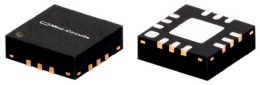
MMIC Surface Mount

Power Splitter/Combiner

WP4F1+

4 Way-0° 50Ω 4750 to 6200 MHz



Generic photo used for illustration purposes only

CASE STYLE: DQ1225

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

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000, 2000

Maximum Ratings

Operating Temperature	-40°C to 95°C
Storage Temperature	-65°C to 150°C
Power Input (as a splitter)	1.5W max.
Internal Dissipation	0.375W max.

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

Pad Connections

SUM PORT	2
PORT 1	12
PORT 2	10
PORT 3	6
PORT 4	4
GROUND	1,3,5,7,8,9,11, paddle

Product Marking

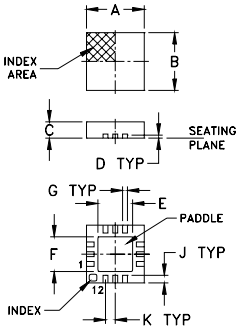
Features

- excellent isolation, 28 dB typ.
- good phase unbalance 3 deg. typ.
- good amplitude unbalance, 0.15 dB typ.
- small size, .118" x .118" x .035"
- high ESD level
- aqueous washable

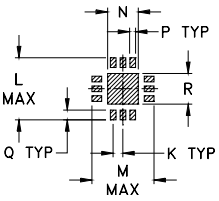
Applications

- WLAN
- WIMAX
- ISM
- radar

Outline Drawing



PCB Land Pattern



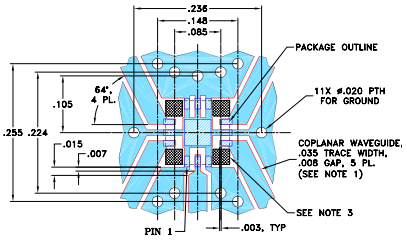
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J
.118	.118	.035	.008	.057	.057	.009	---	.016
3.00	3.00	0.89	0.20	1.45	1.45	0.23	---	0.41

K	L	M	N	P	Q	R	wt
.020	.127	.127	.049	.010	.020	.049	grams
0.51	3.23	3.23	1.24	0.25	0.51	1.24	0.02

Demo Board MCL P/N: TB-395+
Suggested PCB Layout (PL-259)



NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
3. SIGNAL TRACES ARE NOT ALLOWED INSIDE HATCHED AREAS (APPROX. .030 X .030) AT 4 PLACES AS SHOWN.

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) ABOVE 6.0 dB		PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)	VSWR (:1) Typ.	
							Port S	Ports 1,2,3,4
f_L-f_U	Typ.	Min.	Typ.	Max.	Max.	Max.		
4750-6200	28	16	1.0	2.0	9	0.6	1.5	1.5

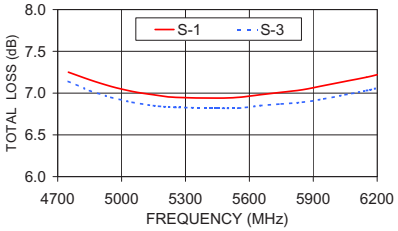
* Includes fixture loss, 0.3 dB typ.

Typical Performance Data

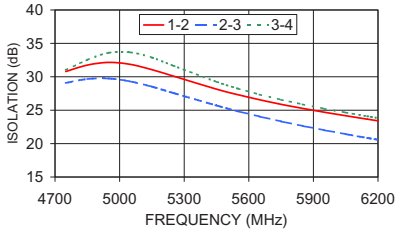
Freq. (MHz)	Total Loss[1] (dB)				Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3	VSWR 4
	S-1	S-2	S-3	S-4		1-2	2-3	3-4						
4750.00	7.25	7.16	7.14	7.23	0.11	30.79	29.08	31.01	2.02	1.69	1.67	1.73	1.77	1.62
4850.00	7.16	7.05	7.03	7.13	0.12	31.75	29.67	32.54	1.76	1.57	1.63	1.68	1.71	1.59
4950.00	7.08	6.97	6.95	7.06	0.13	32.15	29.74	33.59	1.77	1.47	1.60	1.64	1.67	1.56
5050.00	7.02	6.90	6.89	7.00	0.13	31.86	29.31	33.66	1.83	1.39	1.57	1.59	1.62	1.53
5150.00	6.98	6.86	6.85	6.96	0.13	31.06	28.52	32.87	1.87	1.34	1.54	1.55	1.58	1.51
5250.00	6.95	6.83	6.83	6.93	0.12	30.10	27.57	31.66	1.92	1.32	1.52	1.52	1.55	1.49
5450.00	6.94	6.81	6.82	6.91	0.13	28.15	25.70	29.25	2.02	1.34	1.48	1.47	1.48	1.45
5550.00	6.95	6.82	6.82	6.93	0.13	27.31	24.84	28.24	2.04	1.38	1.47	1.44	1.45	1.45
5650.00	6.98	6.84	6.85	6.95	0.13	26.56	24.05	27.35	2.14	1.43	1.46	1.42	1.43	1.44
5750.00	7.01	6.88	6.87	6.98	0.13	25.87	23.32	26.56	2.28	1.49	1.44	1.40	1.41	1.42
5850.00	7.04	6.92	6.89	7.02	0.15	25.27	22.64	25.87	2.54	1.54	1.43	1.37	1.38	1.42
5950.00	7.09	6.97	6.93	7.07	0.16	24.70	22.01	25.23	2.84	1.61	1.43	1.36	1.36	1.42
6050.00	7.14	7.03	6.98	7.12	0.16	24.17	21.42	24.65	3.08	1.68	1.41	1.33	1.34	1.41
6150.00	7.19	7.10	7.03	7.18	0.16	23.66	20.85	24.10	3.34	1.75	1.40	1.32	1.33	1.40
6200.00	7.22	7.12	7.06	7.20	0.16	23.41	20.58	23.82	3.43	1.79	1.41	1.31	1.31	1.40

1. Total Loss = Insertion Loss + 6dB splitter loss.

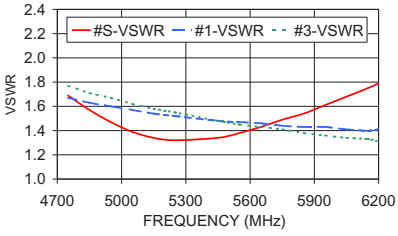
WP4F1+
TOTAL LOSS



WP4F1+
ISOLATION



WP4F1+
VSWR



electrical schematic

ESD Rating
Human Body Model (HBM): Class 1A (250 to < 500v) in accordance with ANSI/ESD STM 5.1 - 2001
Machine Model (MM): Class M2 (100V to < 250V) in accordance with ANSI/ESD STM 5.2 - 1999

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.
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