

Surface Mount Power Splitter/Combiner

8 Way-0° 50Ω 10 to 850 MHz

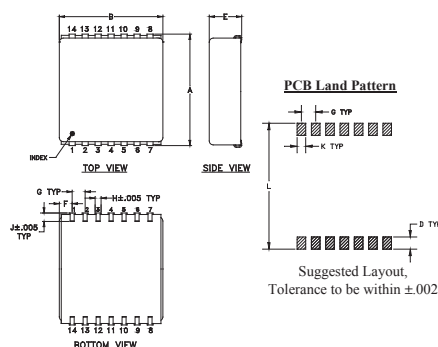
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W max.
Internal Dissipation	0.875W max.

Pin Connections

SUM PORT	1
PORT 1	3
PORT 2	4
PORT 3	5
PORT 4	6
PORT 5	9
PORT 6	10
PORT 7	11
PORT 8	12
GROUND	2,7,8,13,14

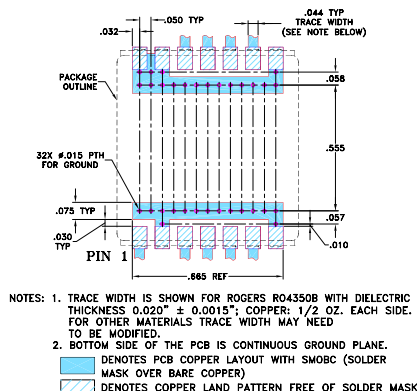
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.870	.800	--	.100	.250	.100	.100
22.10	20.32	--	2.54	6.35	2.54	2.54
H	J	K	L		wt	
.047	.065	.065	.890		grams	
1.19	1.65	1.65	22.61		4.0	

Demo Board MCL P/N: TB-134 Suggested PCB Layout (PL-037)



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.
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
4. 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

Features

- wideband, 10 to 850 MHz
- aqueous washable
- shielded metal case
- J-leads for good solderability & strain relief

Applications

- VHF/UHF
- cellular
- instrumentation
- communication systems

Electrical Specifications

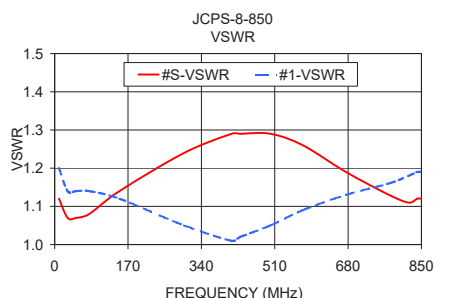
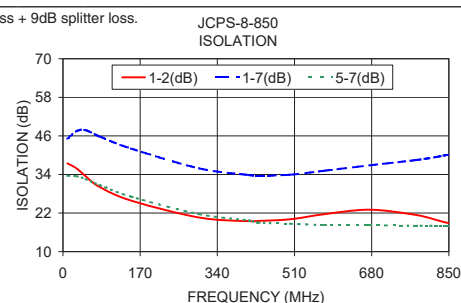
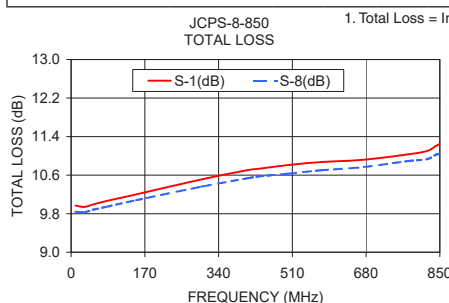
FREQ. RANGE (MHz)	ISOLATION (dB)						INSERTION LOSS (dB) ABOVE 9.0 dB						PHASE UNBALANCE (Degrees)			AMPLITUDE UNBALANCE (dB)		
	L		M		U		L		M		U		L		M		U	
f_L - f_U	Typ.	Min	Typ.	Min	Typ.	Min	Typ.	Max.	Typ.	Max.	Typ.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
10-850	34	20	25	17	20	15	0.8	1.5	1.0	2.5	1.8	3.0	5	10	20	0.6	0.7	1.0

L = low range [f_L to 10 f_L] M = mid range [10 f_L to $f_U/2$] U = upper range [$f_U/2$ to f_U]

Typical Performance Data

Freq. (MHz)	Total Loss ¹ (dB)						Amplitude Unbalance (dB)	Isolation (dB)				VSWR		
	S-1	S-2	S-3	S-4	S-6	S-8		1-2	1-7	3-4	5-7	S	1	8
10.00	9.97	9.88	9.85	9.85	9.83	9.84	0.14	37.47	45.11	36.73	33.59	1.12	1.20	1.24
30.00	9.94	9.85	9.82	9.83	9.81	9.83	0.13	35.88	47.49	35.30	33.43	1.07	1.14	1.18
50.00	9.99	9.90	9.85	9.87	9.87	9.88	0.14	33.43	47.78	33.03	32.56	1.07	1.14	1.18
80.00	10.06	9.96	9.92	9.93	9.94	9.94	0.14	30.18	45.86	29.90	30.72	1.08	1.14	1.17
150.00	10.20	10.08	10.05	10.05	10.08	10.08	0.15	25.88	42.07	25.65	27.12	1.14	1.12	1.15
300.00	10.51	10.35	10.32	10.32	10.39	10.36	0.19	20.60	35.90	20.40	21.65	1.24	1.05	1.08
410.00	10.71	10.51	10.48	10.47	10.61	10.54	0.24	19.46	33.82	19.25	19.70	1.29	1.01	1.02
430.00	10.73	10.54	10.50	10.48	10.64	10.57	0.25	19.55	33.59	19.32	19.00	1.29	1.02	1.02
500.00	10.81	10.59	10.56	10.55	10.75	10.63	0.26	20.04	33.93	19.84	18.67	1.29	1.05	1.05
575.00	10.87	10.66	10.61	10.63	10.88	10.70	0.30	21.63	35.15	21.98	18.29	1.26	1.09	1.10
675.00	10.92	10.76	10.66	10.70	11.05	10.77	0.43	23.04	36.83	26.33	18.19	1.19	1.13	1.16
775.00	11.03	10.95	10.77	10.86	11.32	10.89	0.62	21.47	38.45	25.87	18.10	1.13	1.16	1.21
820.00	11.10	11.05	10.81	10.91	11.44	10.93	0.71	19.95	39.36	22.83	18.03	1.11	1.18	1.24
840.00	11.20	11.16	10.90	11.02	11.59	11.02	0.78	19.15	39.94	21.31	18.03	1.12	1.19	1.25
850.00	11.25	11.23	10.94	11.08	11.67	11.05	0.82	18.91	40.13	20.89	18.03	1.12	1.19	1.26

1. Total Loss = Insertion Loss + 9dB splitter loss.



electrical schematic



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8 Way-0° Power Splitter/Combiner

JCPS-8-850

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0 dBm @Temperature = +25°C

FREQ. (MHz)	TOTAL LOSS ¹ (dB)						AMP. UNBAL. (dB)	PHASE UNBAL. (deg.)	ISOLATION (dB)				VSWR (:1)		
	S-1	S-2	S-3	S-4	S-6	S-8			1-2	1-7	3-4	5-7	S	1	8
10	9.76	9.75	9.75	9.78	9.78	9.78	0.03	0.09	34.74	39.01	35.83	33.39	1.10	1.25	1.26
20	9.74	9.73	9.73	9.76	9.75	9.75	0.02	0.11	36.14	42.61	36.57	34.06	1.06	1.21	1.21
30	9.76	9.75	9.75	9.77	9.76	9.76	0.03	0.14	35.77	44.22	35.79	33.88	1.04	1.20	1.20
40	9.78	9.77	9.77	9.80	9.79	9.79	0.02	0.27	34.94	45.01	34.64	33.43	1.04	1.20	1.19
50	9.81	9.80	9.80	9.82	9.81	9.81	0.02	0.28	33.95	45.29	33.44	32.89	1.04	1.19	1.19
60	9.83	9.83	9.83	9.84	9.83	9.83	0.02	0.36	32.95	45.51	32.32	32.30	1.04	1.19	1.19
70	9.86	9.85	9.85	9.87	9.85	9.85	0.03	0.45	32.02	45.60	31.26	31.68	1.04	1.19	1.18
80	9.88	9.87	9.87	9.89	9.87	9.87	0.03	0.53	31.14	45.72	30.31	31.06	1.05	1.19	1.18
90	9.91	9.89	9.89	9.91	9.89	9.89	0.03	0.56	30.33	45.85	29.44	30.46	1.05	1.19	1.18
100	9.93	9.92	9.91	9.93	9.90	9.90	0.03	0.61	29.57	45.99	28.65	29.88	1.06	1.19	1.18
125	9.98	9.96	9.96	9.98	9.95	9.95	0.04	0.79	27.97	46.42	26.96	28.56	1.07	1.18	1.17
150	10.04	10.02	10.01	10.02	9.99	9.99	0.06	0.91	26.63	47.04	25.57	27.38	1.08	1.18	1.16
175	10.09	10.06	10.06	10.06	10.03	10.03	0.08	1.03	25.51	47.86	24.40	26.36	1.10	1.17	1.15
200	10.15	10.12	10.11	10.11	10.08	10.08	0.10	1.10	24.56	48.91	23.42	25.47	1.12	1.16	1.14
225	10.21	10.18	10.17	10.16	10.12	10.12	0.12	1.17	23.76	50.16	22.59	24.69	1.15	1.15	1.13
250	10.28	10.23	10.22	10.21	10.16	10.16	0.15	1.26	23.05	51.66	21.86	23.98	1.17	1.14	1.12
275	10.35	10.30	10.28	10.26	10.21	10.21	0.17	1.24	22.46	53.27	21.24	23.36	1.20	1.14	1.11
300	10.41	10.36	10.33	10.31	10.25	10.25	0.19	1.25	21.94	54.71	20.72	22.83	1.23	1.12	1.10
325	10.48	10.42	10.39	10.36	10.30	10.30	0.22	1.28	21.51	55.42	20.27	22.35	1.26	1.11	1.08
350	10.54	10.48	10.44	10.41	10.34	10.34	0.25	1.22	21.14	55.22	19.89	21.93	1.29	1.10	1.07
375	10.61	10.54	10.50	10.46	10.39	10.39	0.27	1.26	20.84	54.16	19.58	21.56	1.32	1.09	1.06
400	10.67	10.60	10.55	10.51	10.44	10.44	0.29	1.27	20.60	53.05	19.35	21.24	1.35	1.08	1.04
425	10.73	10.66	10.60	10.56	10.48	10.48	0.32	1.38	20.42	51.99	19.17	20.96	1.38	1.07	1.03
450	10.79	10.71	10.65	10.61	10.53	10.53	0.34	1.45	20.29	51.42	19.07	20.73	1.41	1.06	1.02
475	10.83	10.76	10.69	10.65	10.57	10.57	0.35	1.52	20.23	50.95	19.03	20.54	1.44	1.05	1.02
500	10.87	10.81	10.72	10.69	10.60	10.60	0.36	1.54	20.22	50.77	19.06	20.40	1.46	1.04	1.02
525	10.90	10.85	10.76	10.72	10.64	10.64	0.36	1.69	20.26	51.03	19.16	20.29	1.48	1.04	1.03
550	10.93	10.88	10.78	10.75	10.67	10.67	0.36	1.83	20.36	51.59	19.34	20.22	1.50	1.04	1.05
575	10.94	10.91	10.80	10.77	10.71	10.71	0.36	2.10	20.51	52.69	19.59	20.20	1.51	1.04	1.06
600	10.95	10.92	10.80	10.79	10.73	10.73	0.35	2.41	20.72	54.42	19.93	20.23	1.51	1.06	1.07
625	10.94	10.94	10.81	10.80	10.75	10.75	0.33	2.74	20.96	57.00	20.37	20.30	1.51	1.07	1.09
650	10.92	10.94	10.81	10.80	10.78	10.78	0.32	3.07	21.25	60.07	20.89	20.42	1.50	1.08	1.10
675	10.90	10.94	10.79	10.80	10.80	10.80	0.30	3.43	21.55	59.53	21.52	20.60	1.48	1.10	1.11
700	10.87	10.94	10.78	10.80	10.82	10.82	0.30	3.83	21.84	54.69	22.23	20.84	1.46	1.12	1.13
725	10.84	10.92	10.77	10.80	10.84	10.84	0.27	4.23	22.06	50.90	22.98	21.16	1.42	1.13	1.14
750	10.80	10.92	10.74	10.80	10.87	10.87	0.25	4.75	22.16	47.79	23.64	21.53	1.38	1.15	1.15
775	10.77	10.91	10.73	10.80	10.90	10.90	0.22	5.35	22.09	45.32	24.06	22.03	1.33	1.17	1.16
800	10.74	10.91	10.72	10.81	10.95	10.95	0.23	6.00	21.75	42.91	23.97	22.66	1.27	1.19	1.17
825	10.73	10.92	10.74	10.84	11.02	11.02	0.30	6.74	21.17	40.92	23.24	23.50	1.22	1.20	1.18
850	10.72	10.94	10.76	10.88	11.10	11.10	0.37	7.53	20.34	39.14	22.00	24.36	1.19	1.22	1.19
875	10.74	10.99	10.81	10.95	11.22	11.22	0.48	8.37	19.35	37.54	20.53	25.63	1.18	1.24	1.20
900	10.81	11.07	10.91	11.06	11.37	11.37	0.56	9.31	18.29	36.05	18.97	27.18	1.23	1.26	1.21
925	10.90	11.19	11.04	11.20	11.57	11.57	0.67	10.29	17.17	34.63	17.47	29.36	1.32	1.28	1.22
950	11.05	11.36	11.23	11.40	11.84	11.84	0.79	11.36	16.08	33.37	16.08	32.34	1.44	1.29	1.22
975	11.25	11.57	11.48	11.66	12.17	12.17	0.92	12.47	15.02	32.14	14.80	37.07	1.60	1.31	1.23
1000	11.51	11.84	11.78	11.98	12.57	12.57	1.06	13.62	14.02	31.11	13.64	44.89	1.77	1.33	1.23
1050	12.20	12.55	12.59	12.81	13.58	13.58	1.37	17.52	12.23	29.46	11.67	34.45	2.20	1.36	1.25
1100	13.13	13.48	13.63	13.86	14.83	14.83	1.70	21.33	10.73	28.30	10.11	28.78	2.69	1.39	1.27
1150	14.24	14.56	14.83	15.08	16.27	16.27	2.13	24.73	9.48	27.69	8.87	26.00	3.20	1.42	1.30
1200	15.50	15.80	16.14	16.40	17.82	17.82	2.55	27.36	8.46	27.53	7.91	24.50	3.65	1.45	1.34
1250	16.90	17.13	17.47	17.71	19.40	19.40	2.79	29.41	7.62	27.77	7.17	23.80	4.03	1.48	1.39
1300	18.42	18.60	18.75	18.96	21.04	21.04	2.73	30.86	6.93	28.33	6.64	23.74	4.29	1.53	1.44
1350	20.18	20.26	19.86	20.00	22.81	22.81	2.95	33.29	6.37	29.37	6.37	24.43	4.39	1.57	1.48
1400	22.42	22.45	20.80	20.82	25.15	25.15	4.34	41.63	5.87	31.30	6.56	26.76	4.33	1.63	1.53
1450	25.42	25.65	22.85	22.60	29.94	29.94	8.09	72.74	5.40	33.26	7.56	38.05	4.16	1.71	1.61
1500	26.61	26.46	30.17	29.23	34.34	34.34	7.87	137.63	5.14	31.18	7.11	30.28	4.14	1.78	1.71

¹Total Loss = Insertion Loss + 9dB Splitter Loss



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REV. X2
JCPS-8-850
110124
Page 1 of 3

8 Way-0° Power Splitter/Combiner

JCPS-8-850

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0 dBm @Temperature = -40°C

FREQ. (MHz)	TOTAL LOSS ¹						AMP. UNBAL. (dB)	PHASE UNBAL. (deg.)	ISOLATION				VSWR		
	(dB)								(dB)				(:1)		
	S-1	S-2	S-3	S-4	S-6	S-8			1-2	1-7	3-4	5-7	S	1	8
10	9.60	9.59	9.59	9.62	9.61	9.61	0.03	0.22	35.21	40.73	35.04	34.39	1.07	1.19	1.20
20	9.59	9.59	9.59	9.61	9.60	9.60	0.02	0.13	36.05	45.40	36.00	34.89	1.05	1.16	1.17
30	9.61	9.60	9.60	9.63	9.62	9.62	0.02	0.16	35.64	47.51	35.50	34.58	1.04	1.15	1.15
40	9.63	9.62	9.63	9.65	9.63	9.63	0.02	0.24	34.86	48.62	34.62	34.04	1.05	1.15	1.15
50	9.65	9.65	9.64	9.66	9.66	9.66	0.02	0.31	34.00	49.26	33.61	33.43	1.05	1.14	1.14
60	9.67	9.66	9.66	9.68	9.67	9.67	0.02	0.39	33.10	49.70	32.63	32.78	1.06	1.14	1.14
70	9.69	9.68	9.69	9.70	9.69	9.69	0.02	0.43	32.25	49.91	31.69	32.14	1.07	1.14	1.14
80	9.71	9.70	9.70	9.72	9.70	9.70	0.03	0.50	31.48	50.09	30.81	31.53	1.08	1.14	1.14
90	9.73	9.72	9.71	9.73	9.72	9.72	0.03	0.56	30.76	50.31	30.00	30.94	1.08	1.14	1.14
100	9.74	9.73	9.72	9.75	9.73	9.73	0.03	0.62	30.10	50.52	29.26	30.36	1.09	1.14	1.13
125	9.78	9.77	9.76	9.78	9.76	9.76	0.03	0.81	28.61	51.17	27.62	29.06	1.10	1.14	1.13
150	9.82	9.80	9.80	9.81	9.79	9.79	0.05	0.92	27.31	51.94	26.25	27.86	1.12	1.13	1.12
175	9.87	9.84	9.84	9.85	9.82	9.82	0.07	1.04	26.18	52.82	25.10	26.79	1.15	1.12	1.11
200	9.92	9.89	9.89	9.89	9.86	9.86	0.09	1.10	25.22	53.73	24.11	25.85	1.17	1.12	1.11
225	9.98	9.94	9.93	9.93	9.89	9.89	0.10	1.17	24.42	54.31	23.26	25.07	1.19	1.12	1.10
250	10.03	9.98	9.97	9.97	9.92	9.92	0.13	1.32	23.71	53.97	22.51	24.35	1.22	1.11	1.09
275	10.09	10.04	10.02	10.02	9.96	9.96	0.15	1.35	23.09	53.09	21.87	23.72	1.24	1.10	1.08
300	10.14	10.08	10.07	10.06	10.00	10.00	0.18	1.48	22.54	51.80	21.31	23.15	1.27	1.09	1.07
325	10.21	10.14	10.12	10.11	10.04	10.04	0.20	1.56	22.08	50.48	20.84	22.64	1.30	1.09	1.06
350	10.26	10.19	10.16	10.15	10.07	10.07	0.23	1.67	21.67	49.29	20.43	22.19	1.33	1.08	1.05
375	10.32	10.25	10.21	10.20	10.11	10.11	0.25	1.76	21.33	48.30	20.10	21.79	1.36	1.07	1.04
400	10.37	10.30	10.26	10.24	10.15	10.15	0.27	1.79	21.05	47.48	19.83	21.45	1.40	1.06	1.03
425	10.42	10.35	10.30	10.28	10.19	10.19	0.29	1.86	20.82	46.81	19.63	21.14	1.42	1.05	1.02
450	10.47	10.39	10.34	10.32	10.22	10.22	0.31	1.93	20.64	46.36	19.49	20.89	1.45	1.04	1.02
475	10.51	10.43	10.38	10.36	10.26	10.26	0.32	2.03	20.51	46.11	19.42	20.67	1.48	1.04	1.02
500	10.54	10.47	10.41	10.40	10.29	10.29	0.32	2.17	20.43	46.02	19.41	20.49	1.50	1.03	1.02
525	10.57	10.51	10.43	10.43	10.32	10.32	0.33	2.33	20.41	46.15	19.48	20.35	1.52	1.03	1.04
550	10.59	10.53	10.45	10.46	10.34	10.34	0.34	2.56	20.42	46.51	19.61	20.26	1.54	1.04	1.05
575	10.60	10.56	10.47	10.47	10.37	10.37	0.33	2.73	20.49	47.21	19.82	20.21	1.55	1.04	1.06
600	10.60	10.57	10.47	10.48	10.39	10.39	0.32	2.90	20.58	48.21	20.11	20.19	1.56	1.06	1.07
625	10.60	10.58	10.47	10.49	10.41	10.41	0.30	3.03	20.71	49.68	20.47	20.21	1.55	1.07	1.09
650	10.57	10.58	10.46	10.49	10.42	10.42	0.28	3.22	20.88	51.82	20.91	20.29	1.54	1.08	1.10
675	10.55	10.58	10.45	10.49	10.44	10.44	0.28	3.46	21.05	55.82	21.43	20.43	1.52	1.10	1.11
700	10.51	10.56	10.43	10.48	10.45	10.45	0.26	3.83	21.21	64.26	22.01	20.64	1.49	1.11	1.12
725	10.48	10.54	10.40	10.48	10.47	10.47	0.24	4.26	21.33	64.83	22.58	20.89	1.45	1.13	1.13
750	10.44	10.53	10.38	10.48	10.48	10.48	0.22	4.62	21.35	54.35	23.06	21.22	1.40	1.15	1.14
775	10.40	10.52	10.36	10.46	10.51	10.51	0.19	4.97	21.25	49.61	23.30	21.66	1.35	1.16	1.16
800	10.36	10.50	10.34	10.47	10.54	10.54	0.20	5.42	20.95	45.90	23.14	22.23	1.29	1.18	1.17
825	10.34	10.51	10.34	10.49	10.60	10.60	0.27	5.79	20.48	43.16	22.47	22.97	1.24	1.20	1.18
850	10.33	10.52	10.35	10.52	10.66	10.66	0.34	6.17	19.78	40.86	21.37	23.77	1.19	1.22	1.19
875	10.33	10.55	10.39	10.57	10.77	10.77	0.44	6.83	18.90	38.87	20.05	24.92	1.19	1.24	1.20
900	10.39	10.63	10.48	10.67	10.91	10.91	0.52	7.77	17.95	37.04	18.60	26.36	1.23	1.26	1.20
925	10.47	10.73	10.60	10.80	11.10	11.10	0.63	8.68	16.90	35.44	17.18	28.32	1.33	1.27	1.21
950	10.60	10.88	10.78	10.98	11.34	11.34	0.74	9.68	15.86	33.94	15.83	31.02	1.47	1.29	1.22
975	10.80	11.09	11.02	11.24	11.67	11.67	0.87	10.77	14.81	32.55	14.57	35.21	1.64	1.31	1.23
1000	11.05	11.35	11.32	11.56	12.06	12.06	1.01	11.91	13.83	31.41	13.42	43.04	1.84	1.33	1.24
1050	11.76	12.08	12.13	12.39	13.06	13.06	1.31	15.38	12.04	29.53	11.44	35.81	2.34	1.37	1.26
1100	12.71	13.03	13.19	13.47	14.34	14.34	1.66	19.18	10.52	28.19	9.86	29.18	2.93	1.40	1.28
1150	13.84	14.14	14.41	14.72	15.82	15.82	2.14	22.60	9.25	27.50	8.60	26.11	3.54	1.43	1.31
1200	15.14	15.42	15.77	16.07	17.40	17.40	2.58	25.03	8.21	27.28	7.62	24.45	4.11	1.45	1.35
1250	16.58	16.81	17.13	17.42	19.03	19.03	2.86	26.82	7.35	27.48	6.88	23.66	4.56	1.49	1.41
1300	18.18	18.33	18.45	18.69	20.72	20.72	2.80	27.93	6.66	28.02	6.34	23.53	4.86	1.53	1.46
1350	19.97	20.06	19.56	19.73	22.51	22.51	2.96	29.77	6.08	29.04	6.05	24.10	4.95	1.59	1.51
1400	22.27	22.32	20.41	20.49	24.82	24.82	4.40	37.58	5.59	30.96	6.24	26.23	4.83	1.66	1.57
1450	25.42	25.73	22.22	22.07	29.63	29.63	8.34	69.72	5.10	32.94	7.38	37.61	4.57	1.73	1.66
1500	26.51	26.46	29.37	28.63	34.01	34.01	7.55	136.00	4.87	30.75	6.89	30.33	4.51	1.82	1.75

¹Total Loss = Insertion Loss + 9dB Splitter Loss



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110124
Page 2 of 3

8 Way-0° Power Splitter/Combiner

JCPS-8-850

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0 dBm @Temperature = +85°C

FREQ. (MHz)	TOTAL LOSS ¹						AMP. UNBAL. (dB)	PHASE UNBAL. (deg.)	ISOLATION				VSWR		
	S-1	S-2	S-3	S-4	S-5	S-8			(dB)				S	(:1) 1	8
10	9.94	9.93	9.94	9.96	9.96	9.96	0.03	0.09	36.46	39.83	36.79	32.90	1.09	1.28	1.28
20	9.96	9.95	9.96	9.99	9.97	9.97	0.04	0.11	36.38	41.32	36.11	33.08	1.07	1.26	1.26
30	10.00	9.99	9.99	10.02	10.00	10.00	0.04	0.18	35.42	41.58	34.90	32.80	1.07	1.26	1.26
40	10.03	10.02	10.03	10.05	10.03	10.03	0.03	0.29	34.25	41.57	33.56	32.39	1.07	1.26	1.26
50	10.06	10.05	10.06	10.08	10.06	10.06	0.02	0.32	33.15	41.58	32.29	31.89	1.07	1.26	1.26
60	10.09	10.08	10.08	10.11	10.09	10.09	0.02	0.41	32.07	41.61	31.15	31.34	1.06	1.26	1.26
70	10.12	10.11	10.11	10.13	10.11	10.11	0.03	0.54	31.10	41.64	30.09	30.78	1.06	1.26	1.25
80	10.14	10.13	10.13	10.15	10.13	10.13	0.03	0.57	30.19	41.66	29.15	30.19	1.05	1.26	1.25
90	10.17	10.15	10.16	10.17	10.15	10.15	0.03	0.62	29.35	41.77	28.30	29.62	1.05	1.25	1.25
100	10.19	10.18	10.17	10.20	10.17	10.17	0.03	0.71	28.58	41.89	27.52	29.04	1.05	1.25	1.24
125	10.25	10.24	10.23	10.25	10.22	10.22	0.04	0.82	26.95	42.20	25.87	27.78	1.04	1.24	1.23
150	10.31	10.29	10.29	10.29	10.27	10.27	0.06	0.99	25.63	42.74	24.53	26.66	1.05	1.23	1.22
175	10.37	10.35	10.34	10.35	10.32	10.32	0.08	1.13	24.57	43.35	23.41	25.72	1.05	1.22	1.20
200	10.44	10.41	10.40	10.40	10.37	10.37	0.10	1.21	23.67	44.15	22.48	24.88	1.07	1.21	1.19
225	10.51	10.47	10.46	10.45	10.41	10.41	0.13	1.34	22.90	45.14	21.69	24.14	1.09	1.19	1.18
250	10.58	10.53	10.51	10.50	10.46	10.46	0.16	1.41	22.23	46.26	21.01	23.47	1.11	1.18	1.16
275	10.65	10.61	10.58	10.56	10.51	10.51	0.18	1.40	21.67	47.58	20.43	22.89	1.14	1.17	1.14
300	10.73	10.67	10.64	10.61	10.57	10.57	0.21	1.50	21.21	49.12	19.94	22.40	1.16	1.15	1.13
325	10.80	10.74	10.70	10.67	10.62	10.62	0.23	1.54	20.83	50.98	19.54	21.96	1.19	1.14	1.11
350	10.87	10.80	10.76	10.72	10.67	10.67	0.26	1.48	20.51	53.12	19.20	21.57	1.22	1.13	1.09
375	10.94	10.87	10.83	10.77	10.72	10.72	0.29	1.47	20.25	55.80	18.94	21.23	1.25	1.11	1.08
400	11.01	10.94	10.88	10.83	10.78	10.78	0.31	1.45	20.07	59.19	18.74	20.95	1.29	1.09	1.06
425	11.07	11.00	10.93	10.88	10.83	10.83	0.33	1.38	19.95	64.00	18.61	20.71	1.32	1.08	1.04
450	11.13	11.06	10.99	10.93	10.87	10.87	0.35	1.47	19.89	73.11	18.55	20.53	1.35	1.07	1.03
475	11.18	11.11	11.03	10.97	10.92	10.92	0.37	1.52	19.89	76.20	18.56	20.38	1.37	1.05	1.02
500	11.23	11.16	11.07	11.02	10.96	10.96	0.37	1.63	19.94	66.23	18.64	20.27	1.40	1.04	1.02
525	11.26	11.21	11.11	11.05	11.00	11.00	0.38	1.88	20.07	61.90	18.78	20.20	1.42	1.03	1.03
550	11.29	11.24	11.13	11.08	11.04	11.04	0.38	2.12	20.24	59.02	19.02	20.17	1.44	1.03	1.05
575	11.31	11.28	11.16	11.11	11.08	11.08	0.38	2.40	20.48	56.14	19.33	20.21	1.45	1.04	1.06
600	11.31	11.29	11.16	11.13	11.11	11.11	0.36	2.70	20.78	53.88	19.73	20.27	1.46	1.05	1.08
625	11.31	11.31	11.17	11.14	11.14	11.14	0.34	3.04	21.14	51.67	20.25	20.39	1.46	1.07	1.09
650	11.30	11.32	11.17	11.14	11.16	11.16	0.33	3.42	21.53	49.65	20.86	20.56	1.45	1.08	1.10
675	11.28	11.32	11.17	11.15	11.19	11.19	0.32	3.83	21.93	47.75	21.60	20.78	1.43	1.10	1.12
700	11.25	11.32	11.16	11.15	11.22	11.22	0.30	4.30	22.34	45.89	22.45	21.07	1.41	1.12	1.13
725	11.22	11.32	11.15	11.16	11.25	11.25	0.28	4.84	22.65	44.28	23.38	21.46	1.38	1.13	1.15
750	11.20	11.32	11.16	11.17	11.29	11.29	0.25	5.39	22.76	42.67	24.26	21.89	1.34	1.15	1.16
775	11.16	11.31	11.13	11.17	11.33	11.33	0.24	6.00	22.71	41.23	24.84	22.46	1.30	1.17	1.17
800	11.15	11.32	11.13	11.19	11.39	11.39	0.26	6.69	22.31	39.82	24.84	23.16	1.25	1.19	1.18
825	11.14	11.34	11.15	11.23	11.48	11.48	0.34	7.42	21.62	38.50	24.02	24.09	1.20	1.21	1.19
850	11.15	11.38	11.19	11.29	11.57	11.57	0.42	8.27	20.70	37.20	22.61	25.04	1.17	1.22	1.20
875	11.18	11.43	11.26	11.37	11.71	11.71	0.53	9.17	19.62	36.02	21.00	26.44	1.17	1.24	1.21
900	11.25	11.53	11.35	11.49	11.87	11.87	0.62	10.11	18.49	34.86	19.33	28.17	1.21	1.26	1.21
925	11.35	11.65	11.50	11.64	12.09	12.09	0.74	11.09	17.34	33.76	17.77	30.55	1.29	1.28	1.22
950	11.50	11.82	11.69	11.85	12.36	12.36	0.86	12.20	16.22	32.75	16.34	33.91	1.40	1.29	1.23
975	11.70	12.03	11.94	12.11	12.70	12.70	0.99	13.32	15.16	31.77	15.05	39.10	1.54	1.31	1.23
1000	11.96	12.30	12.24	12.44	13.09	13.09	1.14	14.52	14.17	30.92	13.89	42.86	1.69	1.33	1.24
1050	12.63	12.99	13.03	13.25	14.09	14.09	1.45	18.21	12.41	29.50	11.93	33.01	2.06	1.36	1.26
1100	13.52	13.87	14.04	14.28	15.30	15.30	1.78	22.01	10.94	28.56	10.39	28.23	2.48	1.39	1.28
1150	14.59	14.91	15.20	15.45	16.70	16.70	2.16	25.39	9.72	28.06	9.17	25.75	2.92	1.41	1.30
1200	15.80	16.09	16.47	16.72	18.18	18.18	2.55	28.12	8.72	27.99	8.23	24.40	3.33	1.44	1.34
1250	17.14	17.37	17.76	17.99	19.72	19.72	2.77	30.37	7.90	28.24	7.50	23.80	3.68	1.48	1.38
1300	18.61	18.77	19.00	19.20	21.32	21.32	2.71	32.15	7.21	28.82	6.98	23.82	3.95	1.52	1.42
1350	20.31	20.37	20.12	20.25	23.08	23.08	2.96	35.11	6.65	29.89	6.70	24.59	4.10	1.56	1.46
1400	22.48	22.49	21.17	21.16	25.44	25.44	4.29	43.94	6.14	31.85	6.86	27.04	4.10	1.61	1.51
1450	25.32	25.45	23.45	23.18	30.14	30.14	7.55	73.62	5.67	33.63	7.71	36.76	4.02	1.69	1.58
1500	26.65	26.46	30.88	29.88	34.30	34.30	7.84	135.78	5.38	31.68	7.38	30.20	4.07	1.75	1.67

¹Total Loss = Insertion Loss + 9dB Splitter Loss

REV. X2
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Page 3 of 3



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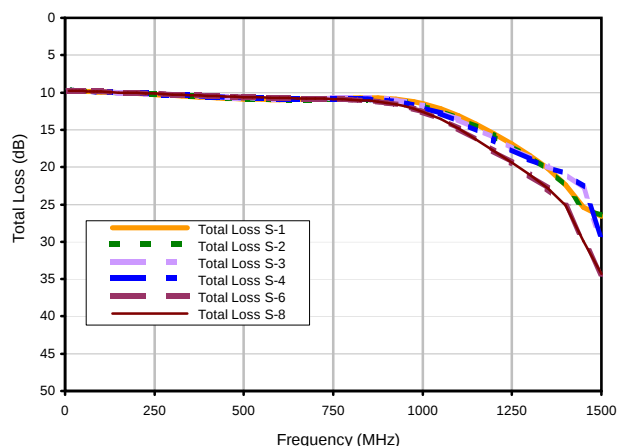


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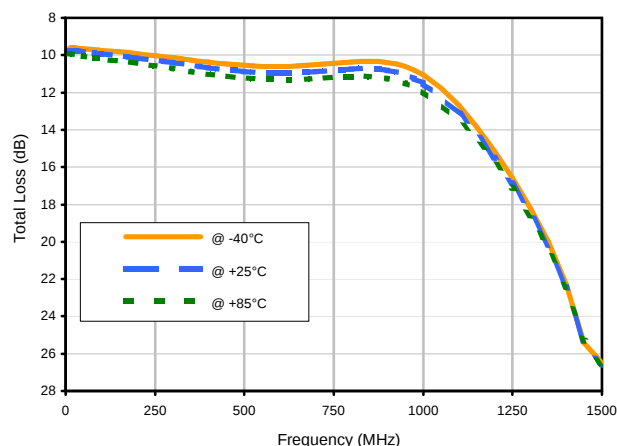


Typical Performance Curves

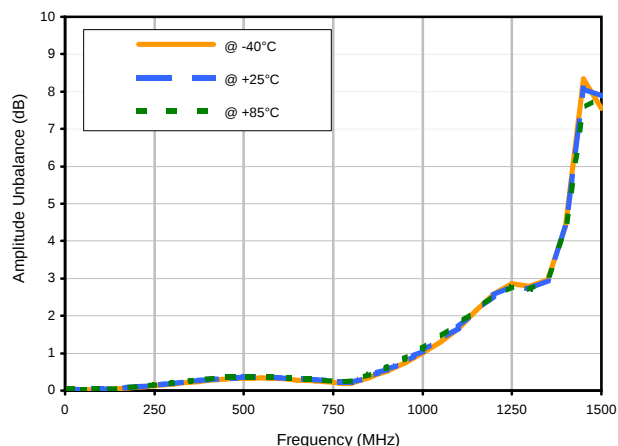
Total Loss



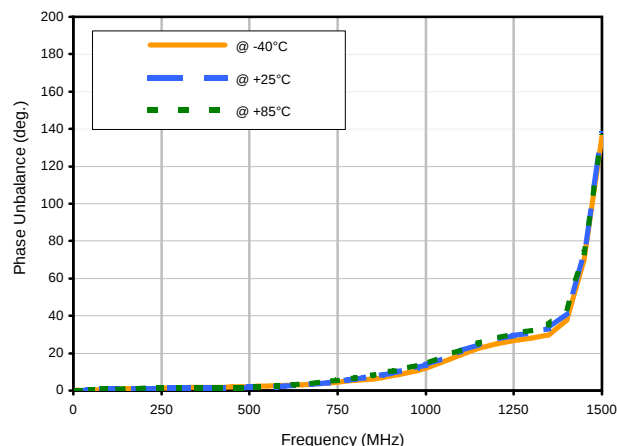
Total Loss S-1 vs. TEMPERATURE



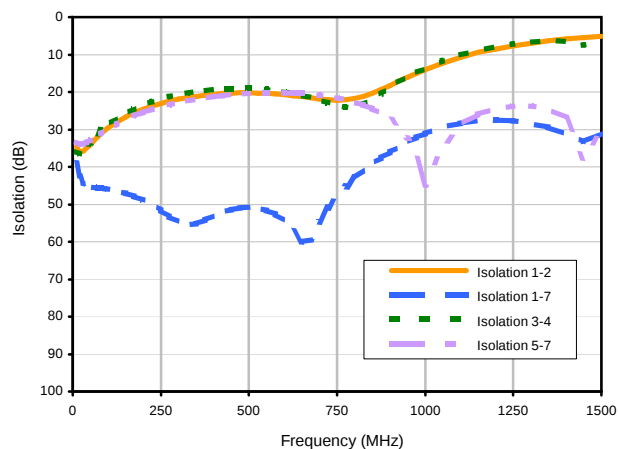
Amplitude Unbalance vs. TEMPERATURE



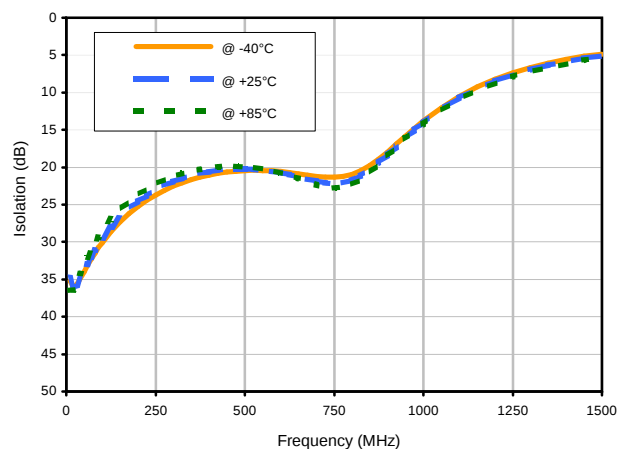
Phase Unbalance vs. TEMPERATURE



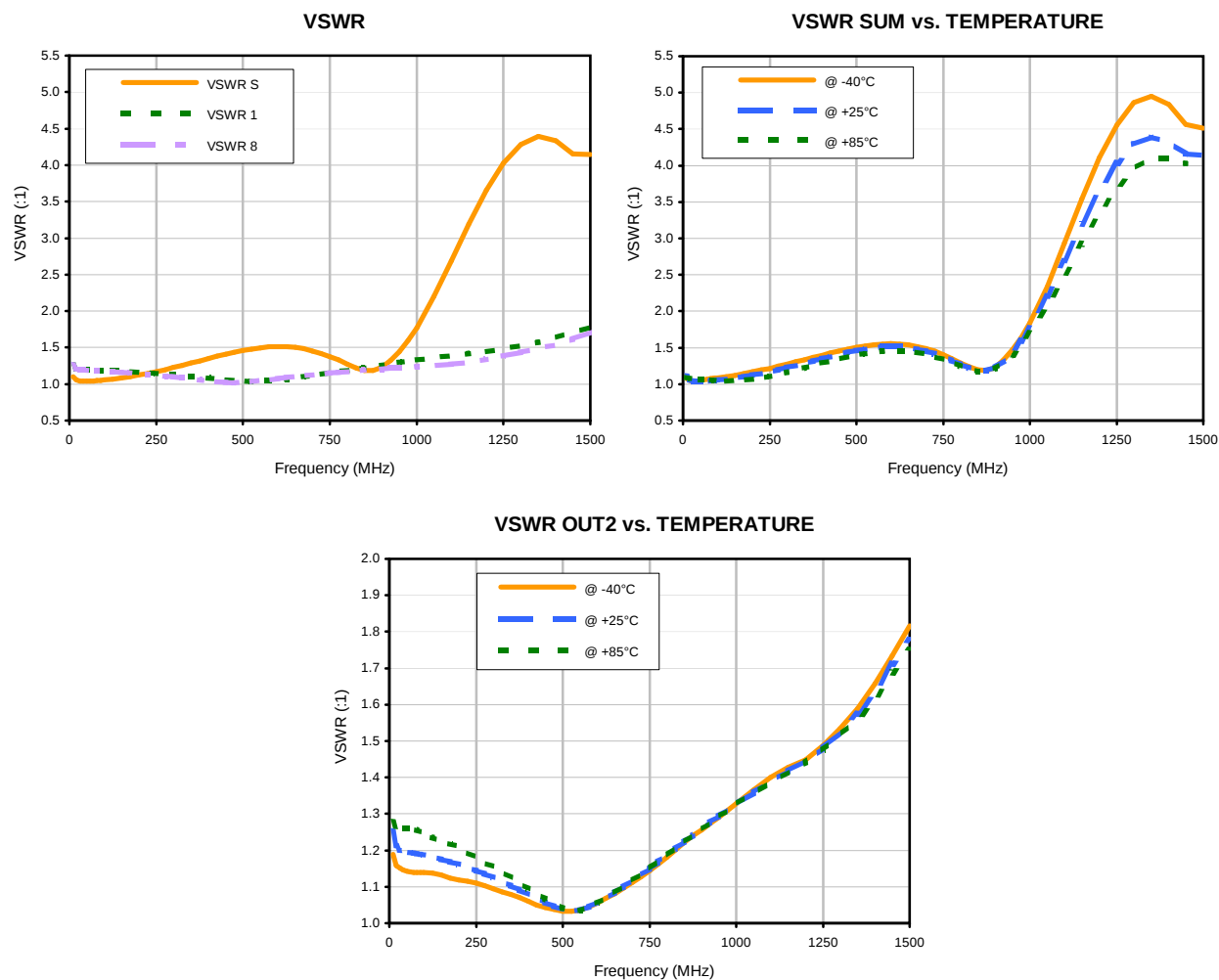
Isolation



Isolation 1-2 vs. TEMPERATURE

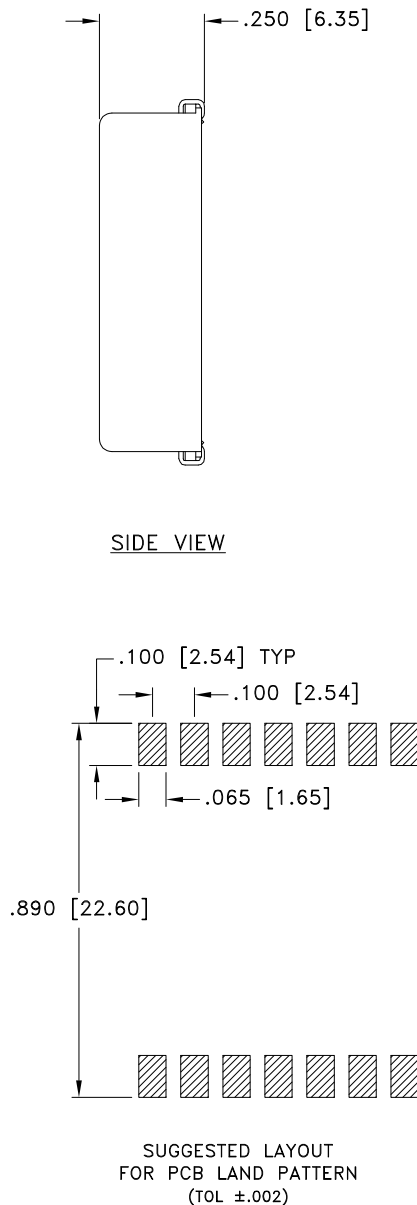
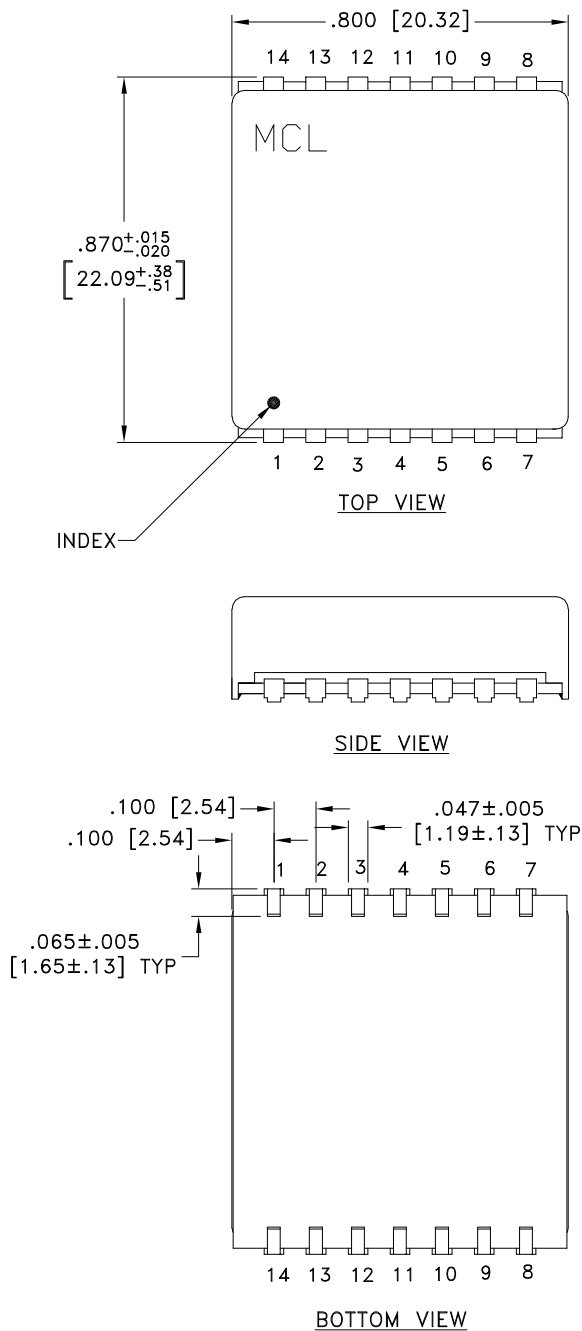


Typical Performance Curves



Outline Dimensions

BG291



DENOTES METALLIZATION

Weight: 4 gram

Dimensions are in inches[mm]. Tolerances: 2PL $\pm$ 0.03[0.76]; 3 PL $\pm$ 0.015 [0.381] inches[mm], unless otherwise specified

Notes:

1. Case material: Copper-Nickel alloy.
2. Base material: Printed wiring laminate.
3. Termination finish:

For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.

For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

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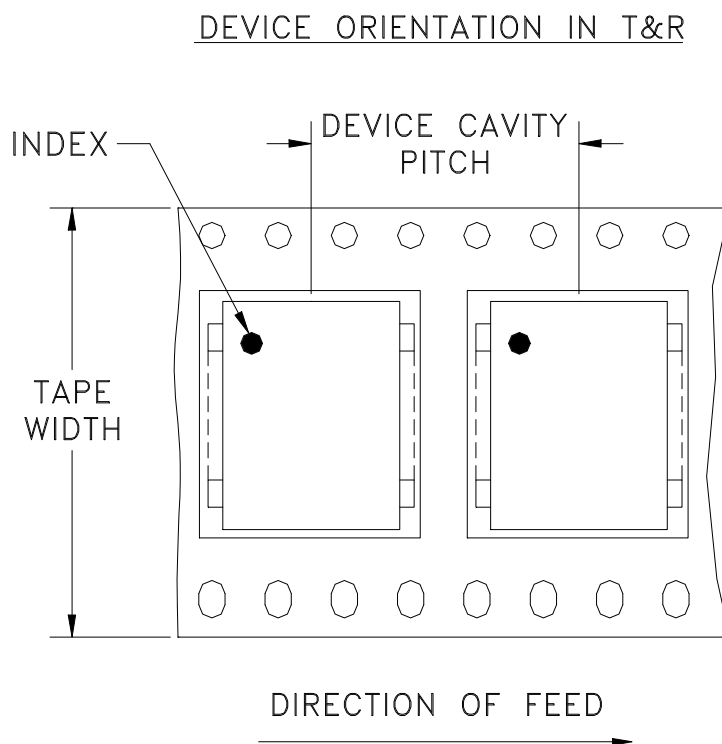
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Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
32	32	13	200

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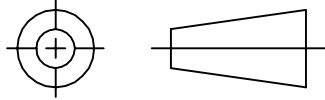
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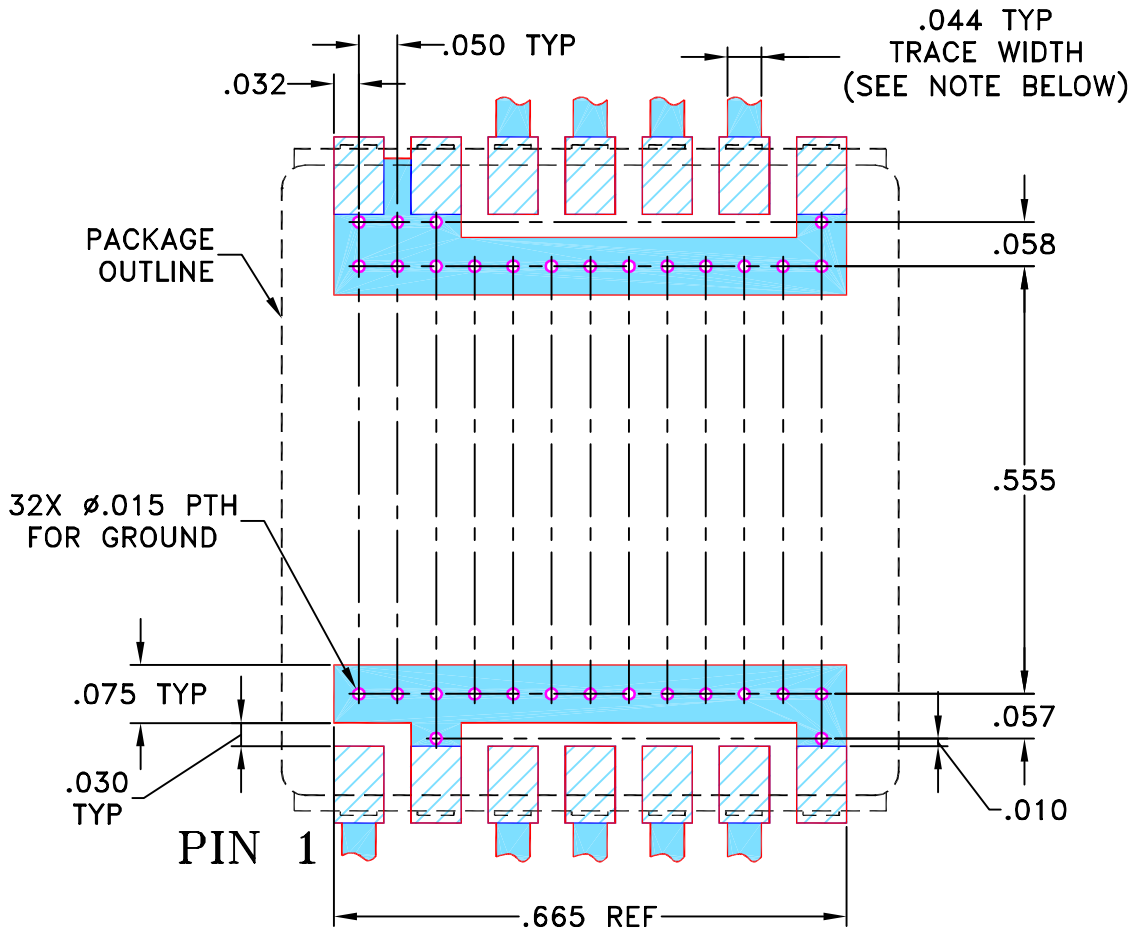
THIRD ANGLE PROJECTION



REVISIONS

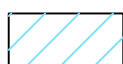
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M77531	NEW RELEASE	07/01	MMG	CT
A	M82377	UPDATED DRAWING	07/31/02	AV	HY
B	M102713	UPDATED NOTES	01/12/06	GF	IL

SUGGESTED MOUNTING CONFIGURATION FOR BG291 CASE STYLE, "hn" PIN CONNECTION



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS $0.020'' \pm 0.0015''$; 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

UNLESS OTHERWISE SPECIFIED	INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN MMG	08/16/01
TOLERANCES ON:	CHECKED WP	09/06/01
2 PL DECIMALS $\pm$	APPROVED CT	09/07/01
3 PL DECIMALS $\pm$.005		
ANGLES $\pm$		
FRACTIONS $\pm$		

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ASHEETA1.DWG REV:A DATE:01/12/95

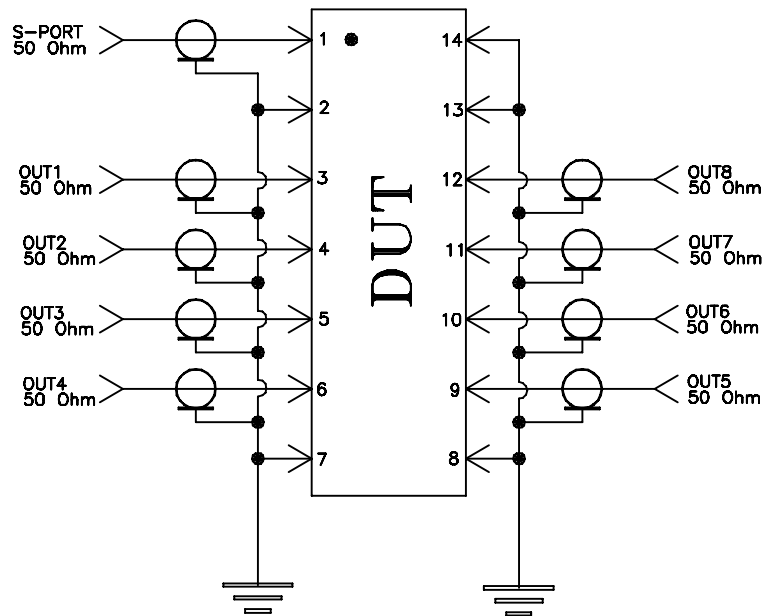
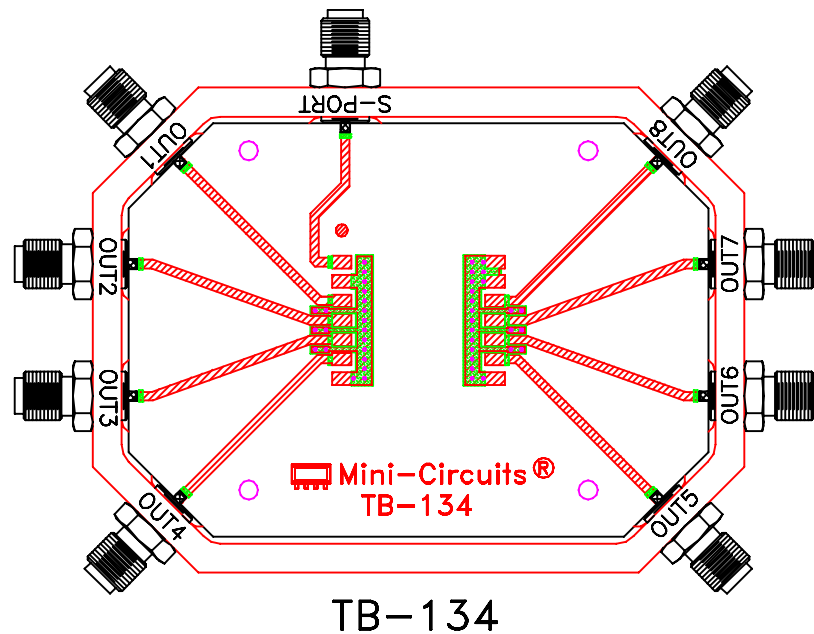


Mini-Circuits® 13 Neptune Avenue
Brooklyn NY 11235

PL, hn, BG291, JCPS-8, TB-134

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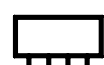
Evaluation Board and Circuit



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.020 inch.

 **Mini-Circuits®**



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, 95% Coverage
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215