1



PRODUCT OVERVIEW

Mini-Circuits' SYTX3-41-80W+ is a high-power, surface-mount transformer with a secondary/primary impedance ratio of 1:3, covering the 5 to 40 MHz band. DC current isolated IN to OUT, the transformer is capable of handling RF input power up to 80W. It provides low insertion loss (0.2 dB) as well as good matching VSWR 1.57:1. Featuring core and wire construction mounted on PCB, the unit comes enclosed in a miniature, shielded package measuring just 1.22 x 0.93 x 0.47", ideal for dense circuit board layouts.

ELECTRICAL SPECIFICATIONS[1,2,3,4] AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Impedance Ratio			1:3		
Frequency Range		5		40	MHz
Insertion Loss (Avg.)	5 - 7.28	—	0.2	0.65	dB
	7.28 - 40	—	0.4	1.0	
Amplitude Unbalance	5 - 7.28	—	—	0.5	dB
	7.28 - 40	—	—	1.5	
Phase Unbalance	5 - 7.28	—	4.0	—	Degree
	7.28 - 40	—	17.0	—	
Primary Return Loss (Input)	5 - 7.28	13	—	—	dB
	7.28 - 40	13	—	—	

1. Nominal test impedances, Primary 50Ω to Secondary 16.7Ω.
2. Tested in Mini-Circuits Evaluation Board TB-SYTX3-4180W+. (Tested using Z conversion ON and Port extension ON)
3. 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.
4. At 25°C ambient temperature this requires thermal resistance of the users PC board heat sink to be 8°C/W.

ABSOLUTE MAXIMUM RATINGS[5]

Operating Temperature	0°C to +40°C
Storage Temperature	-55°C to +100°C
Input Power[6]	80 W

5. Permanent damage may occur if any of these limits are exceeded.
6. Power rating applies only to signals within the passband.

REV. OR
ECO-027031
STYX3-41-80W+
EDU5190
URJ
250923

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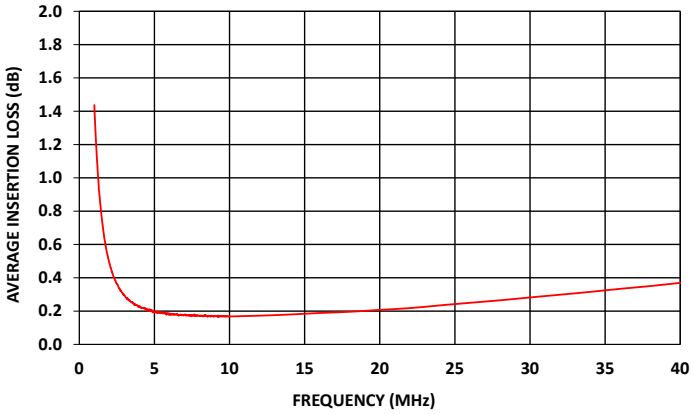
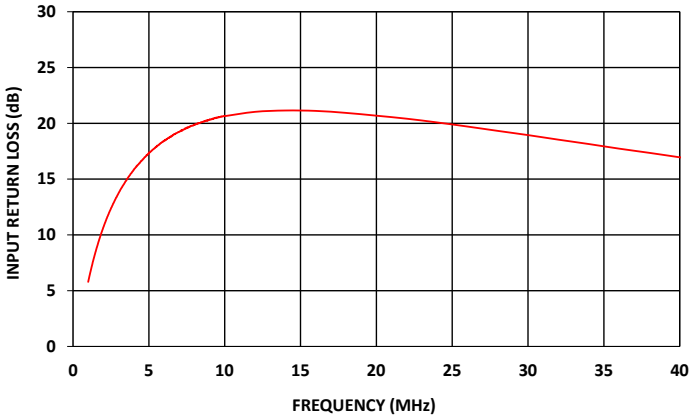
TYPICAL PERFORMANCE GRAPHS AT +25°C

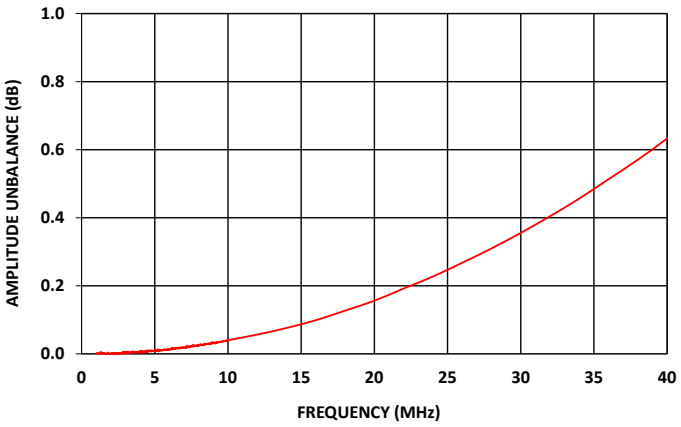
AVERAGE INSERTION LOSS



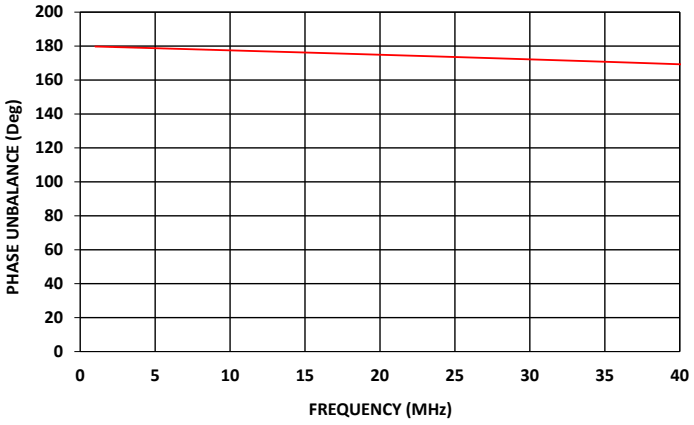
INPUT RETURN LOSS



AMPLITUDE UNBALANCE



PHASE UNBALANCE



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CONFIGURATION E1

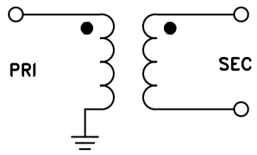


Figure 1. SYTX3-41-80W+ Configuration

PAD DESCRIPTION

Function	Pad Number	Description
Primary Dot	10	Connects to Input
Secondary Dot	15	Connects to Output 1
Secondary	24	Connects to Output 2
GND	All others	Connects to Ground on PCB, (See drawing PL-437)

SUGGESTED PCB LAYOUT (PL-437)

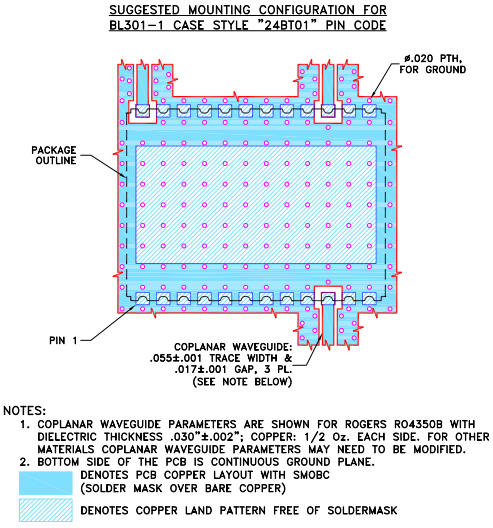
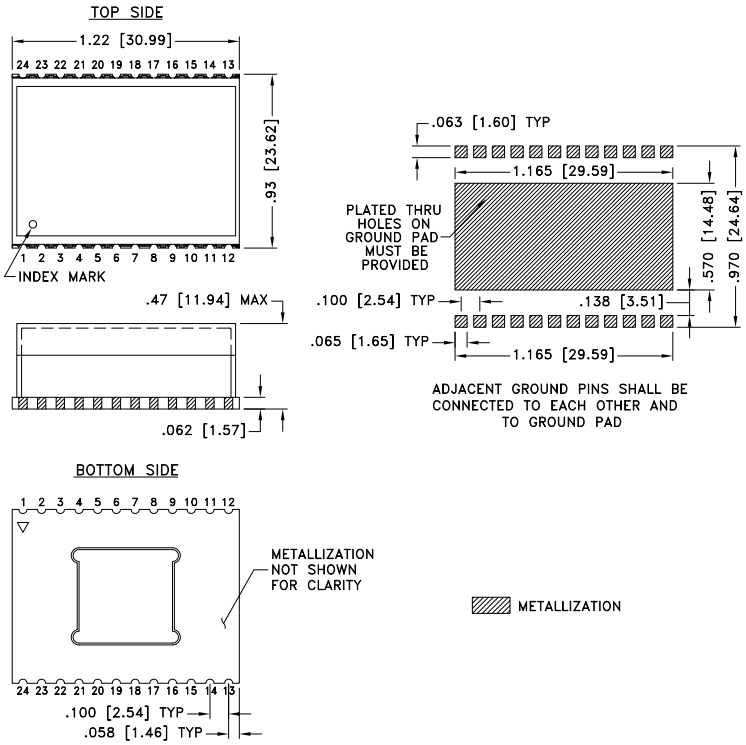


Figure 2. Suggested PCB Layout PL-437

CASE STYLE DRAWING



Weight: 12.4 grams

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

PRODUCT MARKING*: SYTX3-41-80W

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

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ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASHBOARD CLICK HERE

Performance Data & Graphs	Data Graphs S-Parameter (S3P Files) Data Set (.zip file) De-embedded to device pads
Case Style	BL301-3 Lead Finish: Gold over Nickel Plate
RoHS Status	Compliant
Tape and Reel	N/A
Suggested Layout for PCB Design	PL-437
Evaluation Board	TB-SYTX3-4180W+ Gerber File
Environmental Rating	ENV02T4

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-Circuits' 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