WINSOURCE ELECTRONICS

THE DATASHEET OF

RCBT-63H+

SURFACE MOUNT

Bias Tee

RCBT-63H+

50Ω Wideband 900 to 6000 MHz

THE BIG DEAL

- Low Insertion Loss, 0.3 dB Typ.
- 2.5 A DC Current
- Good Isolation, 20 dB Typ.
- Good Return Loss, 18 dB Typ.
- Miniature Surface Mount, 0.31x0.25"
- Aqueous Washable



Generic photo used for illustration purposes only

CASE STYLE: TT1224-2

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

APPLICATIONS

- Biasing Amplifiers
- Biasing of Laser Diodes
- Biasing of Active Antennas

PRODUCT OVERVIEW

Mini-Circuits' RCBT-63H+ is a surface mount bias tee providing high DC voltage/current handling and low insertion loss for applications over a very wide frequency range from 900 to 6000 MHz. This model is capable of handling up to +30 dBm (1 W) RF input power, +50 V DC voltage and 2.5 A DC current. RCBT-63H+ is enclosed in a small package of 0.31x0.25", saving significant space on customers' PCB.

KEY FEATURES

Feature	Advantages
Wideband, 900 to 6000 MHz	Supports a wide range of applications with a single device, including biasing broadband amplifier, laser diodes, active antennas and more.
Low Insertion Loss, 0.3 dB Typ.	Preserves signal strength from input to output and minimizes overall system loss.
Excellent Return Loss, 18 dB Typ.	Provides excellent matching for 50Ω systems, with minimal signal reflection.
RF Power Handling Up to 1 W	This model supports applications with a variety of power requirements.
High DC Current Handling, 2.5 A	RCBT-63H+ supports systems/applications with high DC current requirements.

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ELECTRICAL SPECIFICATIONS AT +25°C

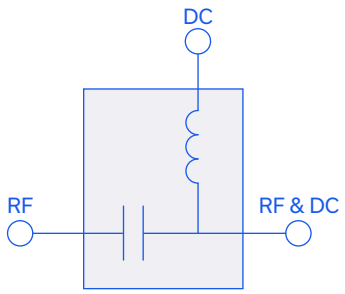
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		900		6000	MHz
Insertion Loss	900-1200		0.3	0.6	dB
	1200-5700		0.2	0.5	
	5700-6000		0.4	0.7	
Isolation	900-4800	20	23		dB
	4800-6000	14	17		
VSWR	900-1200		1.5	1.8	:1
	1200-5700		1.3	1.5	
	5700-6000		1.4	1.7	

ABSOLUTE MAXIMUM RATINGS

Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
RF Power	+30 dBm max.
Voltage at DC Port	+50 V max.
Input Current	2.5 A max.

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

FUNCTIONAL SCHEMATIC



SURFACE MOUNT

Bias Tee

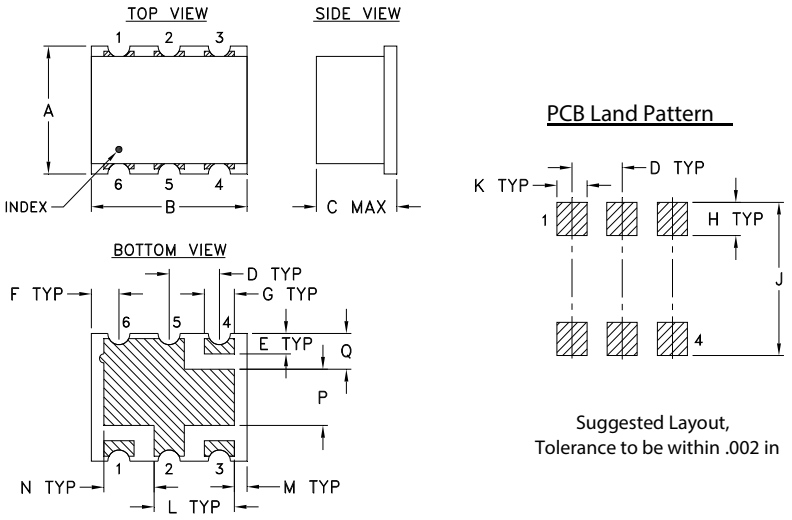
RCBT-63H+

50Ω Wideband 900 to 6000 MHz

PAD CONNECTIONS

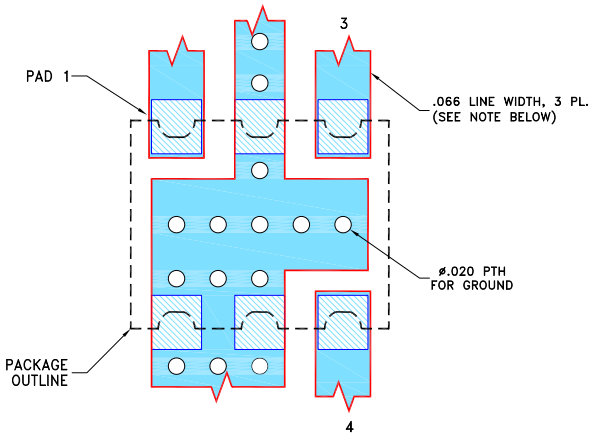
RF	4
RF & DC	3
DC	1
NOT USED	2,5,6

OUTLINE DRAWING



PRODUCT MARKING: RCBT-63H+

DEMO BOARD MCL P/N: TB-RCBT-63H+
SUGGESTED PCB LAYOUT (PL-577)



NOTES:
1. LINE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030±.002".
   COPPER: 1/2 OZ. EACH SIDE.
   FOR OTHER MATERIALS LINE WIDTH MAY NEED TO BE MODIFIED.
3. 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.

OUTLINE DIMENSIONS (Inches / mm)

A	B	C	D	E	F	G	H
.25	.31	.16	.100	.040	.055	.060	.065
6.35	7.87	4.06	2.54	1.02	1.40	1.52	1.65

J	K	L	M	N	P	Q	wt.
.300	.060	.160	.025	.100	.110	.070	grams
7.62	1.52	4.06	0.64	2.54	2.79	1.78	0.16

TAPE & REEL INFORMATION: F2

Bias Tee

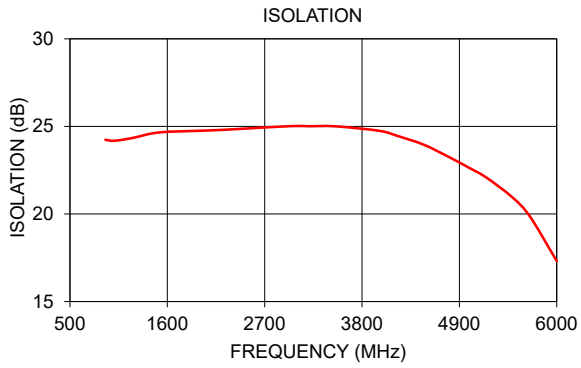
RCBT-63H+

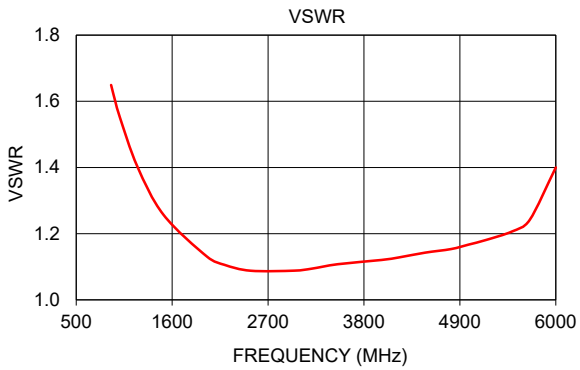
50Ω Wideband 900 to 6000 MHz

TYPICAL PERFORMANCE DATA

Frequency (MHz)	Insertion Loss (dB) RF & DC-RF	Isolation (dB) RF	VSWR (:1) RF & DC - DC
900	0.42	24.24	1.65
950	0.39	24.20	1.60
1000	0.37	24.18	1.55
1200	0.30	24.33	1.40
1500	0.22	24.65	1.26
2000	0.17	24.76	1.13
2200	0.16	24.80	1.11
2500	0.17	24.88	1.09
3000	0.15	25.02	1.09
3200	0.15	25.01	1.09
3500	0.14	25.00	1.11
4000	0.14	24.75	1.12
4200	0.14	24.46	1.13
4500	0.14	23.95	1.14
4800	0.15	23.21	1.15
5000	0.16	22.66	1.17
5200	0.17	22.10	1.18
5500	0.20	20.95	1.21
5700	0.25	19.84	1.24
6000	0.43	17.32	1.40







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

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- Shortage Management
- Alternative Solution
- Excess Inventory Management