

Power Splitter/Combiner 8 Way-0°

SEPS-ED14112/1

Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability. At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.



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CASE STYLE : BL372-1

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency		2		2700	MHz
Isolation	2-20 MHz		28		dB
	20-1350 MHz		16		dB
	1350-2700 MHz		16		dB
Insertion Loss Above 9 dB	2-20 MHz		1.5		dB
	20-1350 MHz		2.0		dB
	1350-2700 MHz		6.0		dB
Phase Unbalance	2-20 MHz		0.5		deg.
	20-1350 MHz		10.0		deg.
	1350-2700 MHz		30.0		deg.
Amplitude Unbalance	2-20 MHz		0.1		dB
	20-1350 MHz		0.4		dB
	1350-2700 MHz		1.3		dB
VSWR	SUM Port		1.60		(:1)
	OUT Ports		1.50		(:1)

MAXIMUM RATINGS	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

PIN CONNECTIONS	
SUM PORT	18
PORT 1	1
PORT 2	3
PORT 3	4
PORT 4	6
PORT 5	7
PORT 6	9
PORT 7	10
PORT 8	12
GND EXT	2,5,8,11,13,14,15,16, 17,19,20,21,22,23,24

Functional Diagram



8 Way-0° Power Splitter/Combiner

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Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹						AMP. UNBAL. (dB)	ISOLATION				PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR		
	S-1	S-2	S-3	S-4	S-6	S-8		1-2	1-3	3-4	6-7			S	1	8
2.0	10.12	10.13	10.14	10.11	10.16	10.16	0.05	32.15	32.79	31.45	34.35	0.30	2.0	1.25	2.47	2.44
2.5	10.05	10.05	10.07	10.04	10.09	10.08	0.05	32.24	33.84	31.71	35.89	0.25	2.5	1.23	2.24	2.22
3.0	10.00	10.01	10.02	10.01	10.05	10.03	0.05	32.11	34.91	31.88	37.34	0.25	3.0	1.22	2.08	2.07
4.0	9.96	9.96	9.97	9.97	10.00	9.98	0.04	32.18	36.85	32.29	39.44	0.23	4.0	1.22	1.87	1.88
5.0	9.93	9.93	9.93	9.94	9.96	9.95	0.04	32.19	38.07	32.52	41.45	0.19	5.0	1.21	1.75	1.77
6.0	9.92	9.91	9.92	9.92	9.94	9.93	0.02	32.20	39.21	32.70	43.23	0.15	6.0	1.21	1.67	1.70
7.0	9.91	9.90	9.91	9.90	9.93	9.91	0.03	32.17	40.27	32.75	44.98	0.18	7.0	1.21	1.62	1.65
8.0	9.89	9.90	9.90	9.90	9.92	9.91	0.03	32.32	41.13	32.90	46.64	0.19	8.0	1.21	1.58	1.61
9.0	9.89	9.88	9.88	9.89	9.91	9.91	0.04	32.28	41.89	33.04	48.81	0.17	9.0	1.21	1.55	1.59
10.0	9.89	9.89	9.90	9.89	9.91	9.90	0.03	32.24	41.94	33.00	49.97	0.23	10.0	1.21	1.53	1.57
30.0	9.92	9.92	9.93	9.94	9.95	9.94	0.03	31.58	43.05	32.37	47.69	0.22	30.0	1.22	1.45	1.50
50.0	9.99	9.99	10.00	9.99	10.01	9.98	0.03	30.48	41.01	30.94	42.27	0.34	50.0	1.23	1.44	1.49
70.0	10.02	10.02	10.03	10.03	10.04	10.02	0.02	29.17	38.59	29.31	38.76	0.34	70.0	1.25	1.44	1.48
90.0	10.06	10.05	10.07	10.07	10.07	10.06	0.02	27.89	37.04	27.80	36.66	0.47	90.0	1.28	1.43	1.48
100.0	10.07	10.06	10.08	10.08	10.08	10.07	0.02	27.30	36.13	27.20	35.55	0.45	100.0	1.29	1.43	1.48
150.0	10.17	10.16	10.18	10.19	10.17	10.16	0.03	24.75	33.11	24.42	32.33	0.63	150.0	1.36	1.43	1.48
200.0	10.27	10.26	10.29	10.30	10.27	10.25	0.05	22.77	30.93	22.40	30.10	0.84	200.0	1.43	1.43	1.48
250.0	10.37	10.37	10.40	10.40	10.36	10.36	0.05	21.31	29.38	20.87	28.60	0.92	250.0	1.50	1.43	1.48
300.0	10.47	10.46	10.51	10.51	10.45	10.45	0.07	20.12	28.05	19.66	27.45	1.03	300.0	1.55	1.43	1.48
350.0	10.55	10.54	10.61	10.60	10.53	10.54	0.08	19.17	27.07	18.70	26.62	1.12	350.0	1.60	1.43	1.48
400.0	10.63	10.61	10.70	10.69	10.59	10.60	0.10	18.42	26.22	17.97	26.07	1.19	400.0	1.63	1.42	1.47
450.0	10.68	10.68	10.77	10.76	10.65	10.67	0.12	17.83	25.49	17.35	25.59	1.33	450.0	1.64	1.41	1.46
500.0	10.73	10.72	10.82	10.81	10.69	10.70	0.14	17.37	24.92	16.91	25.39	1.37	500.0	1.64	1.39	1.43
550.0	10.77	10.74	10.86	10.84	10.71	10.72	0.15	17.01	24.41	16.55	25.23	1.48	550.0	1.63	1.37	1.41
600.0	10.78	10.76	10.89	10.87	10.71	10.74	0.18	16.79	24.01	16.31	25.24	1.62	600.0	1.61	1.35	1.38
650.0	10.79	10.76	10.91	10.89	10.72	10.75	0.19	16.67	23.67	16.18	25.35	1.83	650.0	1.57	1.32	1.35
700.0	10.80	10.75	10.91	10.88	10.70	10.74	0.21	16.65	23.42	16.14	25.60	1.94	700.0	1.53	1.29	1.32
750.0	10.79	10.75	10.91	10.89	10.69	10.73	0.22	16.72	23.21	16.19	25.87	2.10	750.0	1.49	1.26	1.28
800.0	10.79	10.74	10.92	10.90	10.68	10.74	0.24	16.87	23.11	16.31	26.14	2.30	800.0	1.44	1.23	1.25
850.0	10.80	10.75	10.94	10.91	10.66	10.74	0.28	17.12	23.09	16.51	26.39	2.26	850.0	1.40	1.20	1.22
900.0	10.81	10.75	10.94	10.92	10.68	10.75	0.26	17.43	23.09	16.78	26.55	2.42	900.0	1.36	1.18	1.19
950.0	10.82	10.75	10.96	10.92	10.67	10.76	0.29	17.83	23.21	17.10	26.61	2.42	950.0	1.32	1.16	1.17
1000.0	10.82	10.76	10.99	10.94	10.67	10.79	0.32	18.27	23.35	17.42	26.46	2.58	1000.0	1.30	1.15	1.15
1100.0	10.90	10.81	11.05	11.00	10.72	10.86	0.33	19.08	23.78	18.02	25.81	2.72	1100.0	1.27	1.14	1.13
1200.0	10.98	10.90	11.16	11.10	10.78	10.95	0.39	19.69	24.43	18.36	25.05	2.75	1200.0	1.27	1.13	1.12
1300.0	11.12	11.02	11.29	11.23	10.87	11.08	0.43	19.96	25.24	18.36	24.45	2.85	1300.0	1.31	1.13	1.14
1400.0	11.25	11.15	11.43	11.36	10.95	11.20	0.48	19.93	26.11	18.16	24.00	2.81	1400.0	1.36	1.13	1.16
1500.0	11.41	11.30	11.60	11.53	11.04	11.33	0.56	19.85	26.94	17.89	23.67	2.62	1500.0	1.42	1.13	1.19
1600.0	11.55	11.43	11.75	11.69	11.13	11.42	0.62	19.76	27.75	17.67	23.35	2.61	1600.0	1.44	1.14	1.21
1700.0	11.69	11.57	11.91	11.83	11.20	11.51	0.71	19.79	28.48	17.51	23.02	2.48	1700.0	1.44	1.15	1.22
1800.0	11.79	11.70	12.03	11.96	11.28	11.58	0.75	20.00	28.95	17.48	22.58	2.70	1800.0	1.39	1.16	1.22
1900.0	11.90	11.81	12.17	12.09	11.35	11.64	0.82	20.46	29.02	17.59	21.85	3.04	1900.0	1.31	1.17	1.20
2000.0	12.08	11.97	12.33	12.26	11.45	11.75	0.87	21.22	28.28	17.84	21.00	3.56	2000.0	1.24	1.17	1.18
2100.0	12.32	12.23	12.57	12.50	11.66	11.94	0.91	22.31	27.40	18.22	20.06	4.09	2100.0	1.29	1.17	1.15
2200.0	12.68	12.60	12.94	12.86	11.99	12.27	0.95	23.36	26.57	18.35	19.43	4.44	2200.0	1.46	1.19	1.14
2300.0	13.15	13.08	13.39	13.32	12.44	12.73	0.95	23.71	26.22	18.11	19.28	4.88	2300.0	1.70	1.22	1.15
2400.0	13.69	13.62	13.90	13.82	12.87	13.20	1.02	23.12	26.80	17.42	19.88	5.22	2400.0	1.92	1.23	1.15
2500.0	14.20	14.14	14.40	14.29	13.29	13.64	1.11	22.18	28.29	16.58	21.34	5.76	2500.0	2.08	1.23	1.13
2550.0	14.39	14.35	14.58	14.45	13.43	13.84	1.15	21.69	29.62	16.11	22.49	6.14	2550.0	2.12	1.23	1.11
2600.0	14.59	14.55	14.80	14.61	13.58	14.04	1.23	21.28	31.75	15.67	24.09	5.98	2600.0	2.14	1.20	1.08
2650.0	14.81	14.77	15.00	14.82	13.72	14.24	1.28	20.94	35.27	15.28	26.13	6.02	2650.0	2.13	1.18	1.05
2700.0	15.08	15.06	15.29	15.08	13.94	14.48	1.34	20.68	40.88	14.92	28.62	6.19	2700.0	2.16	1.15	1.03

¹Total Loss = Insertion Loss + 9dB Splitter Loss



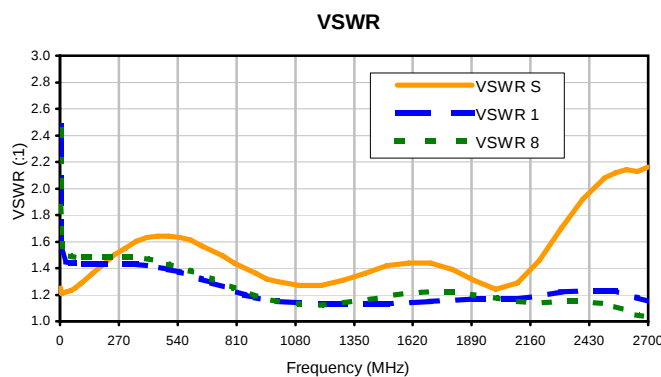
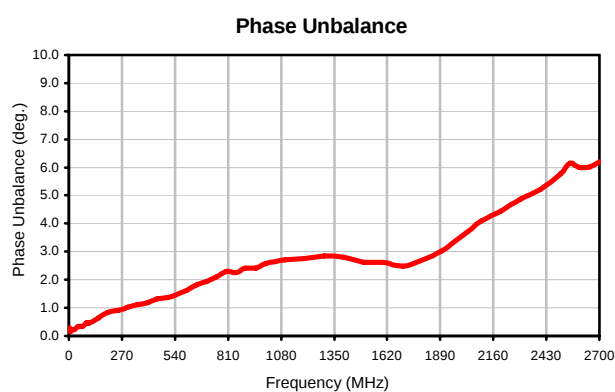
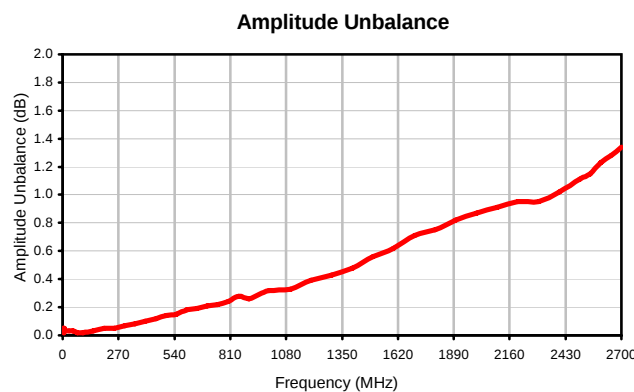
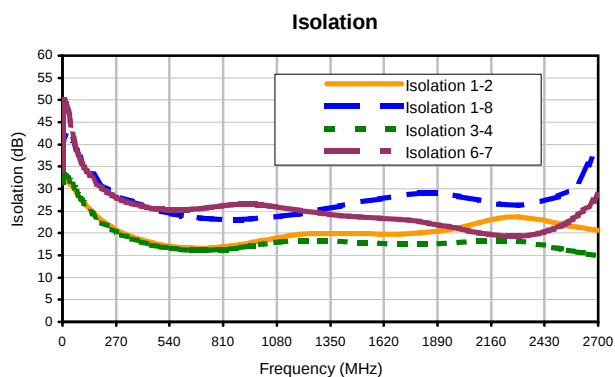
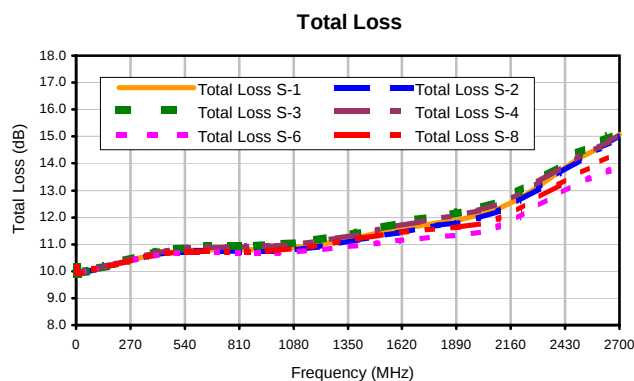
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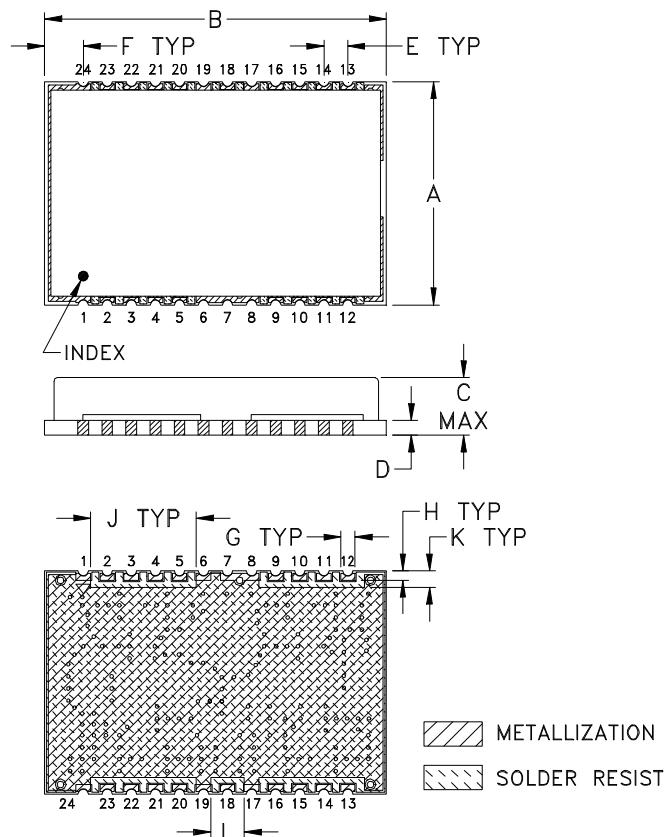
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Typical Performance Curves

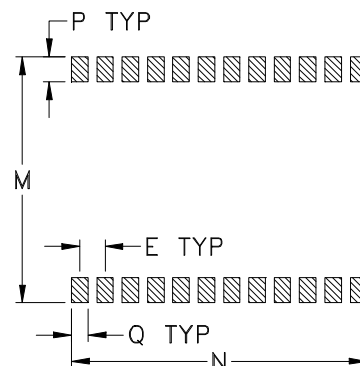


Outline Dimensions

BL372-1



PCB Land Pattern



Suggested Layout,
Tolerance to be within $\pm .002$

CASE #	A	B	C	D	E	F	G	H	J	K	L	M
BL372-1	.93 (23.62)	1.42 (36.07)	.250 (6.35)	.062 (1.57)	.100 (2.54)	.160 (4.06)	.060 (1.52)	.040 (1.02)	.440 (11.18)	.070 (1.78)	.140 (3.56)	.970 (24.64)

CASE #	N	P	Q	WT. GRAM
BL372-1	1.165 (29.59)	.100 (2.54)	.065 (1.65)	6.5

Dimensions are in inches (mm). Tolerances: 2Pl. $\pm .01$; 3Pl. $\pm .005$

Notes:

- Case material: Copper-Nickel alloy.
- Base material: Printed wiring laminate.
- Termination finish:
For RoHS Case Styles: 3-5pinch Gold over 120-240pinch Nickel plate. All models, (+) suffix.
For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.



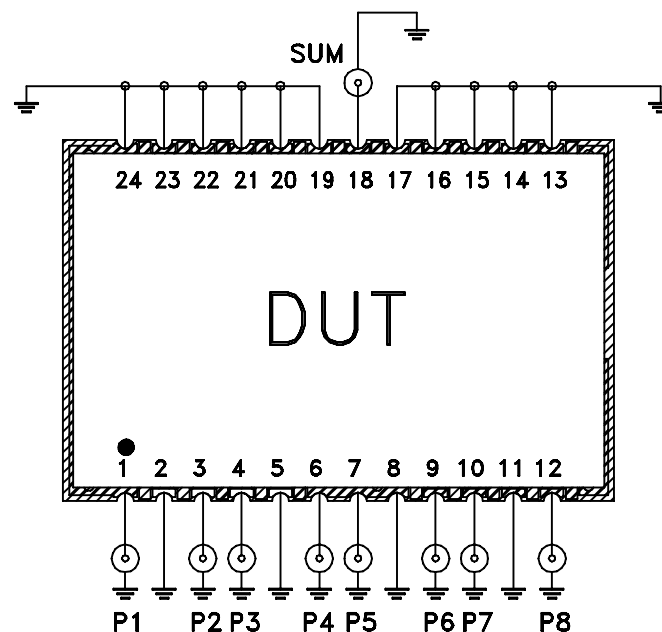
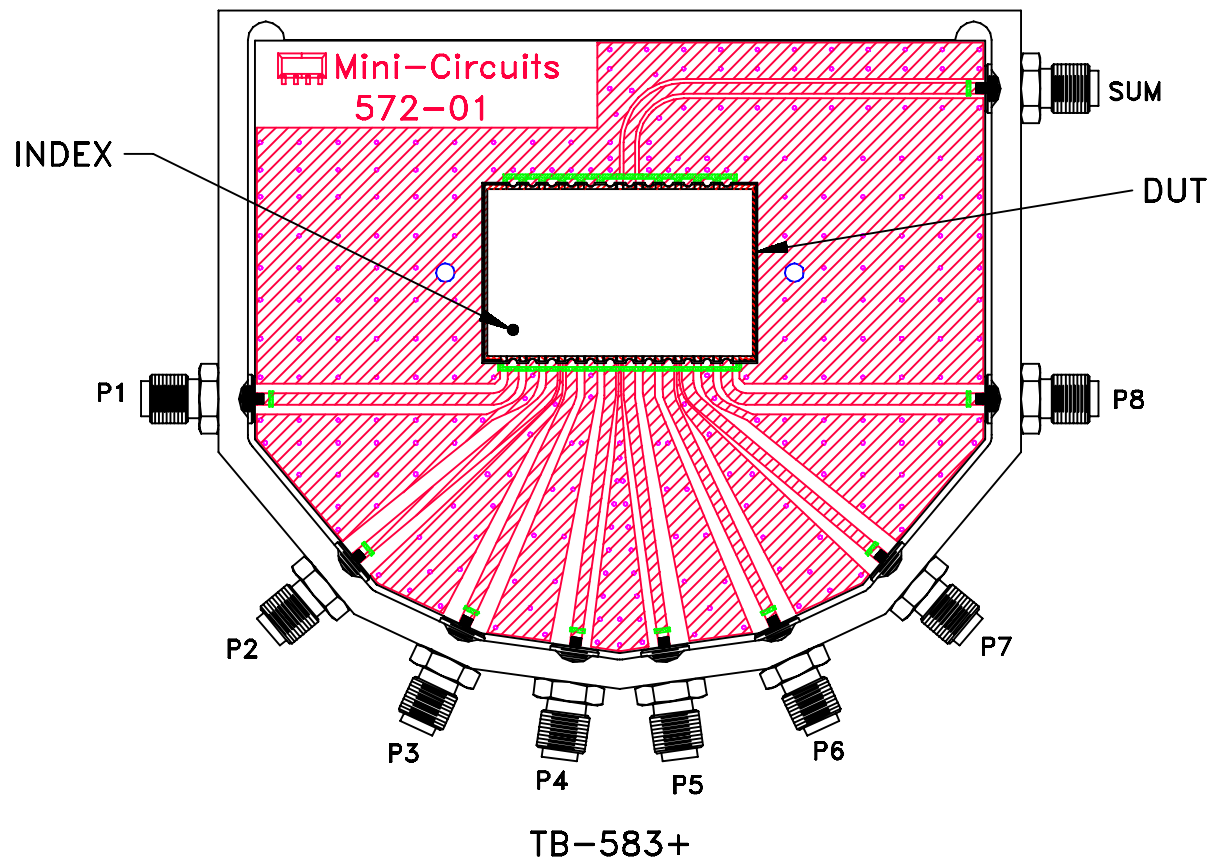
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Evaluation Board and Circuit



Schematic Diagram

NOTES:

1. SMA Female connectors.
2. PCB material: Rogers R04350 or equivalent, dielectric constant=3.5, dielectric thickness=.030 inch.

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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