

Power Splitter/Combiner

2 Way-0°

SP-ED12593/2

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 : CA531

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		1200		2000 MHz
Isolation	1200 - 2000 MHz		20	dB
Insertion Loss Above 3.0 dB	1200 - 2000 MHz		0.70	dB
Phase Unbalance	1200 - 2000 MHz		0.182	deg.
Amplitude Unbalance	1200 - 2000 MHz		0.002	dB
VSWR	SUM Port		1.60	(:1)
	OUT Ports		1.40	(:1)

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

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	1	2
850.0	3.50	3.50	0.01	7.51	0.05	850.0	1.58	1.49	1.49
875.0	3.50	3.49	0.01	7.79	0.06	875.0	1.57	1.47	1.47
900.0	3.49	3.48	0.01	8.08	0.06	900.0	1.55	1.45	1.45
925.0	3.48	3.48	0.01	8.40	0.06	925.0	1.53	1.42	1.42
950.0	3.47	3.47	0.01	8.73	0.06	950.0	1.51	1.40	1.40
975.0	3.47	3.46	0.01	9.07	0.06	975.0	1.49	1.38	1.38
1000.0	3.46	3.45	0.01	9.44	0.06	1000.0	1.47	1.35	1.35
1025.0	3.45	3.45	0.01	9.84	0.08	1025.0	1.46	1.33	1.33
1050.0	3.44	3.44	0.01	10.25	0.09	1050.0	1.44	1.31	1.31
1075.0	3.43	3.43	0.01	10.70	0.09	1075.0	1.42	1.28	1.28
1100.0	3.43	3.42	0.01	11.17	0.09	1100.0	1.40	1.26	1.26
1125.0	3.42	3.42	0.01	11.68	0.09	1125.0	1.38	1.24	1.24
1150.0	3.41	3.41	0.01	12.23	0.09	1150.0	1.36	1.21	1.21
1175.0	3.40	3.40	0.01	12.81	0.09	1175.0	1.34	1.19	1.19
1200.0	3.40	3.40	0.01	13.44	0.11	1200.0	1.32	1.17	1.17
1225.0	3.39	3.39	0.01	14.11	0.12	1225.0	1.30	1.14	1.14
1250.0	3.39	3.39	0.01	14.85	0.12	1250.0	1.28	1.12	1.12
1300.0	3.38	3.38	0.01	16.55	0.12	1300.0	1.25	1.08	1.08
1325.0	3.38	3.38	0.01	17.54	0.13	1325.0	1.24	1.06	1.06
1350.0	3.38	3.38	0.01	18.67	0.14	1350.0	1.22	1.04	1.04
1400.0	3.38	3.38	0.01	21.45	0.15	1400.0	1.20	1.03	1.03
1410.0	3.38	3.38	0.01	22.12	0.15	1410.0	1.20	1.04	1.04
1420.0	3.38	3.38	0.01	22.85	0.16	1420.0	1.19	1.04	1.04
1430.0	3.38	3.38	0.01	23.65	0.15	1430.0	1.19	1.05	1.05
1440.0	3.38	3.38	0.01	24.53	0.17	1440.0	1.19	1.06	1.06
1450.0	3.38	3.38	0.01	25.51	0.16	1450.0	1.19	1.07	1.07
1460.0	3.38	3.38	0.01	26.62	0.17	1460.0	1.19	1.07	1.07
1470.0	3.39	3.39	0.01	27.88	0.16	1470.0	1.19	1.08	1.08
1480.0	3.39	3.39	0.01	29.36	0.17	1480.0	1.19	1.09	1.09
1490.0	3.39	3.39	0.01	31.13	0.17	1490.0	1.19	1.10	1.10
1500.0	3.39	3.39	0.01	33.33	0.16	1500.0	1.20	1.11	1.11
1510.0	3.40	3.39	0.01	36.24	0.18	1510.0	1.20	1.12	1.12
1520.0	3.40	3.40	0.01	40.45	0.18	1520.0	1.20	1.13	1.13
1540.0	3.41	3.40	0.01	45.60	0.20	1540.0	1.21	1.14	1.14
1550.0	3.41	3.41	0.01	39.54	0.19	1550.0	1.22	1.15	1.15
1560.0	3.41	3.41	0.01	35.69	0.20	1560.0	1.22	1.16	1.16
1570.0	3.42	3.42	0.01	33.00	0.19	1570.0	1.23	1.17	1.17
1580.0	3.42	3.42	0.01	30.93	0.20	1580.0	1.24	1.18	1.18
1590.0	3.43	3.43	0.01	29.24	0.20	1590.0	1.24	1.19	1.19
1600.0	3.43	3.43	0.01	27.83	0.20	1600.0	1.25	1.20	1.20
1610.0	3.44	3.44	0.01	26.62	0.21	1610.0	1.26	1.21	1.21
1640.0	3.46	3.45	0.01	23.73	0.22	1640.0	1.29	1.24	1.24
1650.0	3.47	3.46	0.01	22.96	0.21	1650.0	1.31	1.25	1.25
1660.0	3.47	3.47	0.01	22.25	0.21	1660.0	1.32	1.26	1.26
1670.0	3.48	3.48	0.01	21.59	0.22	1670.0	1.33	1.27	1.26
1690.0	3.50	3.49	0.01	20.43	0.21	1690.0	1.36	1.29	1.28
1700.0	3.51	3.50	0.01	19.89	0.22	1700.0	1.37	1.30	1.29
1750.0	3.56	3.55	0.01	17.65	0.23	1750.0	1.44	1.34	1.34
1800.0	3.62	3.62	0.01	15.88	0.23	1800.0	1.53	1.39	1.39
1850.0	3.7	3.69	0.01	14.42	0.23	1850.0	1.63	1.44	1.44
1900.0	3.79	3.78	0.01	13.17	0.23	1900.0	1.74	1.48	1.48
1950.0	3.89	3.88	0.02	12.09	0.24	1950.0	1.86	1.53	1.52
2000.0	4.01	4.00	0.02	11.13	0.19	2000.0	2.00	1.57	1.57

¹Total Loss = Insertion Loss + 3dB Splitter Loss

REV. X2

SP-ED12593/2

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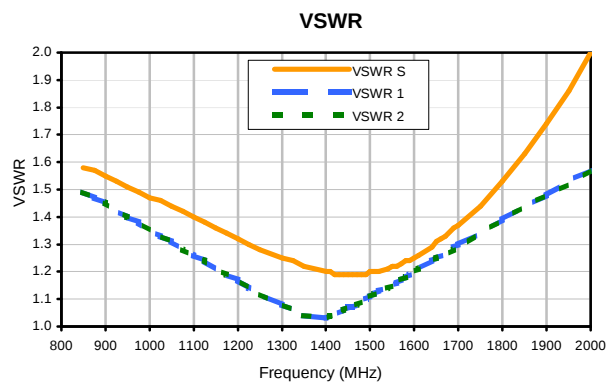
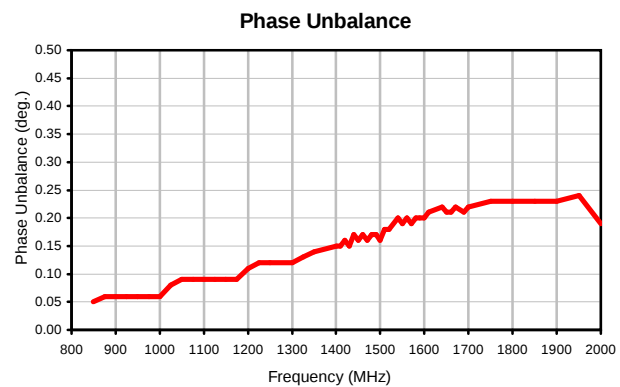
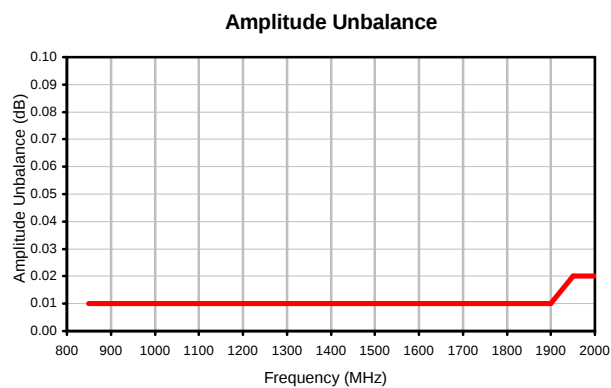
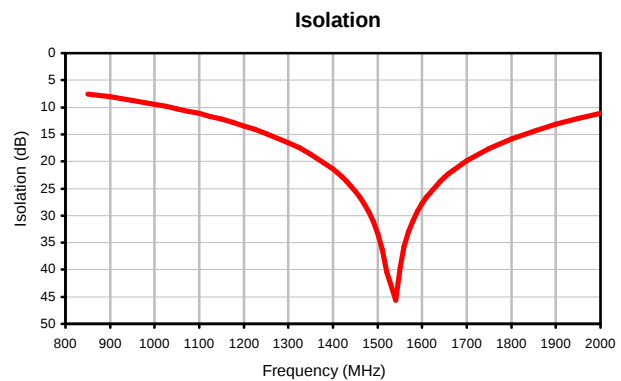
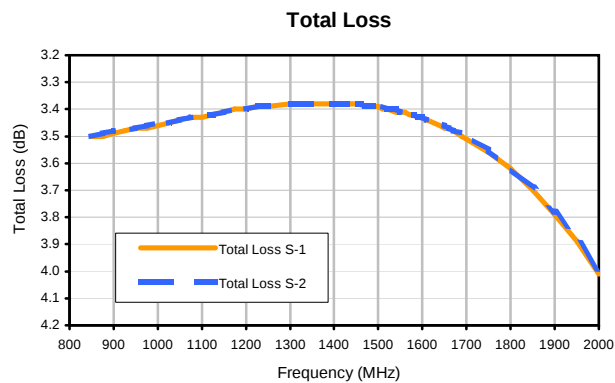
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Typical Performance Curves



Patent Pending

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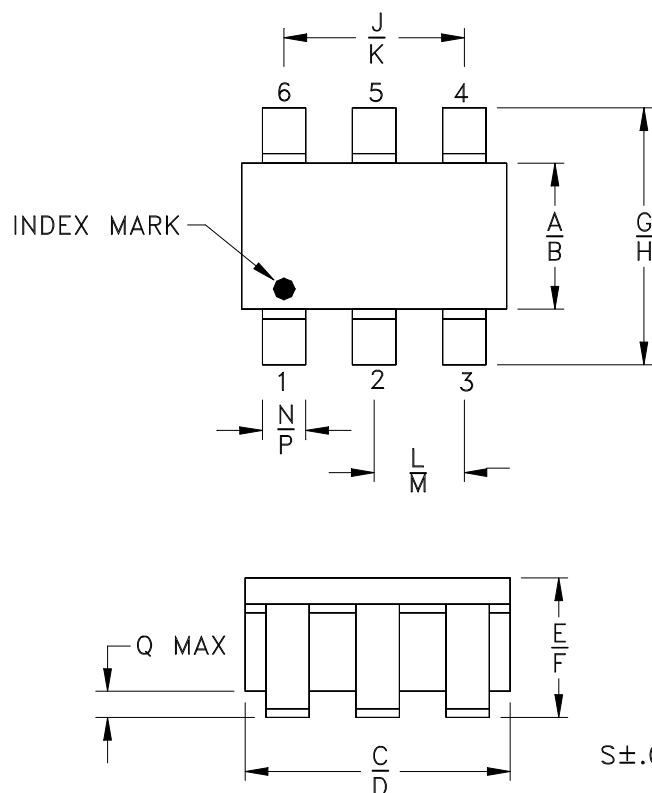
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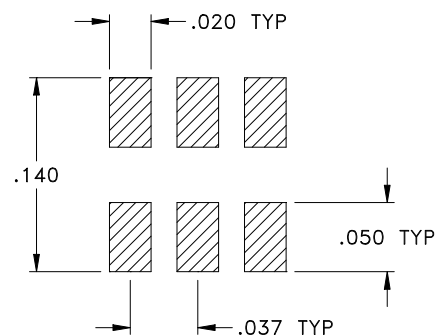
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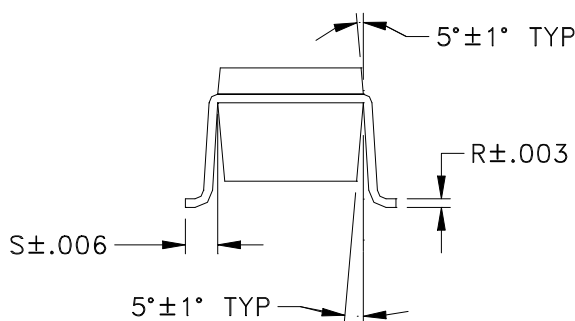
Outline Dimensions



PCB Land Pattern



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



CASE #	A	B	C	D	E	F	G	H	J	K
CA531	.052 (1.32)	.067 (1.70)	.106 (2.69)	.122 (3.10)	.035 (0.89)	.064 (1.63)	.087 (2.21)	.118 (3.00)	.067 (1.70)	.083 (2.11)

CASE #	L	M	N	P	Q	R	S	WT. GRAM
CA531	.033 (0.84)	.042 (1.07)	.012 (0.30)	.020 (0.51)	.012 (0.30)	.006 (0.15)	.018 (0.46)	.020

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

Notes:

- Case material: Plastic.
- Termination finish:
For RoHS Case Styles: Tin-Silver alloy plate over Nickel barrier.
(Unless stated otherwise on Data sheet).



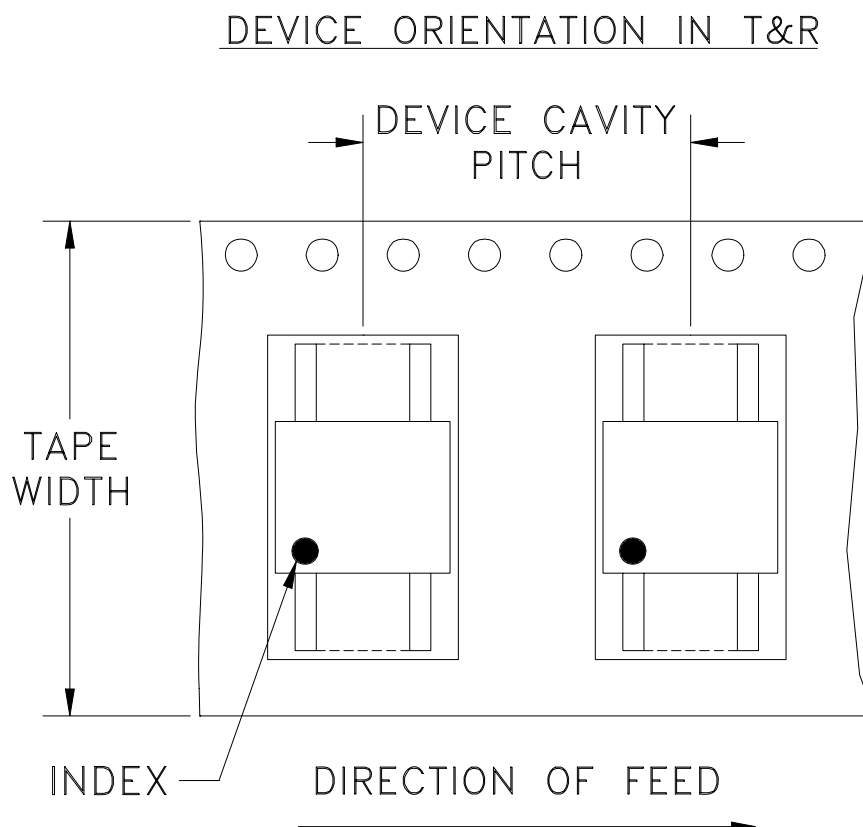
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Tape & Reel Packaging TR-F31



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
8	4	7	Small quantity standards (see note)	20
				50
				100
				200
				500
			Standard	1000

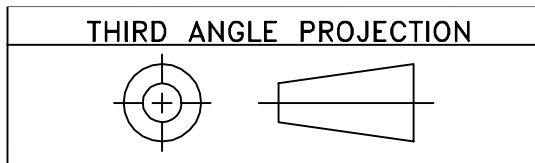
Note: Please Consult individual model data sheet to determine device per reel availability

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

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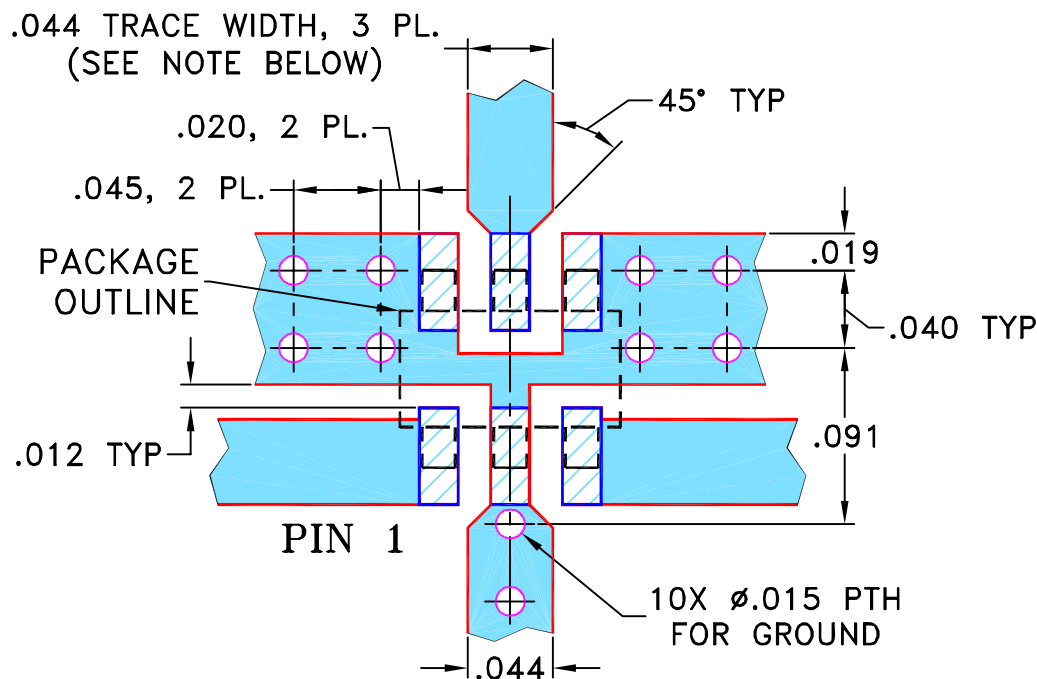


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REV OR	ECN No.	DESCRIPTION	DATE	DR	AUTH
	M102559	NEW RELEASE	02/23/06	MMG	HY

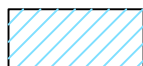
SUGGESTED MOUNTING CONFIGURATION FOR CA531 CASE STYLE, "jk" PIN CONNECTION



- NOTES:** 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" $\pm$.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 TOLERANCES ON: 2 PL DECIMALS $\pm$ 3 PL DECIMALS $\pm$.005 ANGLES $\pm$ FRACTIONS $\pm$	DRAWN	MMG	02/22/06
	CHECKED	AV	02/23/06
	APPROVED	HY	02/23/06



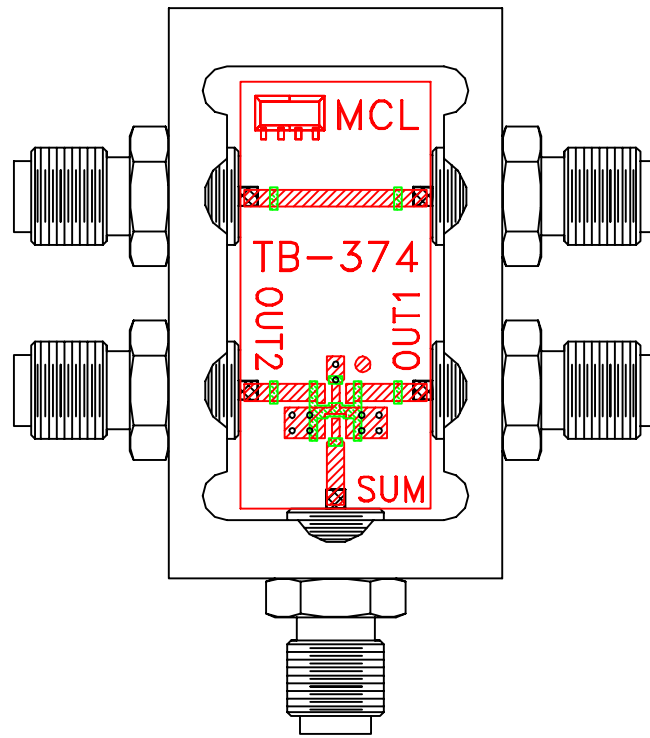
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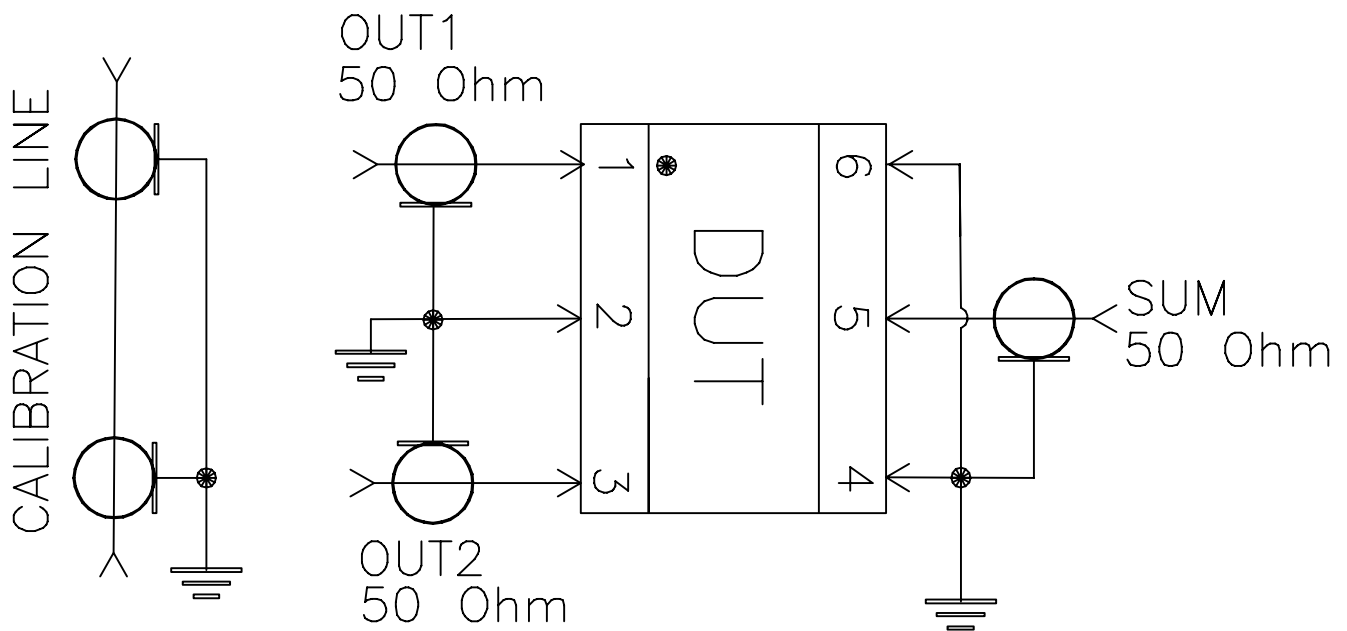
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SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-232	OR
FILE:	98PL232	SCALE:	10:1
SHEET:		1 OF 1	

Evaluation Board and Circuit



TB-374



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: Rogers R04350B or its equivalent,  Mini-Circuits®
Dielectric Constant=3.5, Thickness=.020"



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	-65° to 150° C Ambient Environment	Individual Model Data Sheet
Autoclave	15 psig, 100% RH, 121°C, 96 hours	JESD22-A102-C, Condition C
Temperature Cycling	-65° to 150°C, 100 cycles	JESD22-A104
Temperature Humidity	85°C/ 85% RH, 168 hours	JESD22-113
Solder Reflow Heat	Sn-Pb Eutetic Process: 240°C peak Pb-Free Process: 260°C peak	J-STD-020, Table 4-1, 4-2 and 5-2; Figure 5-1
Moisture Sensitivity: Level 1	Bake at 125°C for 24 hours Soak at 85°C/85% RH for 168 hours, Reflow 3 cycles at 240°C peak (Non-RoHS) or 260°C (RoHS)	J-STD-020
Solderability	10X magnification, 95% coverage	JESD22-B102, Method 1: Dip and Look Test
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
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