



Mini-Circuits

SURFACE MOUNT



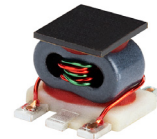
RF Transformer

TCM2-722X+

50/100Ω 400 to 7200 MHz

KEY FEATURES

- Ultra-wide bandwidth 400-7200 MHz
- One model covers all telecommunication bands
- Aqueous washable
- Protected by US Patent 9,071,229B1



Generic photo used for illustration purposes only

APPLICATIONS

- Differential modulator/demodulator and active mixers
- Wideband push-pull amplifiers
- LTE, Cellular, PCS, UMTS, Wi-Fi, WiMAX

CONFIGURATION G



PRODUCT OVERVIEW

Mini-Circuits' TCM2-722X+ is a surface-mount, transmission line, core and wire transformer covering a very wide frequency range, specified from 400 to 7200 MHz and usable from 100 to 7200 MHz. The transformer provides a 1:2 impedance ratio with low insertion loss, excellent flatness, as well as low phase and amplitude unbalance. Featuring core and wire construction on a 6-lead plastic base with tin over nickel termination finish. The unit measures 0.16" x 0.15" x 0.16" accommodating dense circuit board layouts. It also incorporates the Mini-Circuits' Top Hat® feature for faster, more accurate pick-and-place assembly and easy visual inspection.

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Impedance Ratio		2			
Frequency Range		400		7200	MHz
Insertion Loss (Avg.)	400 – 4300		1	2.0	dB
	4300 – 7200		2.2	3.5	
Amplitude Unbalance	400 – 4300		0.5	2.0	dB
	4300 – 7200		1.9	3.2	
Phase Unbalance	400 – 4300		4	10	Degree
	4300 – 7200		10	—	
Primary Return Loss (Input)	400 – 4300		13		dB
	4300 – 7200		10		

ABSOLUTE MAXIMUM RATINGS²

Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power	0.2 W

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

REV. A
ECO-025824
TCM2-722X+
MCL NY
250616





Mini-Circuits

SURFACE MOUNT

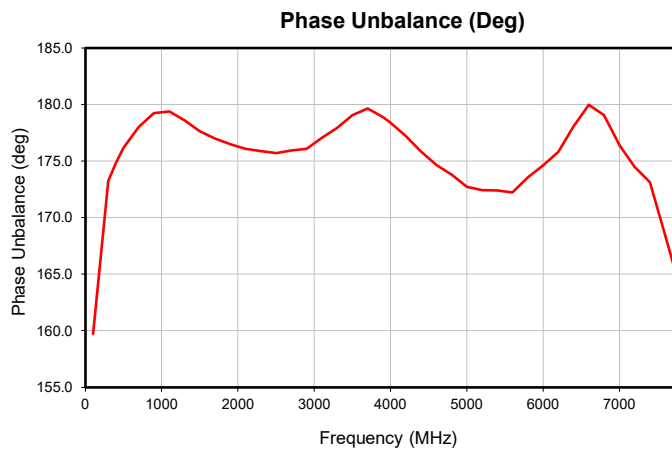
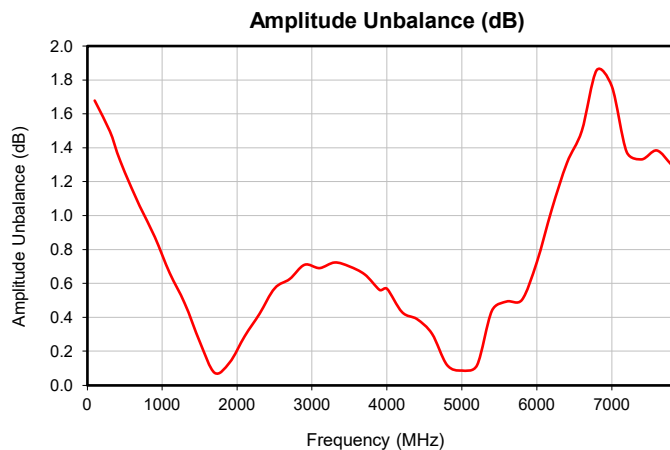
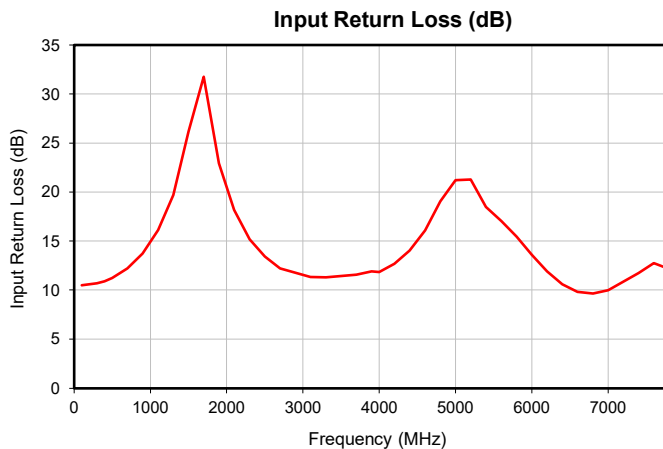
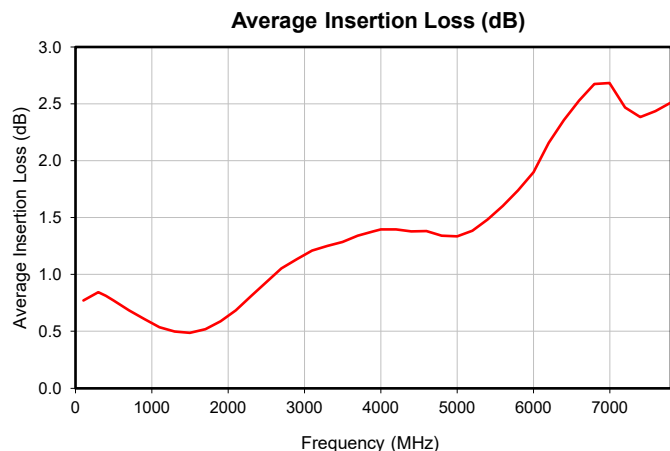


RF Transformer

TCM2-722X+

50/100Ω 400 to 7200 MHz

TYPICAL PERFORMANCE GRAPHS





CONFIGURATION G

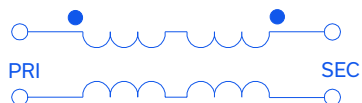
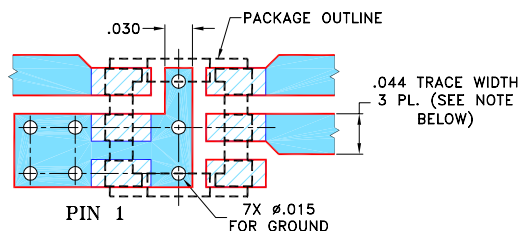


Figure 1. TCM2-722X+ Configuration

PAD DESCRIPTION

Function	Pad Number	Description
Primary Dot	3	Connects to RF-IN
Primary	1,2	Connects to GND
Secondary Dot	5	Out 1
Secondary	4	Out 2
Not Connected (NC)	6	Not Used

SUGGESTED PCB LAYOUT (PL-395)

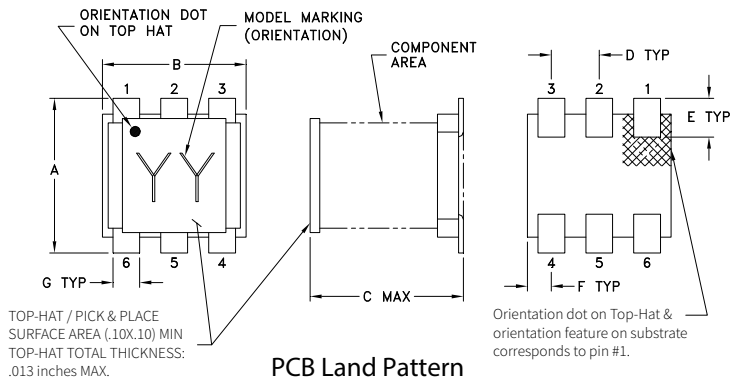


NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

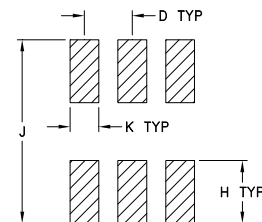
-  DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Figure 2. Suggested PCB Layout PL-395

CASE STYLE DRAWING



PCB Land Pattern



SUGGESTED LAYOUT
TOLERANCE TO BE WITHIN ±.002

OUTLINE DIMENSIONS (Inch mm)

A	B	C	D	E	F
.160	.150	.160	.050	.040	.025
4.06	3.81	4.06	1.27	1.02	0.64
G	H	J	K		wt
.028	.065	.190	.030		grams
0.71	1.65	4.83	0.76		0.15

PRODUCT MARKING*: BQ

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



Mini-Circuits

SURFACE MOUNT

top hat



RF Transformer

TCM2-722X+

50/100Ω 400 to 7200 MHz

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	DB1627 Lead Finish: Pure Tin
RoHS Status	Compliant
Tape and Reel	F47
Suggested Layout for PCB Design	PL-395
Evaluation Board	TB-TCM2-722X+ Gerber File
Environmental Rating	ENV02T1

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-Circuits' applicable established test performance criteria and measurement instructions.
- 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

