

 $50\Omega$  4.5 to 3000 MHz

## **Features**

- wideband, 4.5 to 3000 MHz
- balanced transmission line
- good return loss
- excellent amplitude unbalance, 0.5 dB typ. and phase unbalance, 2 deg typ. in 1 dB bandwidth
- plastic base with leads
- · aqueous washable

### **Applications**

- balanced to unbalanced transformation
- push-pull amplifiers
- PCS/DCS
- MMDS

## TC1-1-13MX+



Generic photo used for illustration purposes only

CASE STYLE: AT1521

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



## Electrical Specifications at 25°C

Parameter	Condition	Min.	Тур.	Max.	Unit
Impedance Ratio			1		Ohm
Frequency Range		4.5		3000	MHz
Insertion Loss*	2000-3000		3.0		
	1000-2000		2.0		dB
	4.5-1000		1.0		
Amplitude Unbalance	4.5-1000		0.5		dB
	1000-2000		0.5		
Phase Unbalance	4.5-1000		2		Dograd
	1000-2000		3		Degree

<sup>\*</sup> Insertion Loss is referenced to mid-band loss, 0.5 dB typ.

## **Maximum Ratings**

Parameter	Ratings		
Operating Temperature	-40°C to 85°C		
Storage Temperature	-55°C to 100°C		
RF Power	0.25W		
DC Current	30mA		

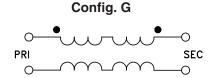
Permanent damage may occur if any of these limits are exceeded.

#### **Pin Connections**

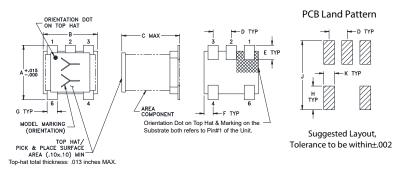
Function	Pin Number		
PRIMARY DOT	6		
PRIMARY	4		
SECONDARY DOT	1		
SECONDARY	3		
NOT USED	2		

## **Product Marking**





## **Outline Drawing**



## Outline Dimensions (inch )

A B C D E F G H J 1.150 .150 .160 .050 .040 .025 .028 .065 .190 3.81 3.81 4.06 1.27 1.02 0.64 0.71 1.65 4.83

## **Typical Performance Data**

INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
0.18	31.52	0.69	3.81
0.18	34.60	0.56	1.78
0.19	33.50	0.56	0.11
0.24	29.68	0.55	0.19
0.46	19.52	0.45	0.81
0.68	16.22	0.14	1.59
0.90	15.89	0.29	0.89
1.11	16.97	0.71	1.28
1.62	12.88	0.78	5.79
3.02	6.79	0.49	12.32
	0.18 0.18 0.19 0.24 0.46 0.68 0.90 1.11 1.62	LOSS (dB)  0.18 31.52 0.18 34.60 0.19 33.50 0.24 29.68 0.46 19.52 0.68 16.22 0.90 15.89 1.11 16.97 1.62 12.88	LOSS (dB)  0.18 31.52 0.69 0.18 34.60 0.56 0.19 33.50 0.56 0.24 29.68 0.46 19.52 0.45 0.68 16.22 0.14 0.90 15.89 0.29 1.11 162 12.88 0.78





#### **Additional 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

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