

# Surface Mount Power Splitter/Combiner

## ADQ-90+ ADQ-90

2 Way-90° 50Ω 55 to 90 MHz

### Maximum Ratings

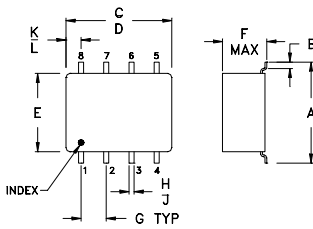
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	0.5W max.

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

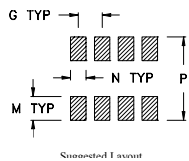
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern



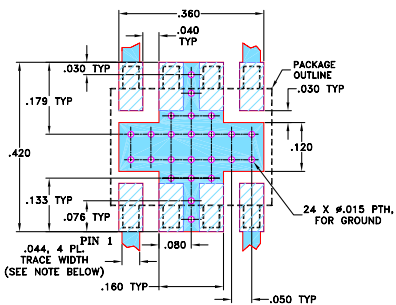
### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.397	.032	.385	.435	.310	.215	.100
10.08	0.81	9.78	11.05	7.87	5.46	2.54

H	J	K	L	M	N	P	wt
.015	.025	.035	.075	.120	.060	.420	grams
0.38	0.64	0.89	1.91	3.05	1.52	10.67	0.45

Demo Board MCL P/N: TB-83  
Suggested PCB Layout (PL-063)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015". 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

### Features

- good isolation, 26 dB typ.
- good input port matching VSWR, 1.12 typ.
- good output port matching VSWR, 1.10 typ.
- excellent phase unbalance, 1 deg. typ.
- small surface mount package
- protected under U.S. Patent 6,133,525

### Applications

- VHF
- image rejection
- IF signal processing

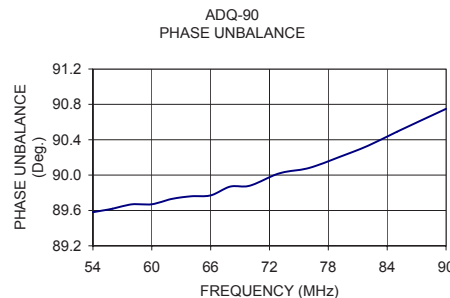
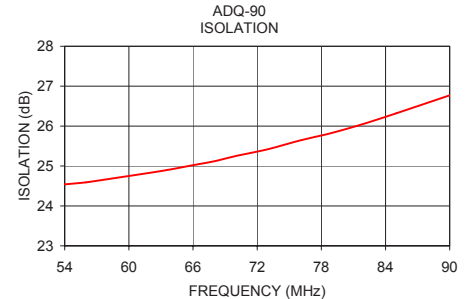
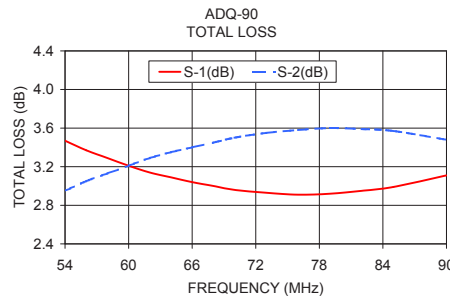
### Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)	INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB	PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)
$f_L$ - $f_U$	Typ. Min.	Typ. Max.	Max.	Max.
55-90	26 20	0.2 0.7	4	1.2

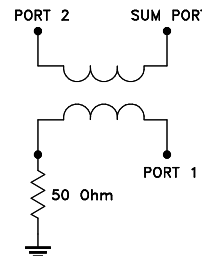
### Typical Performance Data

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						
54.00	3.47	2.95	0.53	24.54	89.58	1.11	1.13	1.11
56.00	3.37	3.05	0.33	24.59	89.62	1.11	1.13	1.11
58.00	3.29	3.13	0.16	24.67	89.67	1.11	1.13	1.11
60.00	3.21	3.21	0.00	24.75	89.67	1.11	1.13	1.11
62.00	3.14	3.29	0.14	24.83	89.73	1.11	1.13	1.11
64.00	3.09	3.35	0.26	24.92	89.76	1.10	1.13	1.10
66.00	3.04	3.40	0.37	25.02	89.77	1.10	1.13	1.10
68.00	3.00	3.45	0.46	25.12	89.87	1.10	1.13	1.10
70.00	2.96	3.50	0.54	25.25	89.88	1.09	1.13	1.10
73.00	2.93	3.55	0.62	25.42	90.02	1.09	1.14	1.10
76.00	2.91	3.58	0.67	25.64	90.08	1.08	1.14	1.10
79.00	2.92	3.60	0.67	25.83	90.20	1.08	1.14	1.10
82.00	2.95	3.59	0.64	26.06	90.33	1.08	1.14	1.10
85.00	2.99	3.57	0.58	26.32	90.49	1.07	1.15	1.11
90.00	3.11	3.48	0.37	26.77	90.75	1.06	1.16	1.11

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



### electrical schematic



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