CERAMIC RESONATOR SURFACE MOUNT

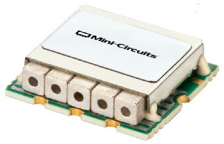
Band Pass Filter

CBP2-2400CC+

50Ω 2200 to 2600 MHz

THE BIG DEAL

- Good Insertion Loss, 1.2 dB Typ.
- Excellent Rejection, 70 dB Typ.
- Good Return Loss, 16 dB Typ.
- Miniature Shielded Package

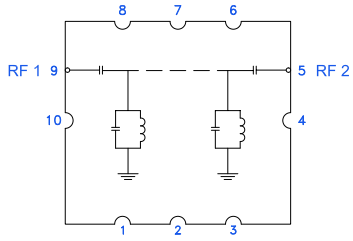


Generic photo used for illustration purposes only

APPLICATIONS

- Test and Measurement
- Bluetooth
- WLAN

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

All our coaxial-ceramic resonator filters are built with rugged construction, qualified to withstand multiple demanding reflow cycles. Excellent repeatability across units is achieved through precise tuning and process control.

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

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	—	—	—	2400	—	MHz
	Insertion Loss	F1-F2	2200 - 2600	—	1.2	1.7	dB
	Return Loss	F1-F2	2200 - 2600	10	16	—	dB
Stopband, Lower	Rejection	DC-F3	DC - 1100	60	70	—	dB
		F3-F4	1100 - 1990	20	30	—	
Stopband, Upper	Rejection	F5-F6	3000 - 3400	20	30	—	dB
		F6-F7	3400 - 4100	34	42	—	

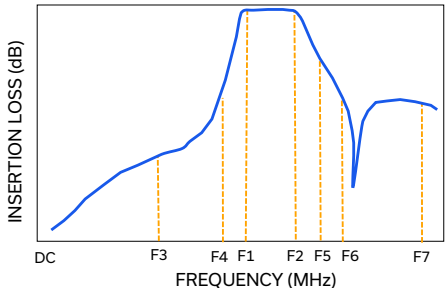
1. Tested in Evaluation Board P/N TB-CBP2-2400CC+.
2. This component should not be used as a DC-block. In applications where DC voltage and/or current is present at either the input or output ports, external DC blocking capacitors are required.

ABSOLUTE MAXIMUM RATINGS[3]

Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power[4]	10 W at +25°C

3. Permanent damage may occur if any of these limits are exceeded.
4. Power rating applies only to signals within the passband. Power rating above +25°C operating temperature decreases linearly to 2 W at +85°C.

TYPICAL FREQUENCY RESPONSE



REV. OR
ECO-030813
EDU5242
CBP2-2400CC+
MCINU
260825

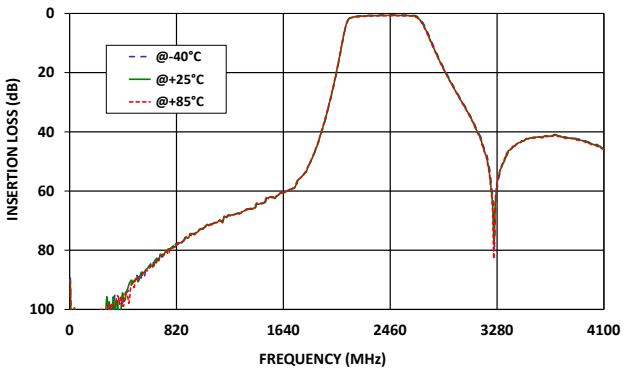
Band Pass Filter

CBP2-2400CC+

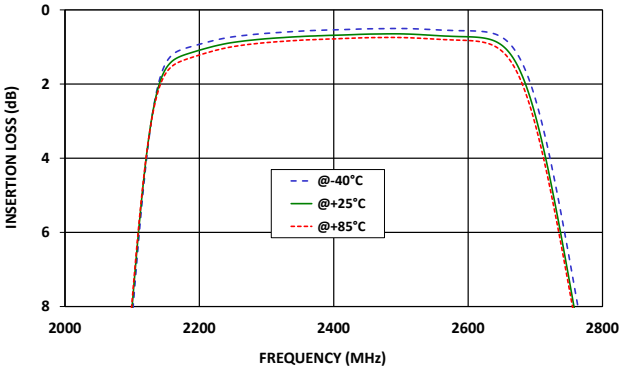
50Ω 2200 to 2600 MHz

TYPICAL PERFORMANCE GRAPHS

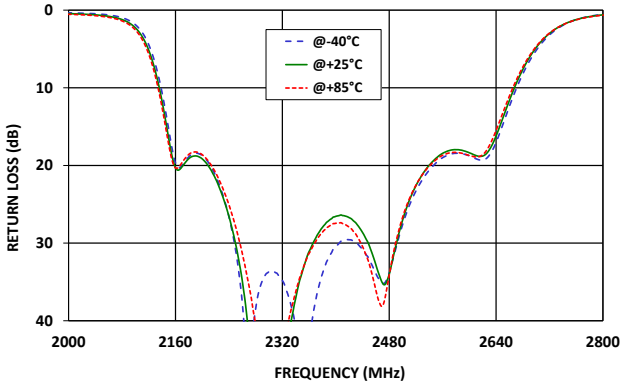
CBP2-2400CC+
INSERTION LOSS



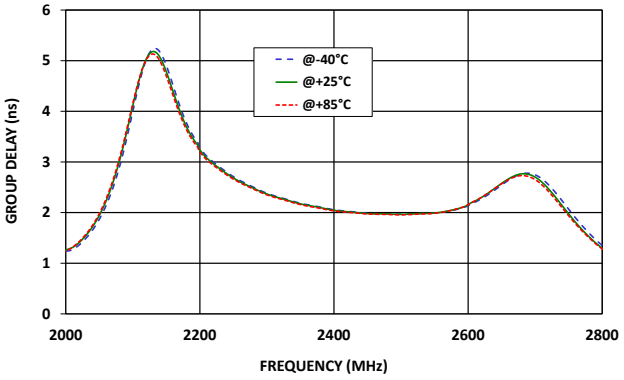
CBP2-2400CC+
INSERTION LOSS (Zoomed)



CBP2-2400CC+
RETURN LOSS (Zoomed)



CBP2-2400CC+
GROUP DELAY



CERAMIC RESONATOR SURFACE MOUNT

Band Pass Filter

CBP2-2400CC+

50Ω 2200 to 2600 MHz

FUNCTIONAL DIAGRAM

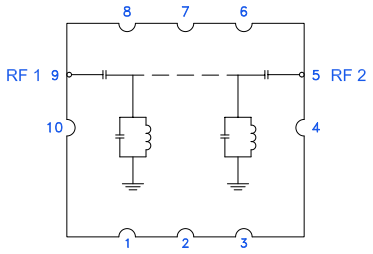
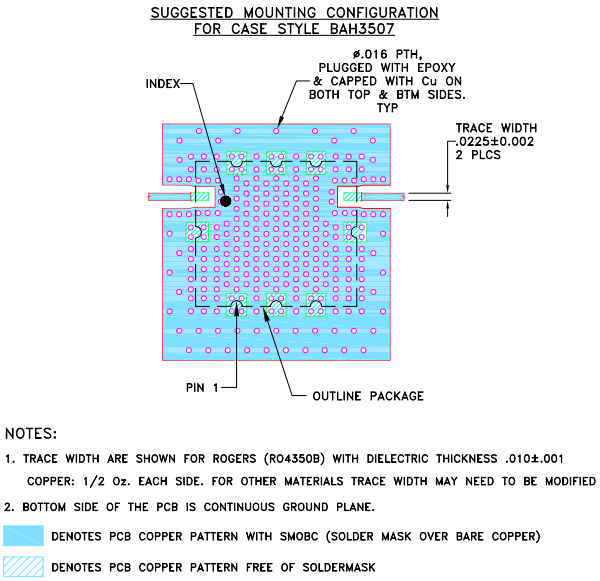


Figure 1. CBP2-2400CC+ Functional Diagram

PAD DESCRIPTION

Function	Pad Number	Description
RF1	9	Connects to RF Input Port
RF2	5	Connects to RF Output Port
GROUND	1-4,6-8,10	Connects to Ground on PCB, (See drawing PL-794)

SUGGESTED PCB LAYOUT



NOTES:

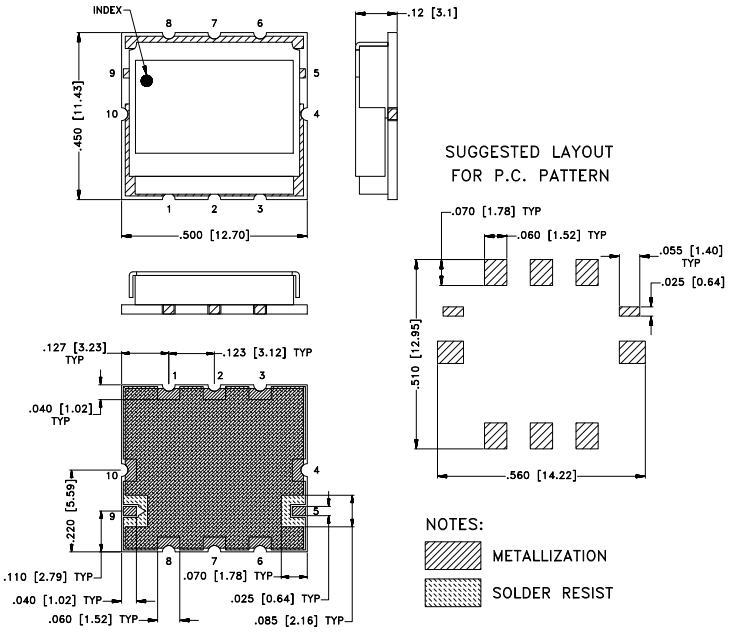
1. TRACE WIDTH ARE SHOWN FOR ROGERS (RO4350B) WITH DIELECTRIC THICKNESS .010±.001 COPPER: 1/2 Oz. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER PATTERN WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES PCB COPPER PATTERN FREE OF SOLDERMASK

Figure 2. Suggested PCB Layout

CASE STYLE DRAWING



Weight: 1 gram
Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015

PRODUCT MARKING*: CBP2-2400CC

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

Band Pass Filter

CBP2-2400CC+

50Ω 2200 to 2600 MHz

ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASHBOARD CLICK HERE

Performance Data & Graphs	Data Graphs S-Parameter (S2P Files) Data Set (.zip file) De-embedded to device pads
Case Style	BAH3507 Lead Finish: Gold over Nickel Plate
RoHS/REACH Status	Compliant
Tape and Reel	F014
Suggested Layout for PCB Design	PL-794
Evaluation Board	TB-CBP2-2400CC+ Gerber File
Environmental Rating	ENV54
MSL Level	MSL1

NOTES

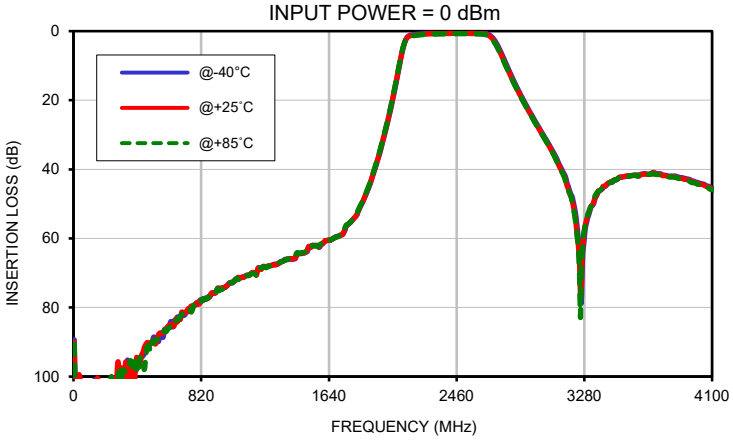
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.

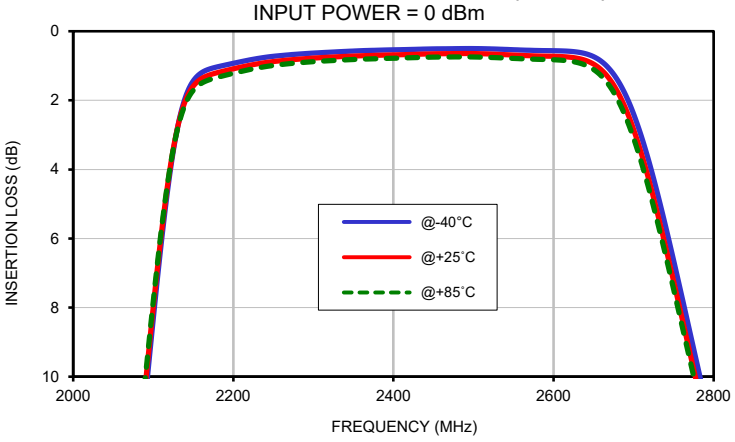
C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html

Typical Performance Curves

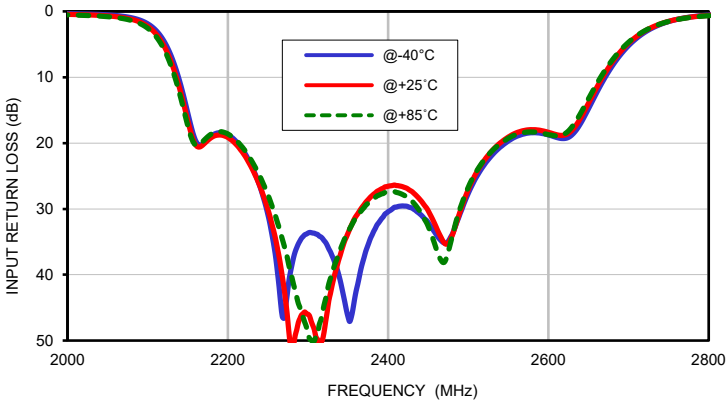
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



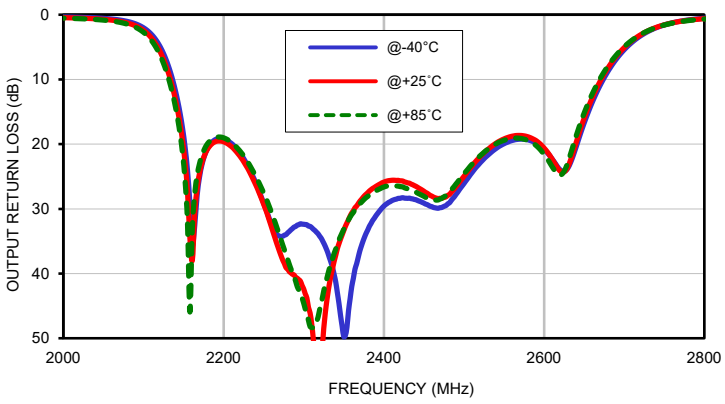
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



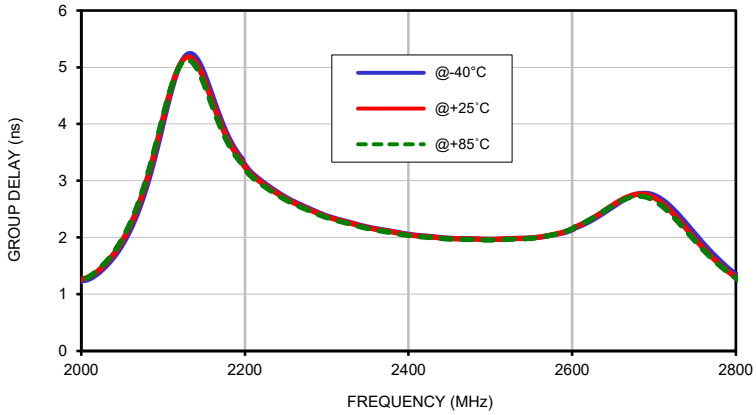
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



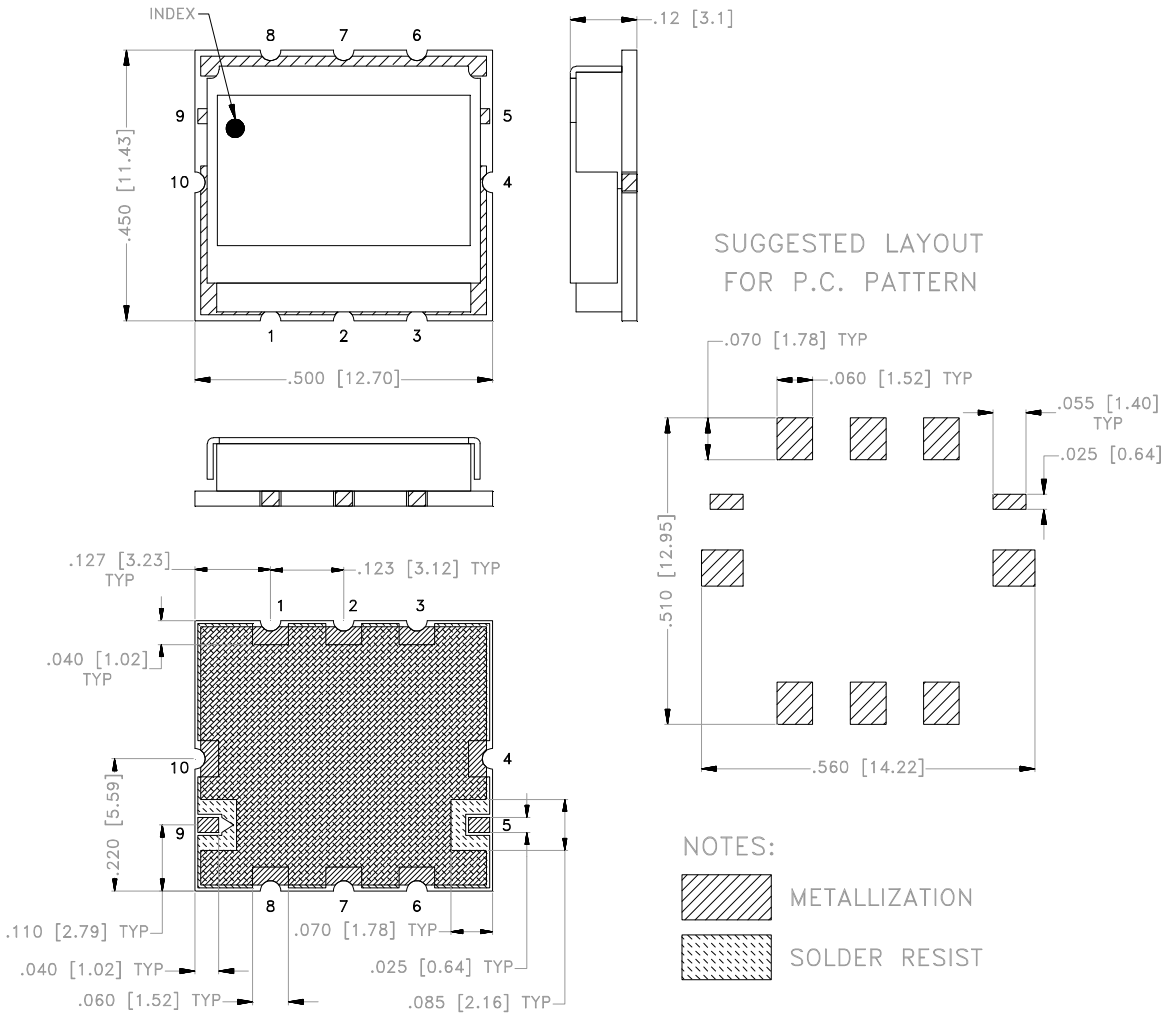
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



Case Style BAH

Outline Dimension

BAH3507



Dimensions are in inches [mm]. Tolerances: 2 Pl ± .03; 3 Pl ± .015

Notes:

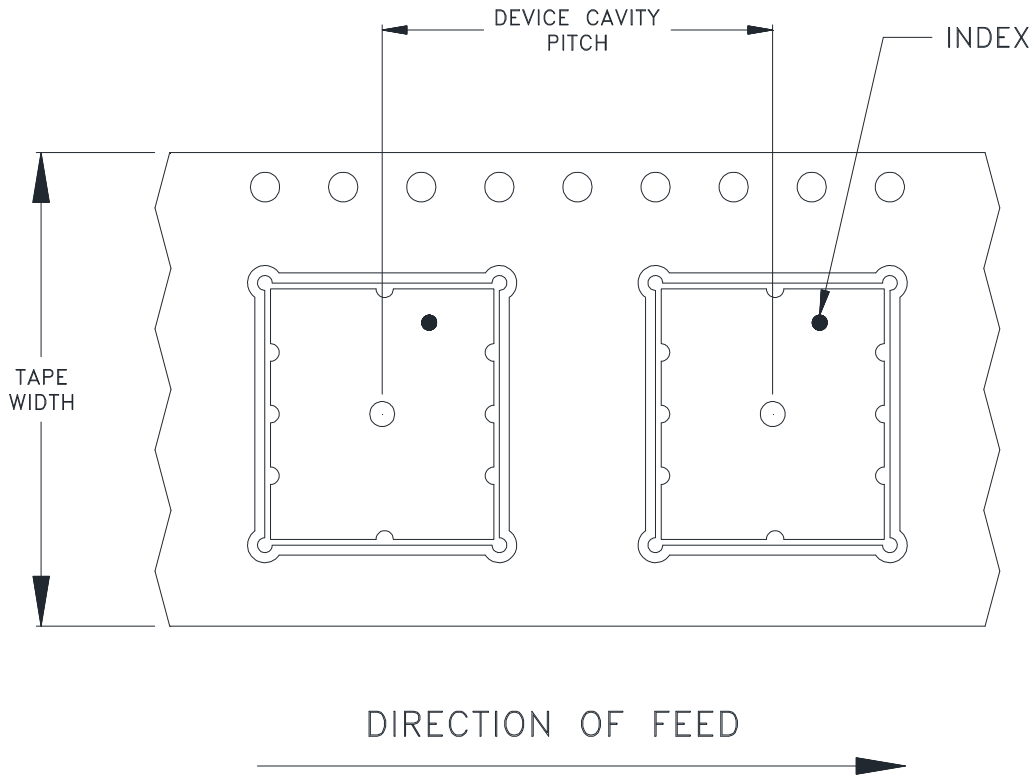
1. Case material: Nickel-Silver alloy.
2. Base: Printed wiring laminate.
3. Unit Weight: 1 gram
4. Termination finish:
   For RoHS Case Styles: 2-5 µ inch (.05-.13 microns) Gold over 120-240 µ inch (3.05-6.10 microns) Nickel plate.
   All models, (+) suffix.

Mini-Circuits®
ISO 9001 ISO 14001 CERTIFIED
ALL NEW minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site
The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com
RF/IF MICROWAVE COMPONENTS

This document and its contents are the property of Mini-Circuits

Tape & Reel Packaging TR-F014

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel See note	
24	20	13	Small quantity standards	10
				20
				50
				100
			Standard	400

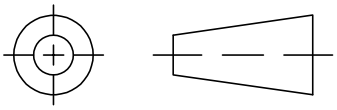
Note: Please consult individual model data sheet/dashboard to determine device per reel availability. Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
Mini-Circuits ISO 9001 & ISO 14001 Certified

This document and its contents are the property of Mini-Circuits.

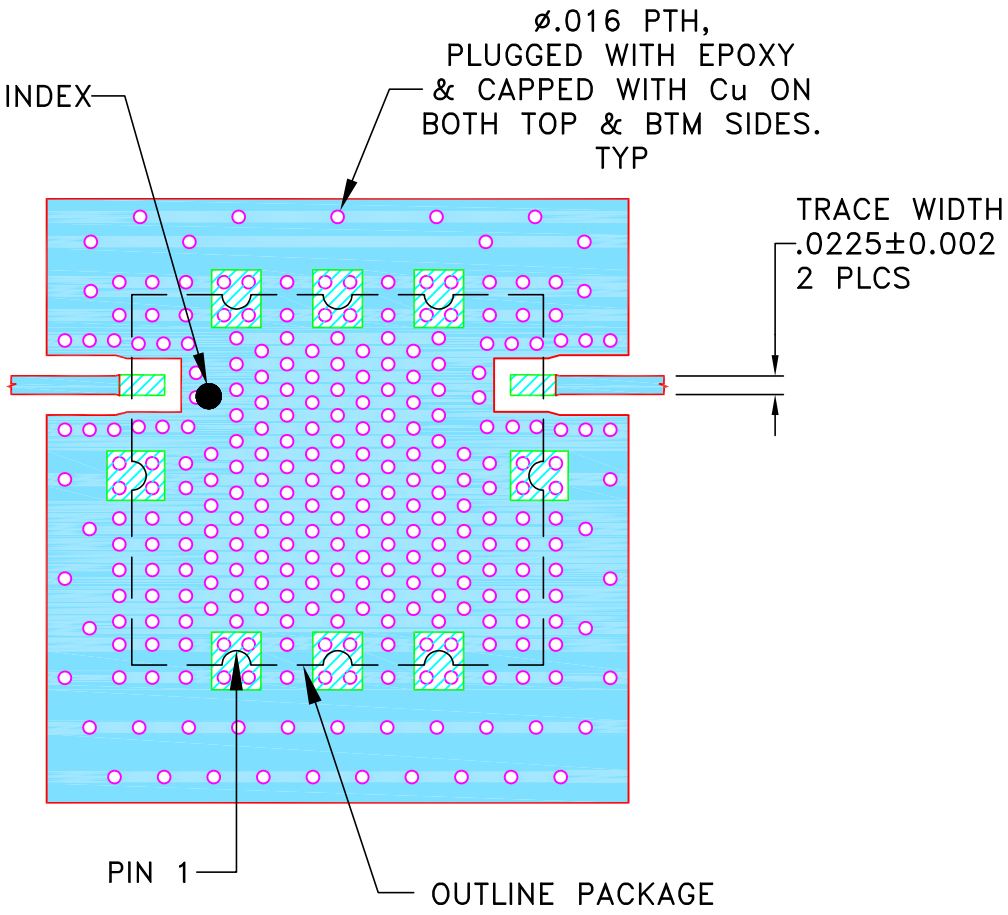
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	NPO-004638	NEW RELEASE	SEP 24	SS	VR

SUGGESTED MOUNTING CONFIGURATION FOR CASE STYLE BAH3507



NOTES:

1. TRACE WIDTH ARE SHOWN FOR ROGERS (RO4350B) WITH DIELECTRIC THICKNESS .010±.001
   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 PATTERN WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES PCB COPPER PATTERN FREE OF SOLDERMASK

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	SS	09 SEP 24
TOLERANCES ON:	CHECKED	LK	09 SEP 24
2 PL DECIMALS ±	APPROVED	KSK	09 SEP 24
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

Mini-Circuits®

THIS DOCUMENT AND ITS CONTENTS ARE THE PROPERTY OF MINI-CIRCUITS.
EXCEPT FOR USE EXPRESSLY GRANTED, IN WRITING, TO ITS VENDORS, VENDEE AND THE UNITED STATES GOVERNMENT, MINI-CIRCUITS RESERVES ALL PROPRIETARY DESIGN, USE , MANUFACTURING AND REPRODUCTION RIGHTS THERETO.
THESE CONTENTS SHALL NOT BE USED, DUPLICATED OR DISCLOSED TO ANY OUTSIDE PARTY, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION OF MINI-CIRCUITS.

ASHEETA1.DWG REV:A DATE:01/12/95

Mini-Circuits®
13 Neptune Avenue
Brooklyn NY 11235

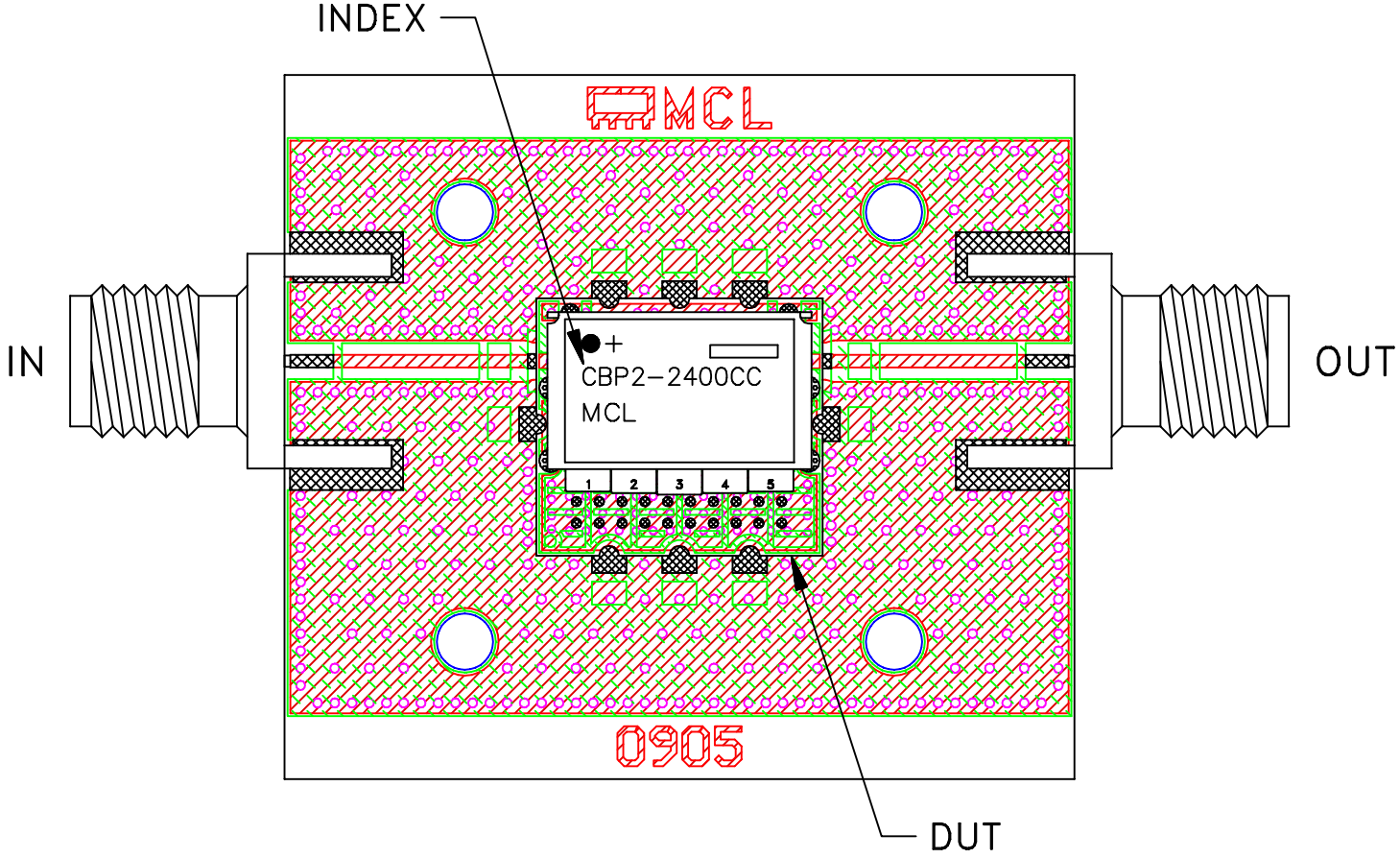
PL DWG, BAH3507, TB-1265

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-794	OR

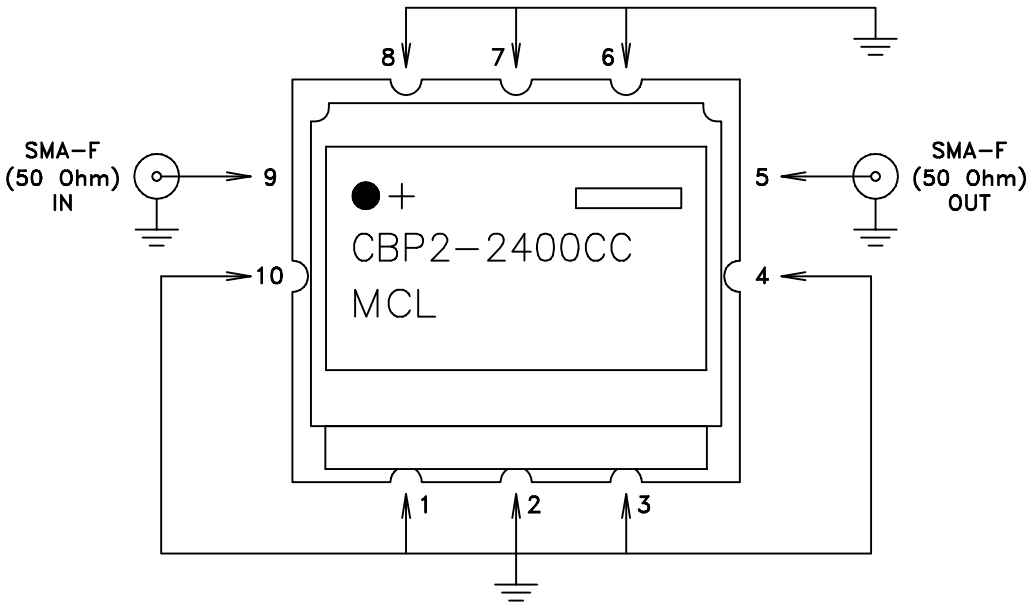
FILE:	SCALE:	SHEET:
98-PL-794	3.5:1	1 OF 1

Evaluation Board and Circuit

TB-CBP2-2400CC+



Schematic diagram



Notes:

1. PCB Material: ROGERS (RO4350B) OR Equivalent, Dielectric Constant=3.48
   Thickness=.010 inch
2. 50 Ohm SMA Female Connector.

Mini-Circuits®

THIS DOCUMENT AND ITS CONTENTS ARE THE PROPERTY OF MINI-CIRCUITS.

Mini-Circuits

Environmental Specifications ENV54

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 96 hours, 40°C	MIL-STD-202, Method 103B, Condition B, Except 50°C
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutectic Process: 225°C peak Pb-Free Process, 245°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Vibration (High Frequency)	20g peak, 10-2000 Hz, 4 times in each of three axes (total 12)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A

This document and its contents are the property of Mini-Circuits.