

# Surface Mount Power Splitter/Combiner

## HPQ-05W+ HPQ-05W

2 Way-90° 50Ω 380 to 490 MHz



### Maximum Ratings

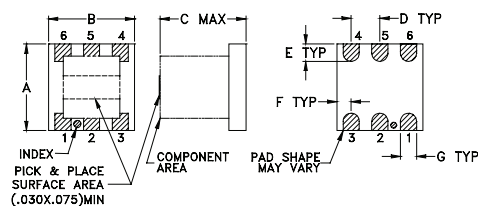
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W max.

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

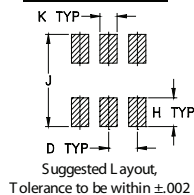
### Pin Connections

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

### Outline Drawing



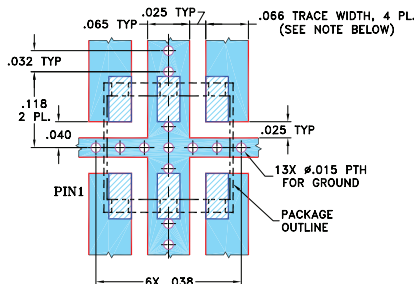
### PCB Land Pattern



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	
.200	.200	.200	.075	.050	.025	
5.08	5.08	5.08	1.91	1.27	0.64	
G	H	J	K		wt	
.026	.070	.220	.035		grams	
0.66	1.78	5.59	0.89			0.15

### Demo Board MCL P/N: TB-43 Suggested PCB Layout (PL-114)



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .030" ± .002"; 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

### Features

- low insertion loss, 0.2 dB typ.
- good isolation, 25 dB typ.
- excellent input & output VSWR, 1.12 typ.
- aqueous washable

### Applications

- UHF
- image reject mixers
- balanced amplifiers
- modulators

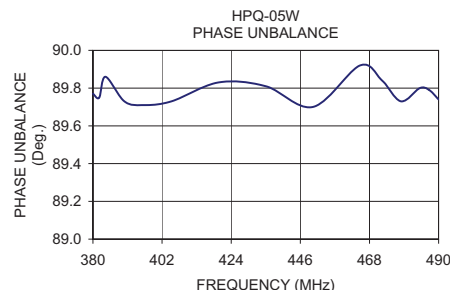
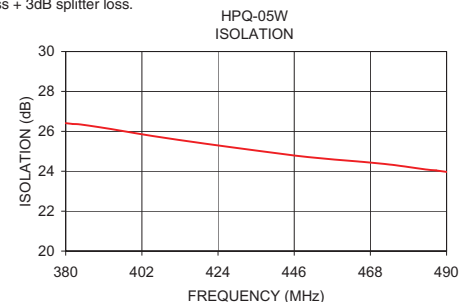
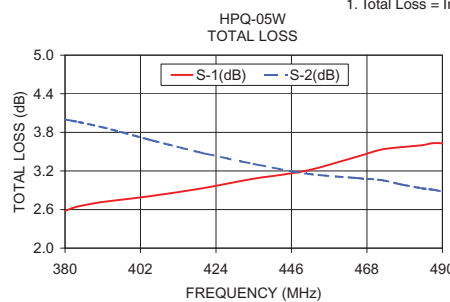
### Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB		PHASE UNBALANCE (Degrees)		AMPLITUDE UNBALANCE (dB)		VSWR (:1)	
	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	S-Port Typ.	Output Typ.
$f_L$ - $f_U$	25	20	0.2	0.4	0.6	3.0	1.1	1.6	1.12	1.12

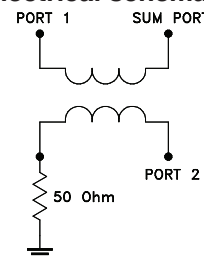
### Typical Performance Data

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						
380.00	2.58	4.00	1.42	26.41	89.77	1.12	1.12	1.13
382.00	2.62	3.98	1.37	26.37	89.75	1.12	1.12	1.13
384.00	2.65	3.96	1.31	26.35	89.86	1.12	1.12	1.13
390.00	2.71	3.89	1.18	26.20	89.73	1.13	1.12	1.14
396.00	2.75	3.81	1.06	26.03	89.71	1.13	1.12	1.14
405.00	2.81	3.68	0.87	25.77	89.73	1.13	1.13	1.14
420.00	2.93	3.48	0.56	25.39	89.83	1.13	1.13	1.14
435.00	3.08	3.31	0.23	25.04	89.81	1.14	1.13	1.15
450.00	3.20	3.16	0.04	24.71	89.70	1.14	1.14	1.15
465.00	3.42	3.09	0.33	24.48	89.92	1.14	1.14	1.15
472.00	3.53	3.06	0.47	24.37	89.84	1.15	1.14	1.16
478.00	3.57	2.99	0.58	24.24	89.73	1.15	1.14	1.16
484.00	3.60	2.93	0.67	24.09	89.80	1.15	1.14	1.16
487.00	3.63	2.91	0.72	24.04	89.79	1.15	1.14	1.16
490.00	3.63	2.88	0.75	23.97	89.74	1.15	1.14	1.16

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



### electrical schematic



For detailed performance specs & shopping online see web site



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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](http://www.minicircuits.com/MCLStore/terms.jsp).

REV. B  
M127604  
HPQ-05W  
ED-7075  
RVN/TD/CP  
130313