

# Surface Mount Power Splitter/Combiner

2 Way-90° 50Ω 380 to 490 MHz

HPQ-05W+  
HPQ-05W



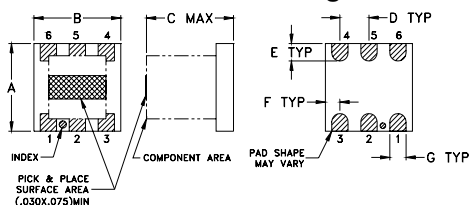
## Maximum Ratings

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

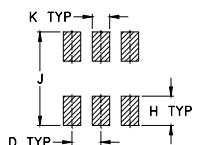
## Pin Connections

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

## Outline Drawing



## PCB Land Pattern



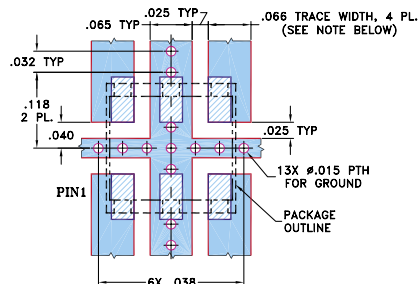
Suggested Layout,  
Tolerance to be within ±0.02

## Outline Dimensions (inch)

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 RO4350B 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

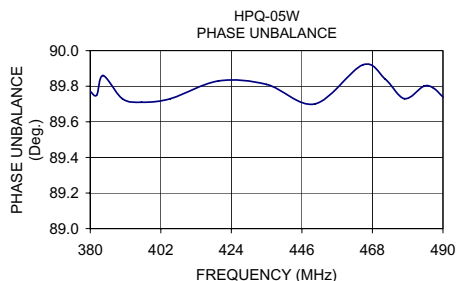
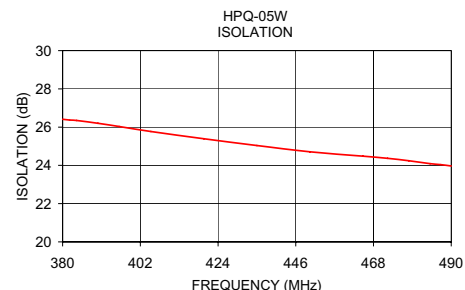
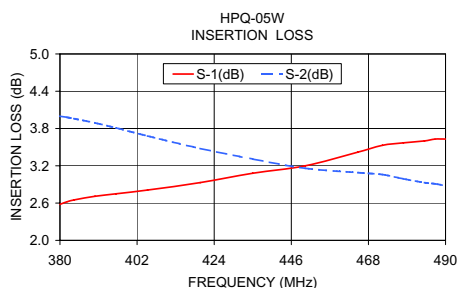
- UHF
- image reject mixers
- balanced amplifiers
- modulators

## Splitter Electrical Specifications

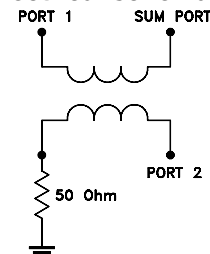
FREQ. RANGE (MHz)	ISOLATION (dB)	INSERTION LOSS (dB) Avg. of Coupled Outputs less 3 dB	PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)	VSWR (:1)
f <sub>L</sub> -f <sub>U</sub>	Typ. Min.	Typ. Max.	Typ. Max.	Typ. Max.	S-Port Typ. Output Typ.
380-490	25 20	0.2 0.4	0.6 3.0	1.1 1.6	1.12 1.12

## Typical Performance Data

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



## electrical schematic



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