

Engineering Development Model

Power Splitter/Combiner

JS4PS-ED4443/2

4 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.



Please click "Back", and then click "Contact Us" for Applications support.

CASE STYLE : BJ360

ELECTRICAL SPECIFICATIONS 75Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		1.34		1143 MHz
Isolation	1.34 - 13.4 MHz		35	dB
	13.4 - 571.5 MHz		38	dB
	571.5 - 1143 MHz		24	dB
Insertion Loss Above 6.0 dB	1.34 - 13.4 MHz		0.73	dB
	13.4 - 571.5 MHz		0.69	dB
	571.5 - 1143 MHz		1.10	dB
Phase Unbalance	1.34 - 13.4 MHz		0.170	deg.
	13.4 - 571.5 MHz		0.401	deg.
	571.5 - 1143 MHz		2.024	deg.
Amplitude Unbalance	1.34 - 13.4 MHz		0.043	dB
	13.4 - 571.5 MHz		0.044	dB
	571.5 - 1143 MHz		0.268	dB
VSWR	SUM Port		1.27	(:1)
	OUT Ports		1.25	(:1)

Note: Denotes 75 Ohm model, for coax connector models 75 Ohm BNC connectors are standard.

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

Functional Diagram



PIN CONNECTIONS	
SUM PORT	2
PORT 1	8
PORT 2	7
PORT 3	6
PORT 4	5
GND EXT	1, 3, 4



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4 Way-0° Power Splitter/Combiner

JS4PS-ED4443/2

Typical Performance Data

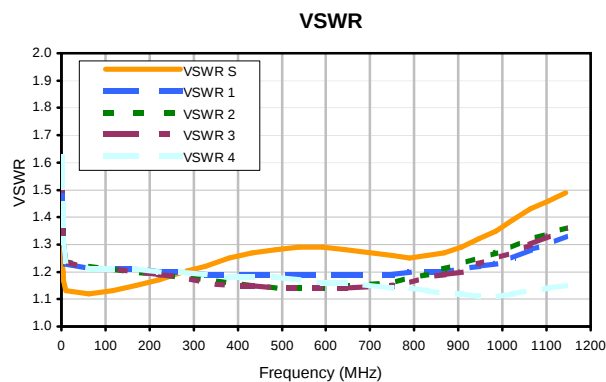
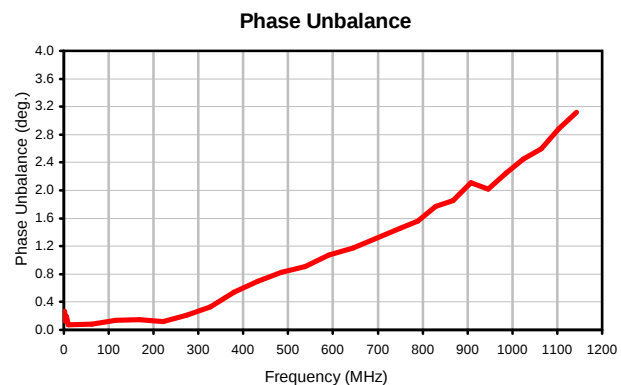
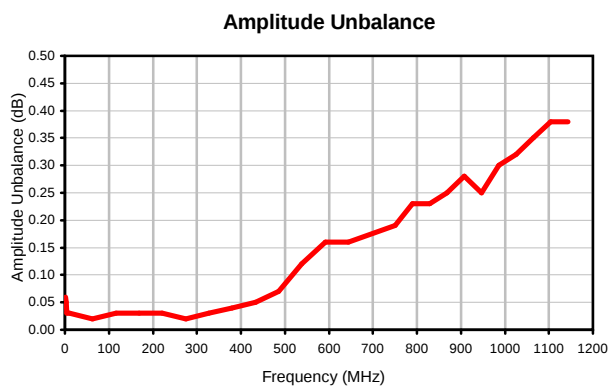
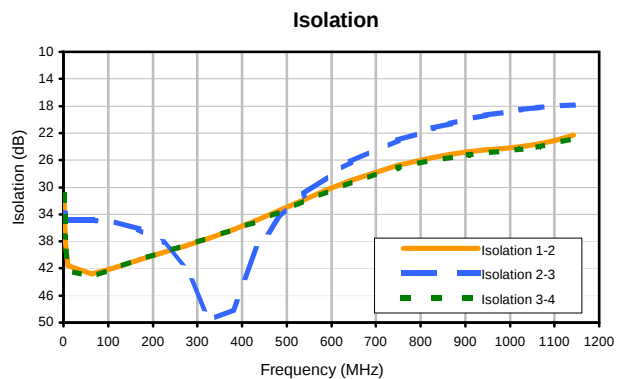
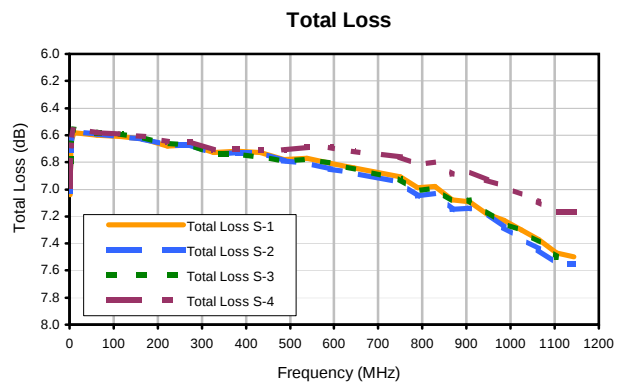
FREQ. (MHz)	TOTAL LOSS ¹ (dB)				AMP. UNBAL. (dB)	ISOLATION (dB)			PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)				
	S-1	S-2	S-3	S-4		1-2	2-3	3-4			S	1	2	3	4
1.3	7.04	7.01	6.98	6.98	0.06	31.05	34.52	31.21	0.15	1.3	1.38	1.54	1.54	1.60	1.62
1.9	6.90	6.87	6.86	6.84	0.06	32.62	33.99	32.91	0.27	1.9	1.31	1.46	1.46	1.50	1.51
2.4	6.82	6.80	6.77	6.77	0.05	33.97	33.90	34.29	0.19	2.4	1.26	1.40	1.41	1.44	1.45
2.9	6.77	6.75	6.73	6.72	0.05	35.09	33.99	35.48	0.17	2.9	1.23	1.37	1.37	1.39	1.40
3.4	6.72	6.69	6.67	6.68	0.05	36.05	34.13	36.50	0.13	3.4	1.21	1.34	1.34	1.36	1.37
4.0	6.68	6.68	6.66	6.66	0.03	36.86	34.26	37.39	0.19	4.0	1.20	1.32	1.32	1.34	1.34
4.5	6.66	6.65	6.64	6.63	0.03	37.59	34.39	38.08	0.17	4.5	1.18	1.30	1.30	1.32	1.32
5.0	6.64	6.63	6.61	6.61	0.03	38.18	34.46	38.69	0.19	5.0	1.17	1.29	1.29	1.30	1.31
10.0	6.58	6.57	6.56	6.55	0.03	41.54	34.83	42.24	0.07	10.0	1.13	1.23	1.24	1.24	1.24
62.9	6.60	6.59	6.58	6.58	0.02	42.85	34.89	43.32	0.08	62.9	1.12	1.21	1.22	1.21	1.21
115.7	6.61	6.61	6.59	6.59	0.03	41.90	35.12	41.96	0.14	115.7	1.13	1.21	1.21	1.21	1.21
168.6	6.63	6.63	6.62	6.61	0.03	40.71	36.16	40.65	0.15	168.6	1.15	1.21	1.20	1.20	1.21
221.4	6.68	6.67	6.66	6.65	0.03	39.72	38.17	39.70	0.12	221.4	1.17	1.20	1.19	1.19	1.20
274.3	6.67	6.67	6.67	6.65	0.02	38.63	41.65	38.52	0.21	274.3	1.20	1.20	1.18	1.18	1.20
327.1	6.73	6.74	6.74	6.71	0.03	37.52	49.70	37.47	0.33	327.1	1.22	1.19	1.17	1.16	1.19
380.0	6.72	6.73	6.74	6.70	0.04	36.28	48.11	36.31	0.54	380.0	1.25	1.19	1.16	1.15	1.18
432.9	6.73	6.73	6.76	6.71	0.05	34.90	39.17	35.06	0.70	432.9	1.27	1.19	1.15	1.15	1.18
485.7	6.78	6.79	6.79	6.71	0.07	33.34	34.39	33.57	0.83	485.7	1.28	1.19	1.14	1.14	1.18
538.6	6.77	6.81	6.78	6.69	0.12	31.82	30.98	32.05	0.91	538.6	1.29	1.19	1.14	1.14	1.17
591.4	6.81	6.85	6.81	6.69	0.16	30.37	28.39	30.61	1.07	591.4	1.29	1.19	1.14	1.14	1.16
644.3	6.84	6.88	6.85	6.72	0.16	29.01	26.27	29.33	1.17	644.3	1.28	1.19	1.15	1.14	1.16
750.0	6.91	6.95	6.92	6.76	0.19	26.78	23.06	27.13	1.46	750.0	1.26	1.19	1.16	1.15	1.14
789.3	6.99	7.05	7.01	6.82	0.23	26.15	22.15	26.51	1.56	789.3	1.25	1.20	1.18	1.16	1.14
828.6	6.98	7.03	6.99	6.80	0.23	25.56	21.27	25.94	1.77	828.6	1.26	1.20	1.19	1.18	1.13
867.9	7.08	7.15	7.09	6.89	0.25	25.14	20.58	25.56	1.85	867.9	1.27	1.20	1.21	1.19	1.12
907.1	7.09	7.14	7.08	6.87	0.28	24.75	19.92	25.18	2.11	907.1	1.29	1.21	1.23	1.20	1.12
946.4	7.18	7.17	7.16	6.93	0.25	24.51	19.38	24.93	2.02	946.4	1.32	1.22	1.25	1.23	1.11
985.7	7.23	7.28	7.25	6.98	0.30	24.25	18.93	24.69	2.25	985.7	1.35	1.23	1.27	1.25	1.11
1025.0	7.30	7.36	7.31	7.04	0.32	23.96	18.53	24.39	2.45	1025.0	1.39	1.25	1.29	1.27	1.12
1064.3	7.37	7.44	7.39	7.09	0.35	23.59	18.23	24.05	2.60	1064.3	1.43	1.28	1.32	1.30	1.13
1103.6	7.47	7.55	7.50	7.17	0.38	23.08	18.01	23.51	2.88	1103.6	1.46	1.30	1.34	1.33	1.14
1142.9	7.50	7.55	7.51	7.17	0.38	22.30	17.81	22.79	3.12	1142.9	1.49	1.33	1.36	1.36	1.15

¹ Total Loss = Insertion Loss + 6dB Splitter Loss

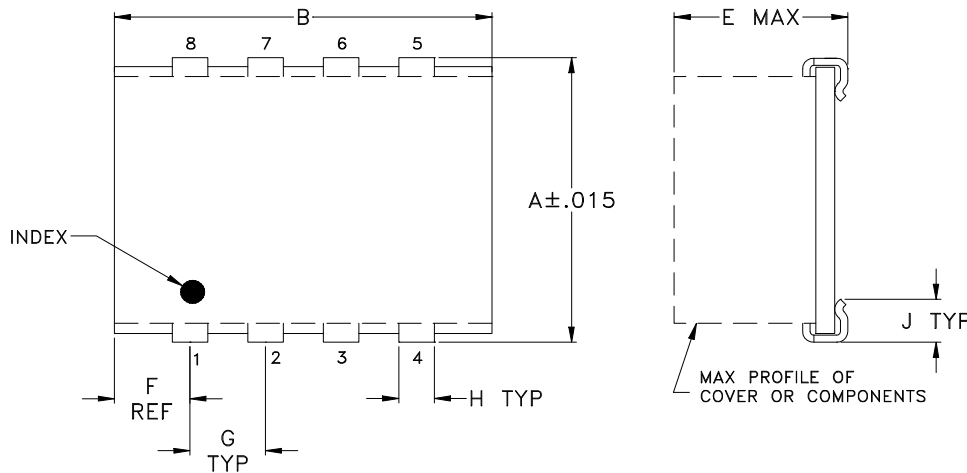
4 Way-0° Power Splitter/Combiner

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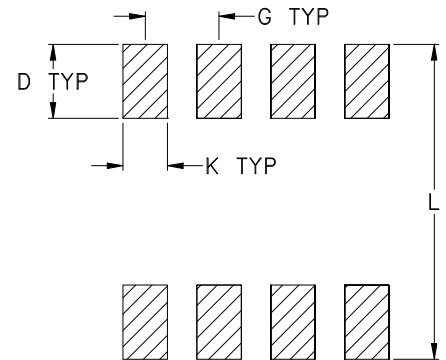
Typical Performance Curves



Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE#	A	B	C	D	E	F	G	H	J	K	L	WT. GRAMS
BJ360	.450 (11.43)	.800 (20.32)	-- --	.100 (2.54)	.250 (6.35)	.100 (2.54)	.200 (5.08)	.047 (1.19)	.065 (1.65)	.065 (1.65)	.480 (12.19)	1.7

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

Notes:

- Case material: Nickel-Silver 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.



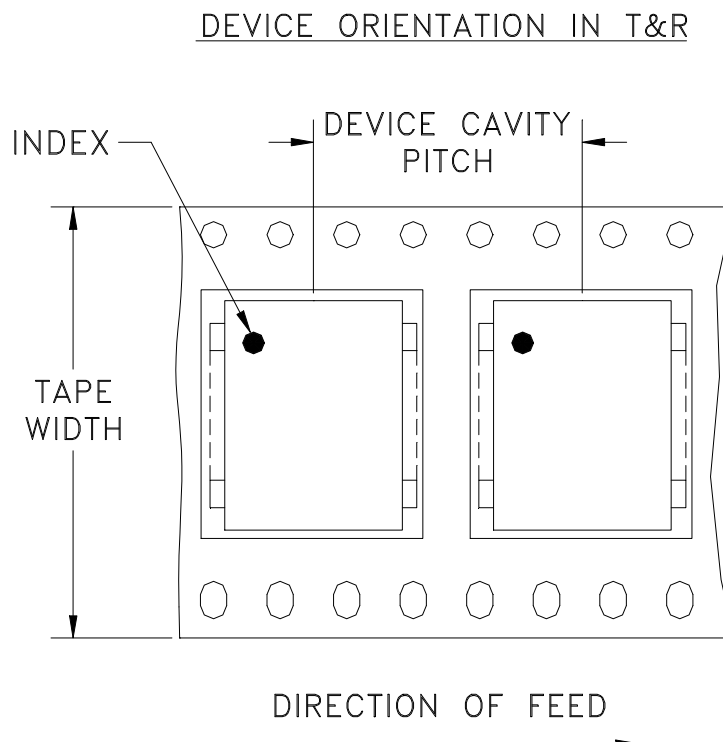
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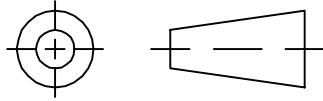
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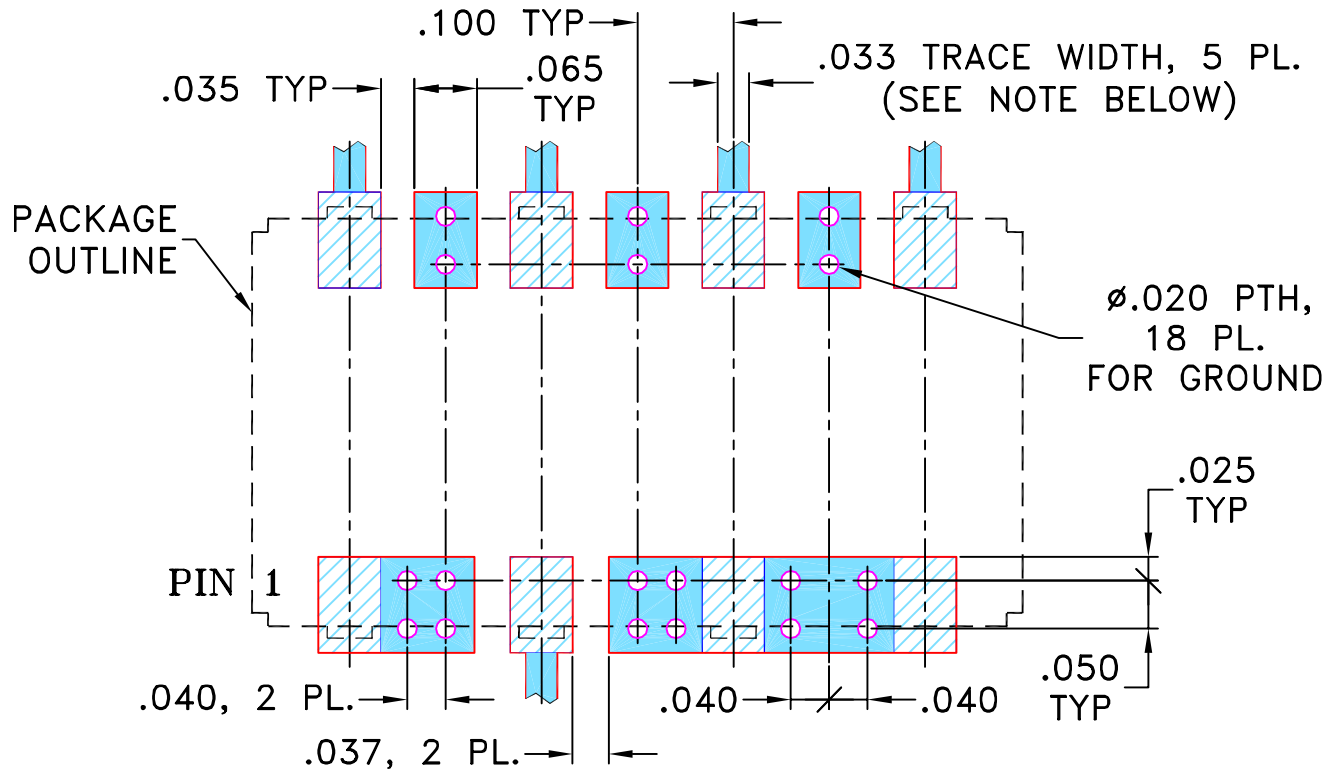
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M90087	NEW RELEASE	12/18/03	AV	HY
A	M102713	ADDED "...WITH SMOBC"	01/12/06	GF	IL

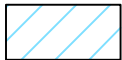
SUGGESTED MOUNTING CONFIGURATION FOR BJ360 CASE STYLE, "kb" PIN CONNECTION



- NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $0.030'' \pm 0.002''$; 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

AV

12/11/03

TOLERANCES ON:
2 PL DECIMALS $\pm$
3 PL DECIMALS $\pm$.005
ANGLES $\pm$
FRACTIONS $\pm$

CHECKED

IL

12/18/03

APPROVED

HY

12/18/03



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PL, kb, 75, BJ360, JS4PS, TB-218

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SIZE

A

CODE IDENT

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DRAWING NO:

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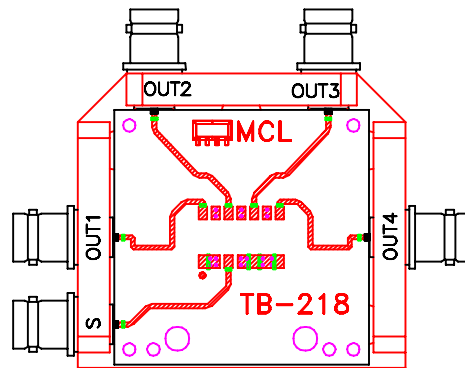
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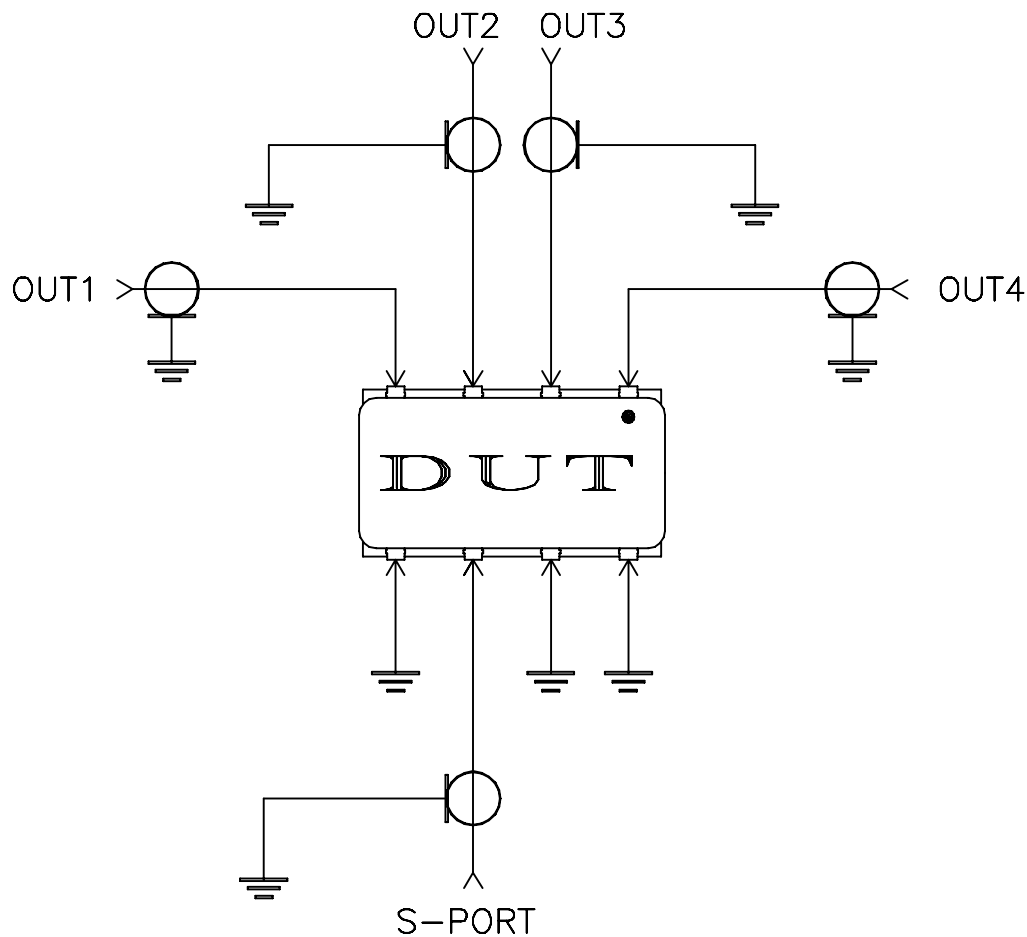
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1 OF 1

Evaluation Board and Circuit



TB-218



Schematic Diagram

Notes:

1. BNC Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.030 inch.

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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