SURFACE MOUNT top hat®

This model is a reference design for Ampleon BLP35M805

RF Transformer

SYTX1-52HP15W1+

50Ω 15 Watt 20 to 520 MHz

THE BIG DEAL

- High power handling, 15W
- Low insertion loss, 0.4 dB
- Excellent amplitude unbalance, 0.15 dB
- Excellent phase unbalance, 1°
- Small size, 0.43 x 0.69 x 0.28″

Generic photo used for illustration purposes only

CASE STYLE: AH1647-4

+RoHS Compliant

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

APPLICATIONS

- Military radios
- VHF/UHF radios

PRODUCT OVERVIEW

Mini-Circuits' SYTX1-52HP15W1+ is a high-power, surface-mount transformer with a secondary/primary impedance ratio of 1:1, covering the 20 to 520 MHz band. With proper heat sinking, the transformer is capable handling RF input power up to 15W and DC current up to 30mA. It provides low insertion loss (0.4 dB) as well as very low phase unbalance (1°) and amplitude unbalance (0.15 dB). Featuring core and wire construction mounted on a printed laminate base, the unit comes enclosed in a miniature, shielded package measuring just 0.43 x 0.69 x 0.28″, ideal for dense circuit board layouts.

KEY FEATURES

Feature	Advantages
High RF power handling (15W) and high DC current handling (30mA)	Supports systems with high power requirements in small device size.
Low phase and amplitude unbalance – 1°, 0.15 dB	Good phase and amplitude unbalance can improve a system's electromagnetic compatibility by rejecting unwanted common-mode noise.
Low insertion loss, 0.4 dB	Provides excellent transmission of signal power from input to output.
Small footprint, 0.43 x 0.69 x 0.28″	Accommodates tight space requirements for dense PCB layouts.

REV. OR
NPO-002593
SYTX1-52HP15W1+
ED-16041201/1
IG/CP/AM
220310

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RF Transformer SYTX1-52HP15W1+

ELECTRICAL SPECIFICATIONS AT 25°C

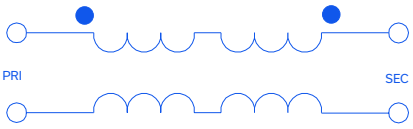
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Impedance Ratio			1		
Frequency Range		20		520	dB
Insertion Loss	20-520	—	0.4	1.0	dB
Amplitude Unbalance	20-520	—	0.15	0.5	dB
Phase Unbalance	20-520	—	2	10	Degree
Power Handling at Input	20-520	—	—	15	dB

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.

MAXIMUM RATINGS

Parameter	Ratings
Operating temperature	-40°C to 85°C
Storage temperature	-55°C to 100°C
RF Power	15W
DC Current	30 mA

CONFIGURATION G



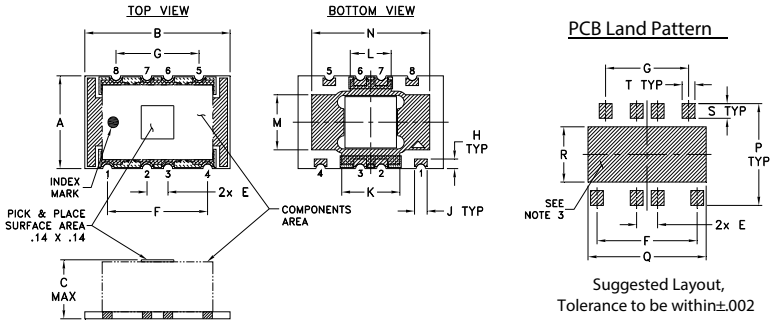
RF Transformer SYTX1-52HP15W1+

PAD CONNECTIONS

PRIMARY DOT	1
PRIMARY	4
SECONDARY DOT	8
SECONDARY	5
GND	2,3,6,7

PRODUCT MARKING: VU

OUTLINE DRAWING



OUTLINE DIMENSIONS (Inches / mm)

A	B	C	E	F	G	H	J	K
.433	.690	.275	.100	.476	.394	.045	.060	.276
11.00	17.53	6.99	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

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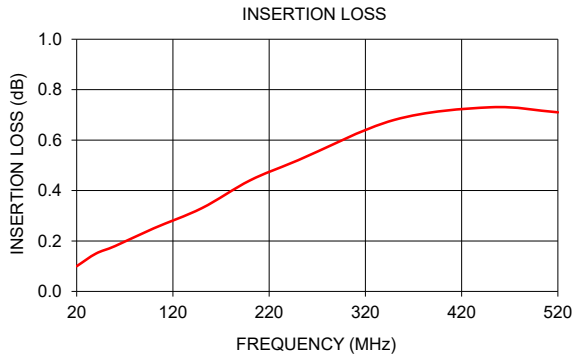
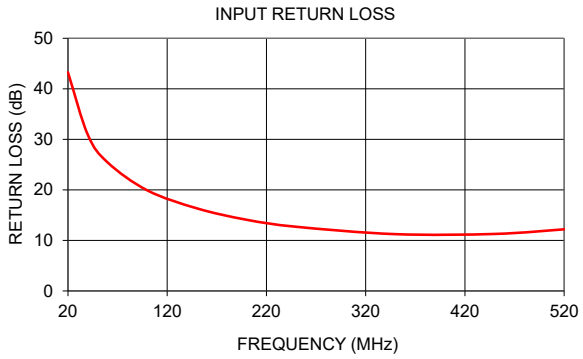
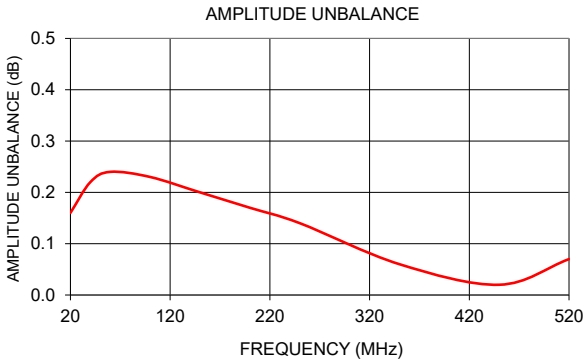
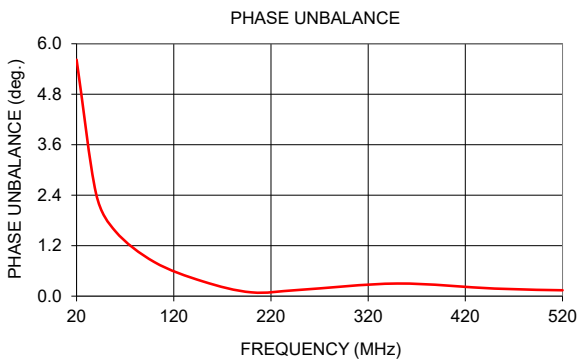
TYPICAL PERFORMANCE DATA

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (deg)
20	0.10	43.25	0.16	5.62
40	0.15	30.91	0.22	2.44
60	0.18	25.43	0.24	1.54
100	0.25	19.90	0.23	0.81
150	0.33	16.34	0.20	0.35
200	0.44	14.09	0.17	0.09
250	0.52	12.70	0.14	0.15
350	0.68	11.24	0.06	0.30
450	0.73	11.28	0.02	0.18
520	0.71	12.20	0.07	0.14









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