

# Surface Mount Power Splitter/Combiner

## QBA-12+

2 Way-90° 50Ω 800 to 1200 MHz



Generic photo used for illustration purposes only

CASE STYLE: SM33

**+RoHS Compliant**

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

### Maximum Ratings

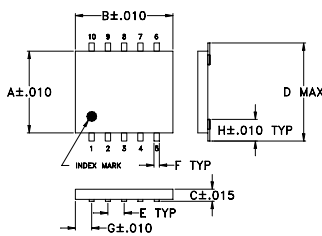
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C

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

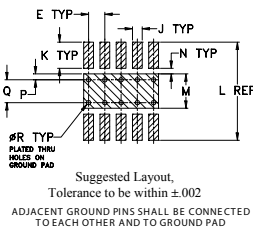
### Pin Connections

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

### Outline Drawing



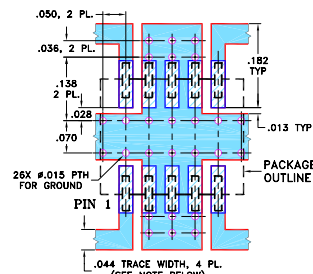
### PCB Land Pattern



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	
.250	.300	.050	.310	.050	.015	.050	.066	
6.35	7.62	1.27	7.87	1.27	0.38	1.27	1.68	
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	0.2

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



- NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4550B 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

### 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-Circuit's 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-Circuit's website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)

### Features

- low insertion loss, 0.25 dB typ.
- high power capability, 50W
- isolation, 23 dB typ.
- ceramic body, good for heat dissipation
- solder plated leads for excellent solderability
- aqueous washable
- protected by U.S. Patent 5,534,830

### Applications

- cellular
- ISM

### Electrical Specifications

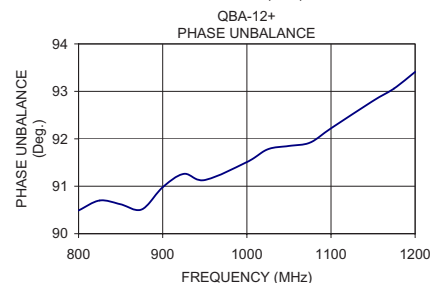
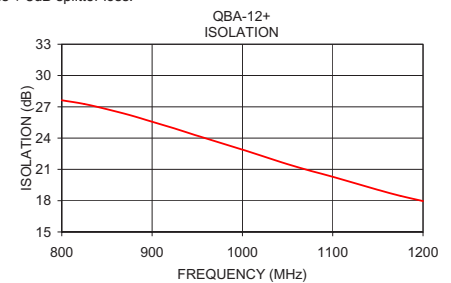
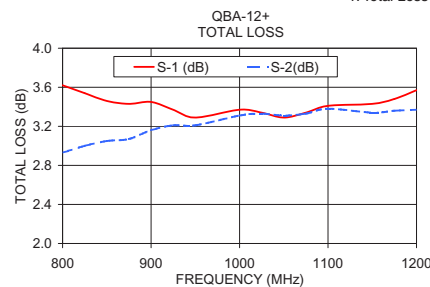
FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS <sup>1</sup> (dB) Avg. of Coupled Outputs ABOVE 3 dB			PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)	INPUT POWER <sup>2</sup> (W)
	Typ.	Min.	$f_L$	$f_U$	$\sigma$			
$f_L$ - $f_U$			$\bar{X}$	$\bar{X}$	$\sigma$	Max.	Max.	below 25°C
800-1200	23	14	0.25	0.44	0.02	6.0	1.2	50

1. Includes test fixture losses.  
2. Derate linearly to 10W at 100°C  
Thermal compound may be applied to decrease body temperature. See application note AN-10-007

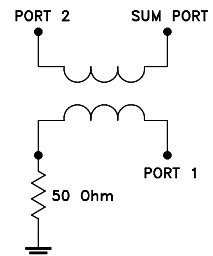
### Typical Performance Data

Frequency (MHz)	Total Loss <sup>1</sup> (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
800.00	3.62	2.93	0.70	27.63	90.49	1.08	1.21	1.09
825.00	3.54	3.00	0.54	27.27	90.70	1.08	1.21	1.09
850.00	3.46	3.05	0.40	26.77	90.62	1.08	1.22	1.09
875.00	3.43	3.07	0.36	26.21	90.51	1.08	1.23	1.09
900.00	3.45	3.16	0.28	25.57	90.98	1.09	1.24	1.10
925.00	3.37	3.21	0.16	24.92	91.26	1.09	1.25	1.10
950.00	3.29	3.21	0.09	24.23	91.13	1.11	1.26	1.11
1000.00	3.37	3.31	0.06	22.89	91.51	1.13	1.28	1.13
1025.00	3.34	3.33	0.01	22.20	91.78	1.15	1.29	1.15
1050.00	3.29	3.31	0.03	21.50	91.85	1.17	1.30	1.16
1075.00	3.34	3.33	0.01	20.87	91.92	1.19	1.31	1.17
1100.00	3.41	3.38	0.03	20.29	92.22	1.21	1.32	1.19
1150.00	3.43	3.34	0.09	19.04	92.80	1.26	1.35	1.23
1175.00	3.48	3.36	0.12	18.46	93.06	1.28	1.36	1.25
1200.00	3.57	3.37	0.20	17.96	93.41	1.31	1.37	1.27

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



### electrical schematic



## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Signal Conditioning](#) category:*

*Click to view products by [Mini-Circuits](#) manufacturer:*

Other Similar products are found below :

[PD0409J5050S2HF](#) [HHS-109-PIN](#) [AFS14A35-1591.50-T3](#) [JP510S](#) [LFB322G45SN1A504](#) [SF2159E](#) [FM-104-PIN](#) [CER0813B](#)  
[MAPDCC0005](#) [3A325](#) [BD0810N50100AHF](#) [DC0710J5005AHF](#) [DC2327J5005AHF](#) [LFL15869MTC1B787](#) [X3C19F1-20S](#)  
[CDBLB455KCAX39-B0](#) [RF1353C](#) [051157-0000](#) [PD0922J5050D2HF](#) [600S150FTRB](#) [1E1305-3](#) [1F1304-3S](#) [TP-103-PIN](#)  
[BD1222J50200AHF](#) [BD1722J50100AHF](#) [2450DP39K5400E](#) [BD0810J50150AHF](#) [BD1722J50200AHF](#) [DS-327-PIN](#) [MACP-008125-](#)  
[CK07F0](#) [DS-329-PIN](#) [DS-313-PIN](#) [TP-104-PIN](#) [TP-101-PIN](#) [HH-128-PIN](#) [8594810000](#) [T-1000-N](#) [JP506S](#) [XC0900P-10S](#) [XC0900B-30S](#)  
[CHE1260-QAG](#) [11305-10](#) [5962-9091202MXA](#) [3A412S](#) [X3C06A4-03S](#) [B39000Z3410A4](#) [DSS-333-PIN](#) [PD2425J5050S2HF](#)  
[B39242B4360P810](#) [B39781B8005P810](#)