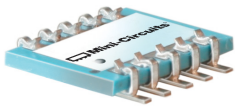
Surface Mount

Power Splitter/Combiner

2 Way-90° 50Ω 340 to 680 MHz

QBA-07+
QBA-07



CASE STYLE: SM1L

+RoHS Compliant

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

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C

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

Pin Connections

SUM PORT	1
PORT 1 (+90°)	10
PORT 2 (0°)	6
GROUND	2,3,4,7,8,9
50 OHM TERM EXTERNAL	5

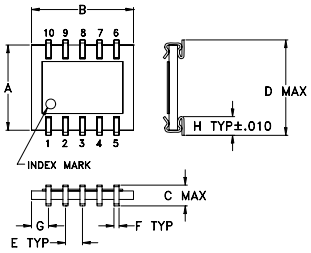
Features

- low insertion loss, 0.5 dB typ.
- high power capability, 27W
- hermetically sealed
- low variation with temperature
- low profile, 0.07" height
- aqueous washable
- protected by U.S. Patent 5,534,830

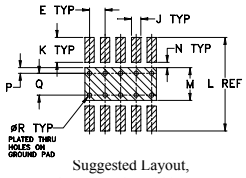
Applications

- NMT
- land mobile radio
- broadcasting

Outline Drawing



PCB Land Pattern



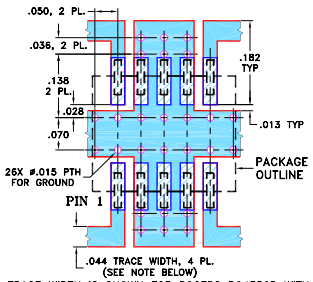
Suggested Layout,
Tolerance to be within ±.002

ADJACENT GROUND PINS SHALL BE CONNECTED TO EACH OTHER AND TO GROUND PAD

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	
.250	.300	.070	.320	.050	.015	.050	.075	
6.35	7.62	1.78	8.13	1.27	0.38	1.27	1.91	
J	K	L	M	N	P	Q	R	wt
.030	.095	.330	.100	.020	.015	.070	.014	grams
0.76	2.41	8.38	2.54	0.51	0.38	1.78	0.36	0.3

Demo Board MCL P/N: TB-115+
Suggested PCB Layout (PL-004)



NOTE: 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

Electrical Specifications

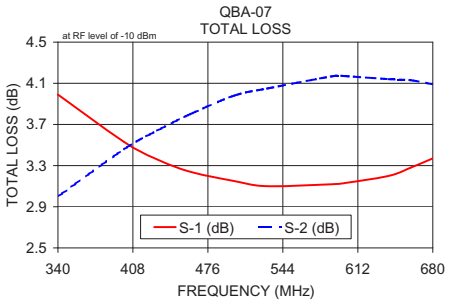
FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB		PHASE UNBALANCE (Degrees)		AMPLITUDE UNBALANCE (dB)		THERMAL RESISTANCE θjc, °C/W	POWER (W)
f_L-f_U	Typ.	Min.	$\overline{X}$	σ	Typ.	Max.	Typ.	Max.	Typ.	
340-680	**22**	**16**	**0.8**	**0.1**	**3.0**	**7.0**	**0.7**	**2.0**	**20**	**21***
340-530	23	18	0.5	0.1	1.7	4.0	0.7	2.0	20	27**

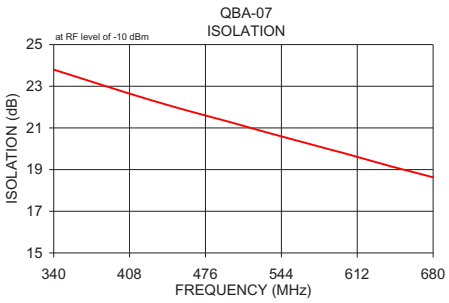
* Derate linearly to 9W at 100°C
** Derate linearly to 12W at 100°C

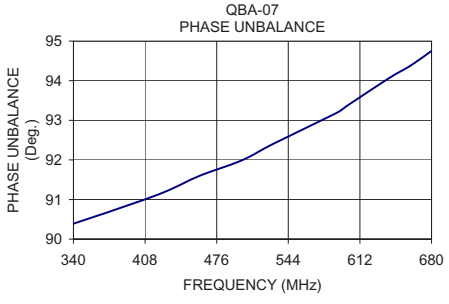
Typical Performance Data

Frequency (MHz)	Total Loss[1] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
340.00	3.99	3.00	0.99	23.80	90.39	1.14	1.08	1.12
400.00	3.53	3.46	0.07	22.78	90.93	1.17	1.10	1.14
430.00	3.36	3.64	0.27	22.29	91.23	1.19	1.11	1.14
460.00	3.24	3.80	0.56	21.83	91.60	1.20	1.12	1.15
500.00	3.15	3.98	0.83	21.25	91.99	1.22	1.14	1.17
530.00	3.10	4.05	0.96	20.80	92.41	1.24	1.15	1.18
590.00	3.12	4.17	1.05	19.93	93.19	1.27	1.18	1.20
600.00	3.13	4.17	1.04	19.79	93.37	1.27	1.19	1.21
640.00	3.20	4.14	0.94	19.19	94.07	1.29	1.21	1.22
660.00	3.28	4.13	0.85	18.91	94.38	1.30	1.22	1.23
680.00	3.37	4.09	0.73	18.63	94.75	1.31	1.23	1.24

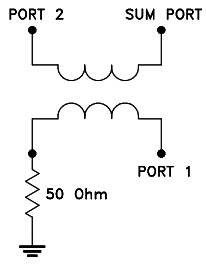
1. Total Loss = Insertion Loss + 3dB splitter loss.







electrical schematic



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