



SURFACE MOUNT

# RF Transformer

## TXA4-512HP+

50/12.5Ω 30 to 512 MHz 5 Watt

### THE BIG DEAL

- High power input, 5 Watt max.
- Wide bandwidth, 30 to 512 MHz
- Good amplitude unbalance, 0.3 dB typ.
- Excellent phase unbalance 2 deg. typ.
- Balanced transmission line



*Generic photo used for illustration purposes only*

CASE STYLE: PE1259

### +RoHS Compliant

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

### APPLICATIONS

- PCS
- Cellular

### PRODUCT OVERVIEW

Mini-Circuits' TXA4-512HP+ is a high-power, surface-mount balanced transmission line transformer supporting applications from 50 to 512 MHz. This model provides a primary/secondary impedance ratio of 1/4 and RF input power handling up to 5W. The transformer is constructed on printed wire laminate with a Nickel-Silver alloy case (0.72 x 0.55 x 0.23") and wraparound terminations for excellent solderability.

### KEY FEATURES

Features	Advantages
Wide bandwidth, 30 to 512 MHz	TXA4-512HP+ covers primary application bands for PCS and cellular systems.
High input power, 5W	The transformer supports systems with high operating power requirements.
Low insertion loss, 0.6 dB	Excellent transmission of signal power from input to output.
Small footprint, (0.72 x 0.55 x 0.23")	Accommodates tight space requirements for dense PCB layouts.

REV. A  
ECO-017642  
TXA4-512HP+  
MCL NY  
230808





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### ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio (primary/secondary)			50/12.5		Ohm
Frequency Range		30	—	512	MHz
Insertion Loss <sup>1</sup>	30-200	—	0.5	1.0	dB
	200-512	—	0.7	1.5	
Amplitude Unbalance	30-200	—	0.2	0.5	dB
	200-512	—	0.2	0.5	
Phase Unbalance	30-200	—	2	5	Degree
	200-512	—	1	5	

1. Insertion Loss is referenced to mid-band loss 0.4 dB typ.

The user must provide adequate means of heat removal to limit the temperature of ground connections under the PCB to 65°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

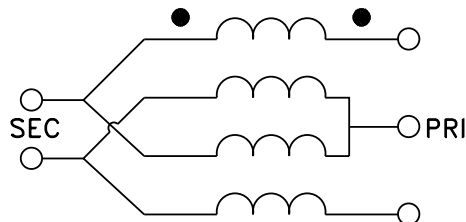
Parameter	Ratings
Operating Temperature	-40°C to 65°C
Storage Temperature	-55°C to 100°C
RF Power	5W
DC Current	30mA

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

### PIN CONNECTIONS

PRIMARY DOT	2
PRIMARY	1
SECONDARY DOT	7
SECONDARY	8
GROUND	all others

### CONFIG. H





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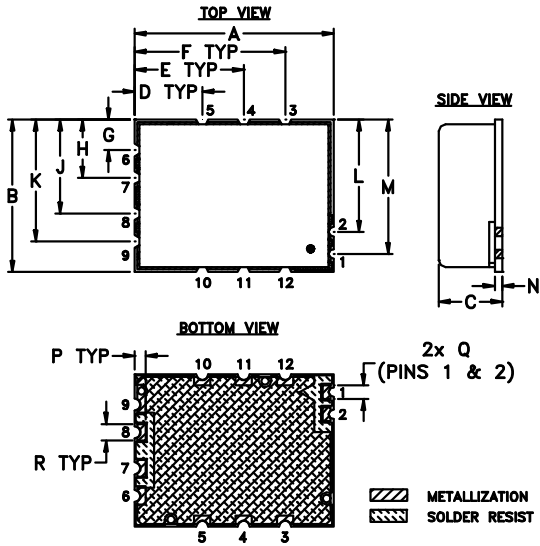
# RF Transformer

## TXA4-512HP+

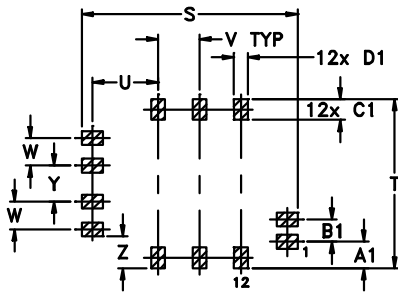
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### OUTLINE DRAWING



### PCB Land Pattern



Suggested Layout,  
Tolerance to be within  $\pm 0.002$

### OUTLINE DIMENSIONS (Inch/mm)

A	B	C	D	E	F	G	H	J	K
.720	.550	.23	.245	.395	.545	.110	.210	.340	.440
-18.29	13.97	5.84	6.22	10.03	13.84	2.79	5.33	8.64	11.18
L	M	N	P	Q	R	S	T	U	V
.405	.485	.028	.040	.050	.060	.780	.610	.238	.150
-10.29	12.32	0.71	1.02	1.27	1.52	19.81	15.49	6.05	3.81
W	Y	Z	A1	B1	C1	D1			wt
.100	.130	.115	.095	.080	.075	0.05			grams
2.54	3.30	2.92	2.41	2.03	1.91	1.27			1.20



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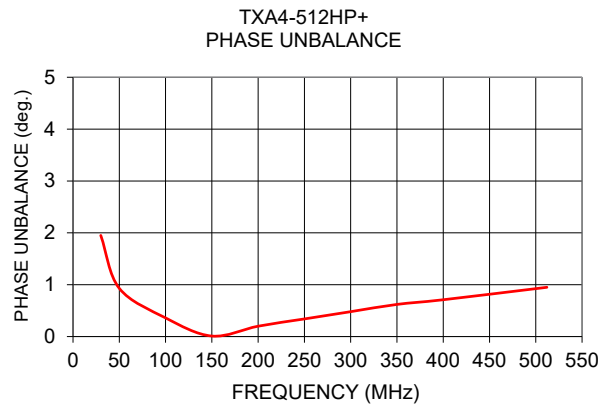
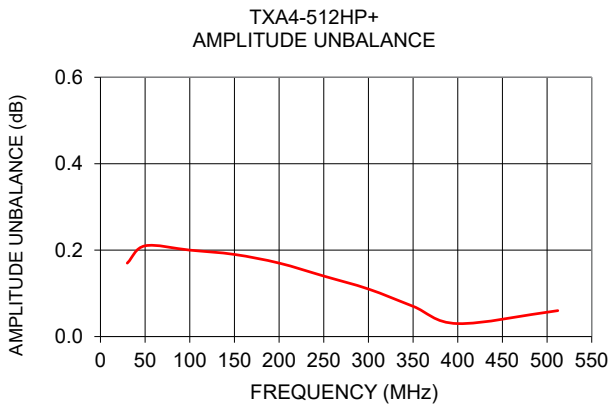
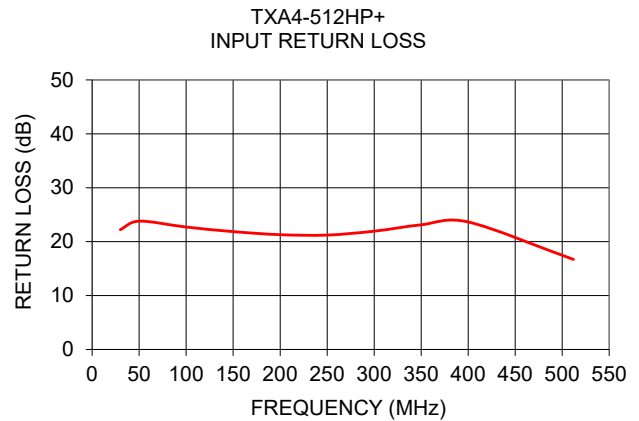
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### TYPICAL PERFORMANCE DATA

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
30.00	0.49	22.23	0.17	1.95
50.00	0.57	23.80	0.21	0.93
100.00	0.68	22.71	0.20	0.36
150.00	0.74	21.86	0.19	0.01
200.00	0.77	21.29	0.17	0.20
250.00	0.80	21.22	0.14	0.34
300.00	0.83	21.94	0.11	0.48
350.00	0.86	23.12	0.07	0.62
400.00	0.90	23.65	0.03	0.71
512.00	1.12	16.70	0.06	0.95



#### 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](http://www.minicircuits.com/terms/viewterm.html)

