

Engineering Development Model

Power Splitter/Combiner

JEPS-ED13138/1

8 Way-0°

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.



CASE STYLE : BL372

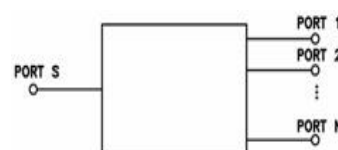
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ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency		0.5		250	MHz
Isolation	0.5 - 5 MHz		36		dB
	5 - 125 MHz		34		dB
	125 - 250 MHz		33		dB
Insertion Loss Above 9.0 dB	0.5 - 5 MHz		0.30		dB
	5 - 125 MHz		0.70		dB
	125 - 250 MHz		1.20		dB
Phase Unbalance	0.5 - 5 MHz		0.20		deg.
	5 - 125 MHz		0.65		deg.
	125 - 250 MHz		1.70		deg.
Amplitude Unbalance	0.5 - 5 MHz		0.01		dB
	5 - 125 MHz		0.04		dB
	125 - 250 MHz		0.20		dB
VSWR	SUM Port		1.35		(:1)
	OUT Ports		1.25		(:1)

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

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

Functional Diagram



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Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹ (dB)						AMP. UNBAL. (dB)	ISOLATION (dB)				PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)		
	S-1	S-2	S-3	S-4	S-6	S-8		1-2	1-8	3-4	6-8			S	1	8
0.04	9.35	9.35	9.34	9.35	9.40	9.40	0.06	25.08	39.41	21.97	35.22	1.11	0.04	1.47	1.64	1.74
0.05	9.29	9.29	9.29	9.29	9.32	9.32	0.04	26.50	41.10	23.39	37.02	0.92	0.05	1.37	1.50	1.57
0.06	9.26	9.26	9.26	9.26	9.28	9.28	0.03	27.68	42.75	24.61	38.51	0.75	0.06	1.30	1.40	1.46
0.07	9.24	9.24	9.24	9.24	9.26	9.26	0.02	28.67	44.08	25.67	39.75	0.68	0.07	1.25	1.34	1.39
0.08	9.23	9.23	9.23	9.23	9.24	9.24	0.02	29.54	45.17	26.60	40.81	0.58	0.08	1.22	1.29	1.33
0.09	9.22	9.22	9.22	9.22	9.23	9.23	0.01	30.24	46.37	27.46	41.77	0.54	0.09	1.19	1.26	1.29
0.10	9.22	9.22	9.22	9.22	9.23	9.23	0.01	30.87	47.00	28.19	42.58	0.50	0.10	1.17	1.23	1.26
0.20	9.22	9.22	9.22	9.22	9.22	9.22	0.01	33.93	52.25	32.46	46.37	0.24	0.20	1.09	1.11	1.12
0.30	9.22	9.22	9.22	9.22	9.22	9.22	0.01	34.86	54.99	34.19	48.31	0.16	0.30	1.06	1.08	1.08
0.40	9.22	9.22	9.22	9.22	9.22	9.22	0.01	35.22	56.35	35.00	48.89	0.14	0.40	1.05	1.06	1.07
0.50	9.21	9.21	9.21	9.22	9.21	9.21	0.01	35.32	57.33	35.34	49.87	0.10	0.50	1.04	1.05	1.06
0.60	9.21	9.21	9.21	9.21	9.21	9.21	0.00	35.32	57.54	35.52	50.44	0.08	0.60	1.04	1.05	1.05
0.70	9.21	9.20	9.20	9.21	9.20	9.21	0.00	35.33	57.96	35.64	51.12	0.07	0.70	1.04	1.04	1.05
0.80	9.20	9.20	9.20	9.20	9.20	9.20	0.01	35.30	58.58	35.67	51.29	0.08	0.80	1.04	1.04	1.04
0.90	9.19	9.20	9.20	9.20	9.20	9.20	0.01	35.30	59.08	35.64	52.01	0.07	0.90	1.03	1.04	1.04
1.00	9.20	9.19	9.19	9.20	9.19	9.19	0.01	35.23	58.93	35.58	52.47	0.06	1.00	1.03	1.04	1.04
3.00	9.19	9.19	9.19	9.19	9.19	9.19	0.01	35.03	58.10	35.37	54.23	0.05	3.00	1.03	1.03	1.03
5.00	9.20	9.20	9.20	9.20	9.20	9.20	0.00	35.12	56.42	35.34	54.45	0.09	5.00	1.03	1.03	1.03
7.00	9.22	9.21	9.22	9.22	9.21	9.22	0.01	35.12	54.79	35.41	54.20	0.10	7.00	1.04	1.03	1.04
9.00	9.23	9.23	9.23	9.23	9.23	9.23	0.01	35.28	53.51	35.50	53.47	0.12	9.00	1.04	1.04	1.04
10.00	9.24	9.23	9.24	9.24	9.23	9.24	0.00	35.31	53.11	35.55	53.22	0.13	10.00	1.05	1.04	1.04
20.00	9.30	9.29	9.29	9.30	9.29	9.30	0.01	35.63	49.30	35.91	50.37	0.28	20.00	1.07	1.04	1.05
30.00	9.35	9.34	9.34	9.34	9.34	9.35	0.01	35.81	46.96	36.16	48.50	0.43	30.00	1.10	1.05	1.05
40.00	9.39	9.38	9.38	9.39	9.38	9.40	0.01	35.90	45.26	36.32	46.94	0.56	40.00	1.12	1.05	1.06
50.00	9.44	9.42	9.42	9.43	9.42	9.44	0.02	35.90	43.96	36.41	45.91	0.68	50.00	1.15	1.06	1.07
60.00	9.48	9.46	9.46	9.46	9.46	9.48	0.03	35.86	42.88	36.45	45.14	0.80	60.00	1.17	1.07	1.08
70.00	9.53	9.50	9.49	9.50	9.49	9.52	0.04	35.78	42.02	36.46	44.53	0.91	70.00	1.19	1.07	1.09
80.00	9.57	9.54	9.53	9.53	9.52	9.56	0.05	35.67	41.23	36.45	44.08	0.99	80.00	1.21	1.08	1.10
90.00	9.62	9.57	9.56	9.56	9.56	9.60	0.06	35.56	40.59	36.42	43.80	1.06	90.00	1.23	1.08	1.11
100.00	9.66	9.61	9.59	9.59	9.59	9.65	0.07	35.44	40.04	36.35	43.65	1.12	100.00	1.24	1.09	1.11
110.00	9.70	9.64	9.62	9.62	9.62	9.69	0.09	35.31	39.55	36.30	43.63	1.19	110.00	1.26	1.10	1.12
120.00	9.75	9.68	9.65	9.65	9.65	9.73	0.10	35.17	39.11	36.23	43.73	1.25	120.00	1.27	1.10	1.13
130.00	9.79	9.71	9.68	9.68	9.68	9.77	0.12	35.00	38.72	36.16	43.95	1.31	130.00	1.29	1.11	1.14
140.00	9.84	9.75	9.71	9.71	9.71	9.81	0.13	34.81	38.37	36.08	44.20	1.38	140.00	1.30	1.11	1.15
150.00	9.88	9.78	9.74	9.74	9.74	9.85	0.14	34.62	38.09	36.00	44.51	1.44	150.00	1.31	1.12	1.16
160.00	9.92	9.82	9.77	9.77	9.77	9.89	0.16	34.43	37.81	35.91	44.83	1.51	160.00	1.31	1.13	1.16
170.00	9.97	9.85	9.80	9.80	9.80	9.94	0.17	34.23	37.57	35.83	45.20	1.57	170.00	1.32	1.13	1.17
180.00	10.01	9.89	9.83	9.83	9.83	9.98	0.18	34.01	37.36	35.74	45.48	1.62	180.00	1.32	1.14	1.18
190.00	10.05	9.93	9.86	9.86	9.87	10.03	0.19	33.76	37.16	35.66	45.57	1.67	190.00	1.33	1.15	1.19
200.00	10.10	9.96	9.90	9.89	9.90	10.08	0.20	33.51	36.98	35.59	45.29	1.71	200.00	1.33	1.16	1.20
210.00	10.14	10.00	9.93	9.93	9.94	10.14	0.21	33.24	36.79	35.53	44.59	1.75	210.00	1.33	1.17	1.21
220.00	10.19	10.05	9.97	9.97	9.98	10.19	0.22	33.02	36.60	35.50	43.54	1.78	220.00	1.34	1.18	1.22
230.00	10.23	10.09	10.02	10.01	10.03	10.26	0.24	32.84	36.38	35.50	42.34	1.88	230.00	1.35	1.19	1.24
240.00	10.28	10.14	10.07	10.06	10.09	10.32	0.26	32.74	36.13	35.55	41.16	1.99	240.00	1.36	1.20	1.25
250.00	10.33	10.19	10.12	10.12	10.15	10.39	0.28	32.69	35.82	35.63	40.05	2.10	250.00	1.37	1.21	1.26
260.00	10.38	10.25	10.18	10.18	10.21	10.47	0.30	32.72	35.44	35.76	39.03	2.20	260.00	1.39	1.23	1.27
270.00	10.44	10.31	10.25	10.24	10.29	10.56	0.31	32.80	34.96	35.90	38.03	2.32	270.00	1.42	1.24	1.29
280.00	10.50	10.38	10.32	10.32	10.37	10.65	0.33	32.96	34.39	36.00	37.06	2.51	280.00	1.45	1.26	1.30
290.00	10.57	10.46	10.40	10.40	10.46	10.75	0.35	33.17	33.71	35.91	36.17	2.68	290.00	1.49	1.27	1.31
300.00	10.64	10.54	10.49	10.49	10.56	10.87	0.37	33.38	32.96	35.51	35.32	2.84	300.00	1.53	1.28	1.33
310.00	10.72	10.64	10.60	10.60	10.68	10.99	0.40	33.50	32.12	34.67	34.57	2.98	310.00	1.59	1.30	1.34
320.00	10.81	10.74	10.71	10.71	10.80	11.13	0.42	33.35	31.22	33.39	33.89	3.10	320.00	1.65	1.31	1.34
330.00	10.91	10.86	10.84	10.84	10.95	11.28	0.44	32.77	30.28	31.82	33.26	3.21	330.00	1.72	1.32	1.35
340.00	11.02	10.99	10.98	10.99	11.11	11.45	0.47	31.70	29.33	30.11	32.68	3.27	340.00	1.81	1.33	1.36
350.00	11.15	11.13	11.15	11.15	11.29	11.64	0.50	30.24	28.38	28.37	32.11	3.32	350.00	1.90	1.33	1.36
360.00	11.30	11.30	11.33	11.34	11.50	11.85	0.54	28.61	27.43	26.71	31.53	3.32	360.00	2.01	1.33	1.35
370.00	11.48	11.49	11.53	11.54	11.73	12.08	0.60	26.95	26.49	25.14	30.93	3.31	370.00	2.13	1.32	1.35
380.00	11.68	11.71	11.77	11.78	11.99	12.35	0.67	25.36	25.59	23.69	30.29	3.25	380.00	2.28	1.31	1.33

¹Total Loss = Insertion Loss + 9dB Splitter Loss

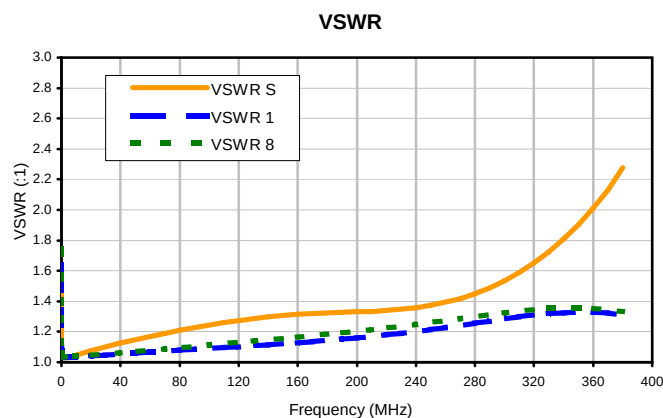
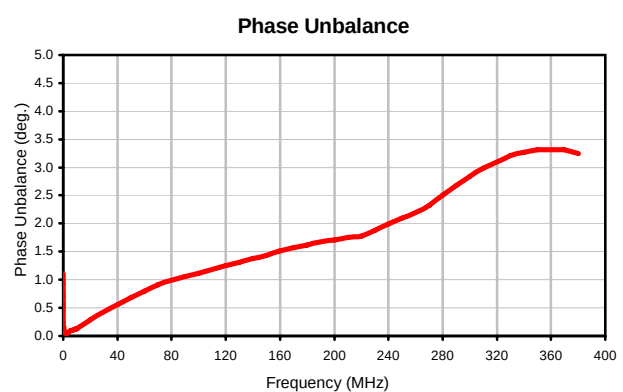
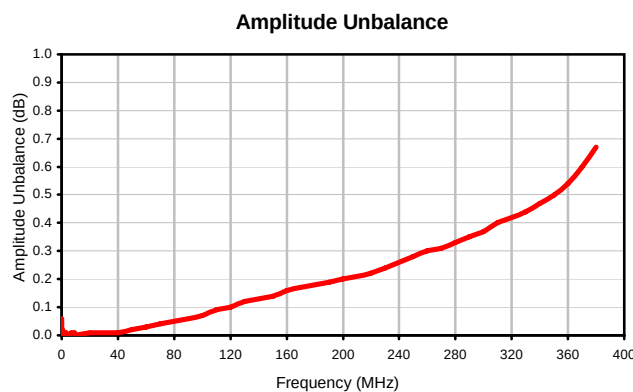
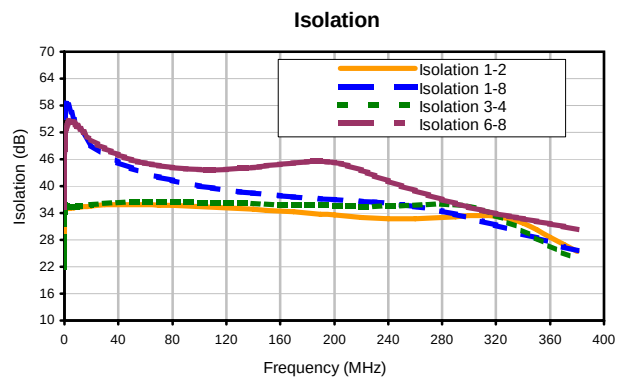
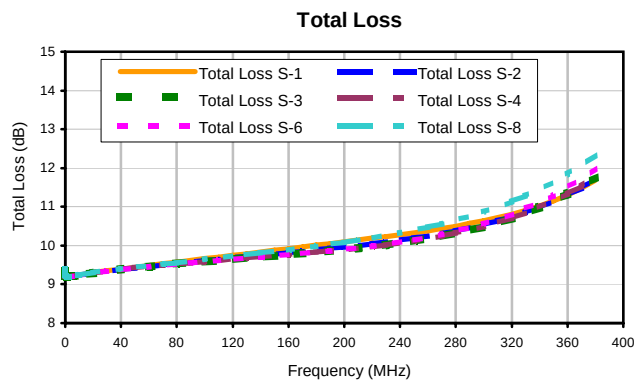


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IF/RF MICROWAVE COMPONENTS

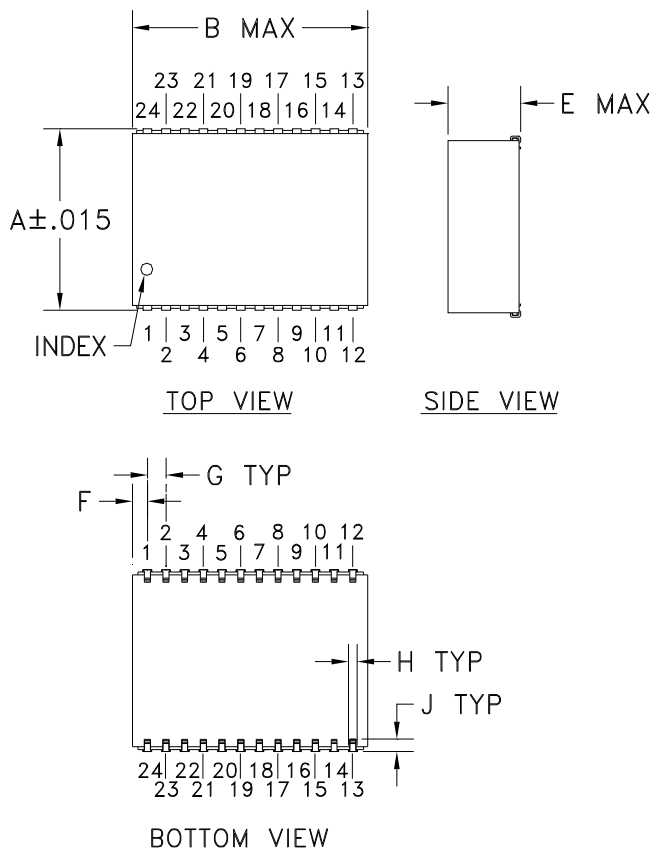
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Typical Performance Curves

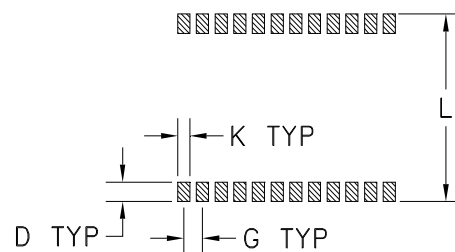


Outline Dimensions

BL372



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

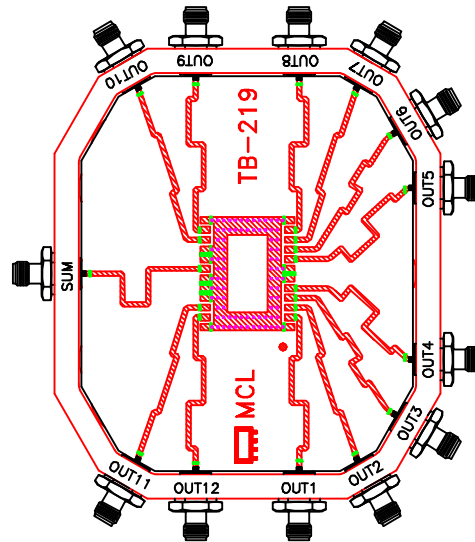
CASE #	A	B	C	D	E	F	G	H	J	K	L	WT. GRAM
BL372	.940 (23.88)	1.426 (36.22)	-- --	.100 (2.54)	.250 (6.35)	.163 (4.14)	.100 (2.54)	.047 (1.19)	.065 (1.65)	.065 (1.65)	.970 (24.64)	6.4

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

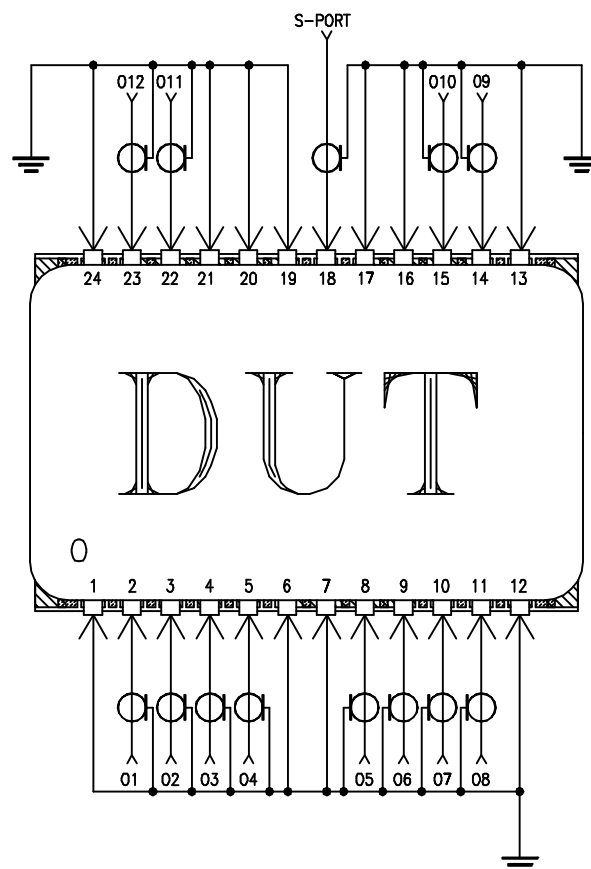
Notes:

- Case material: Copper-Nickel alloy.
- Base material: Printed wiring laminate.
- 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.

Evaluation Board and Circuit



TB-219



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