Engineering Development Model

Power Splitter/Combiner SXPS-ED13856/1

2 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 : HF1458

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		0.1		300	MHz
Isolation	**0.1-1 MHz**	-	25	-	dB
	1-150 MHz	-	30	-	
	150-300 MHz	-	25	-	
Insertion Loss Above 3.0 dB	**0.1-1 MHz**	-	0.10	-	dB
	1-150 MHz	-	0.30	-	
	150-300 MHz	-	0.60	-	
Phase Unbalance	**0.1-1 MHz**	-	0.10	-	deg.
	1-150 MHz	-	0.10	-	
	150-300 MHz	-	0.20	-	
Amplitude Unbalance	**0.1-1 MHz**	-	0.10	-	dB
	1-150 MHz	-	0.10	-	
	150-300 MHz	-	0.10	-	
VSWR	**SUM PORT**	-	1.15	-	(:1)
	OUTPUT PORTS	-	1.20	-	

MAXIMUM RATINGS	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W
Internal Dissipation	0.125W

electrical schematic

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

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Typical Performance Data

FREQUENCY (MHz)	TOTAL LOSS[1] (dB)		AMPLITUDE UNBALANCE (dB)	ISOLATION (dB)	PHASE UNBALANCE (deg.)	FREQUENCY (MHz)	VSWR (:1)		
	S-1	S-2		1-2			S	1	2
0.03	3.18	3.18	0.00	18.02	0.04	0.03	1.30	1.71	1.71
0.04	3.13	3.13	0.00	19.94	0.03	0.04	1.23	1.52	1.52
0.05	3.11	3.11	0.00	21.54	0.02	0.05	1.19	1.41	1.41
0.06	3.09	3.09	0.00	22.92	0.02	0.06	1.16	1.34	1.34
0.07	3.08	3.09	0.00	24.11	0.01	0.07	1.14	1.29	1.29
0.08	3.08	3.08	0.00	25.16	0.03	0.08	1.13	1.25	1.25
0.09	3.08	3.08	0.00	26.13	0.01	0.09	1.12	1.22	1.22
0.10	3.07	3.08	0.00	27.01	0.01	0.10	1.11	1.20	1.20
0.11	3.08	3.08	0.00	27.81	0.03	0.11	1.10	1.18	1.18
0.12	3.08	3.08	0.00	28.51	0.00	0.12	1.10	1.16	1.16
0.13	3.07	3.08	0.00	29.24	0.02	0.13	1.09	1.15	1.15
0.14	3.07	3.07	0.00	29.83	0.01	0.14	1.09	1.14	1.14
0.15	3.07	3.07	0.00	30.45	0.01	0.15	1.09	1.13	1.13
0.20	3.07	3.08	0.00	32.78	0.00	0.20	1.08	1.10	1.10
0.50	3.08	3.08	0.00	38.48	0.01	0.50	1.06	1.07	1.07
1.00	3.08	3.08	0.00	40.32	0.02	1.00	1.06	1.06	1.06
5.00	3.08	3.08	0.00	40.03	0.00	5.00	1.07	1.04	1.04
10.00	3.09	3.09	0.00	40.01	0.01	10.00	1.08	1.04	1.04
20.00	3.12	3.12	0.00	39.44	0.02	20.00	1.08	1.04	1.03
40.00	3.16	3.16	0.00	37.45	0.03	40.00	1.09	1.03	1.03
60.00	3.19	3.20	0.00	35.67	0.03	60.00	1.09	1.03	1.03
80.00	3.22	3.23	0.00	34.17	0.05	80.00	1.09	1.04	1.04
100.00	3.25	3.26	0.00	33.00	0.06	100.00	1.09	1.05	1.05
110.00	3.27	3.27	0.00	32.58	0.06	110.00	1.09	1.06	1.05
120.00	3.28	3.28	0.00	32.23	0.06	120.00	1.09	1.06	1.06
130.00	3.29	3.30	0.01	31.96	0.06	130.00	1.09	1.07	1.07
140.00	3.31	3.31	0.01	31.68	0.06	140.00	1.09	1.08	1.08
150.00	3.32	3.33	0.01	31.42	0.06	150.00	1.09	1.09	1.08
160.00	3.34	3.34	0.01	31.17	0.06	160.00	1.09	1.10	1.09
170.00	3.35	3.36	0.01	30.94	0.05	170.00	1.09	1.10	1.10
180.00	3.37	3.38	0.01	30.78	0.05	180.00	1.08	1.11	1.11
200.00	3.40	3.42	0.01	30.59	0.03	200.00	1.09	1.13	1.13
220.00	3.44	3.46	0.02	30.47	0.01	220.00	1.09	1.15	1.15
240.00	3.49	3.51	0.02	30.21	0.02	240.00	1.09	1.18	1.17
260.00	3.54	3.56	0.03	29.90	0.05	260.00	1.10	1.20	1.19
280.00	3.60	3.63	0.03	29.59	0.10	280.00	1.11	1.23	1.22
300.00	3.67	3.71	0.04	29.07	0.15	300.00	1.13	1.26	1.25
350.00	3.93	4.00	0.07	26.45	0.34	350.00	1.19	1.35	1.33
400.00	4.44	4.56	0.13	21.95	0.58	400.00	1.28	1.49	1.47

[1]Total Loss = Insertion Loss + 3dB Splitter Loss

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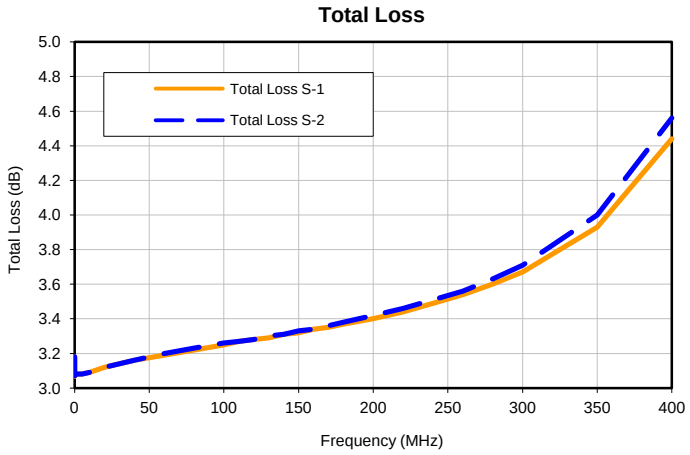
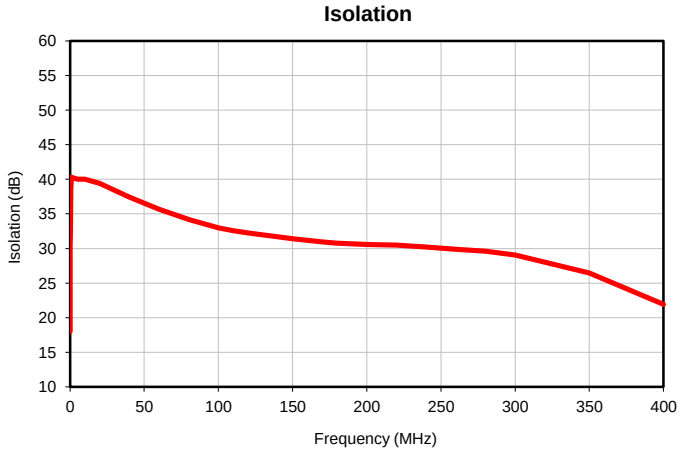
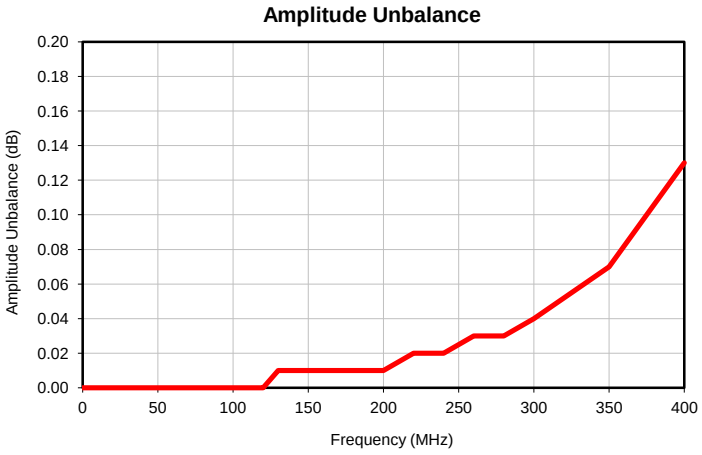
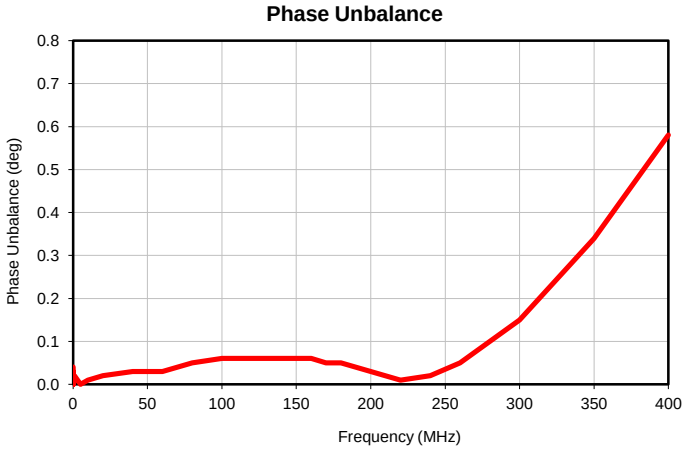
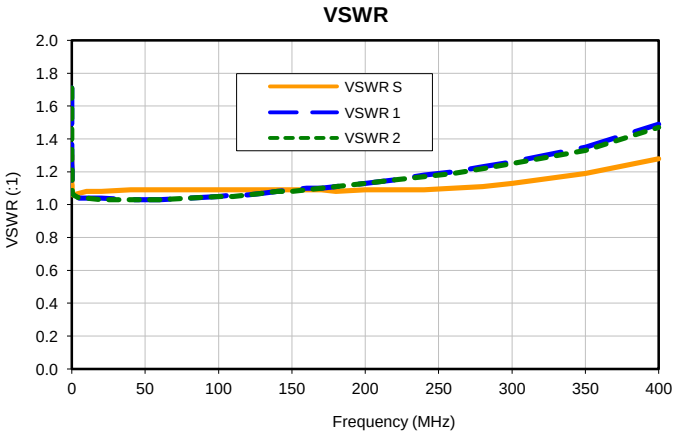
Typical Performance Curves







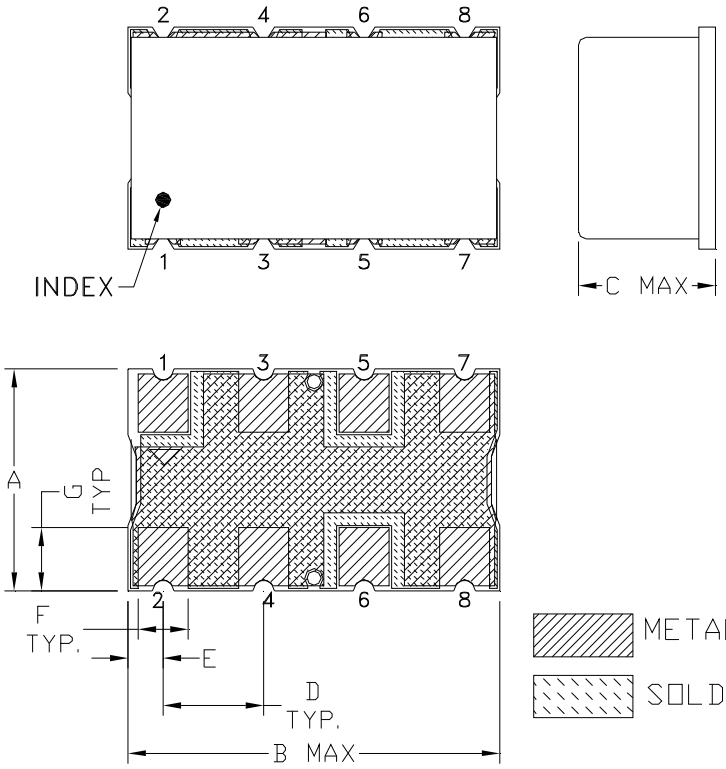




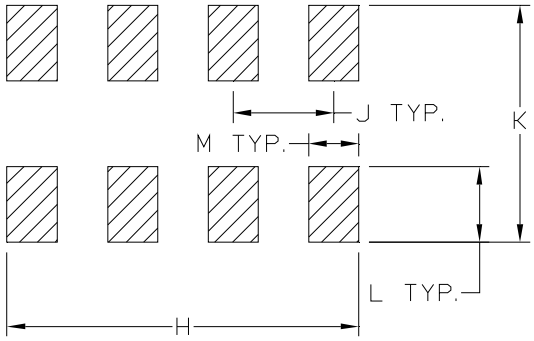
Case Style HF

HF1458

Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	WT. GRAMS
HF1458	.44 (11.18)	.750 (19.05)	.295 (3.56)	.200 (5.08)	.07 (1.78)	.100 (2.54)	.125 (3.18)	.697 (17.70)	.200 (5.08)	.470 (11.94)	.150 (3.81)	.100 (2.54)	3.0

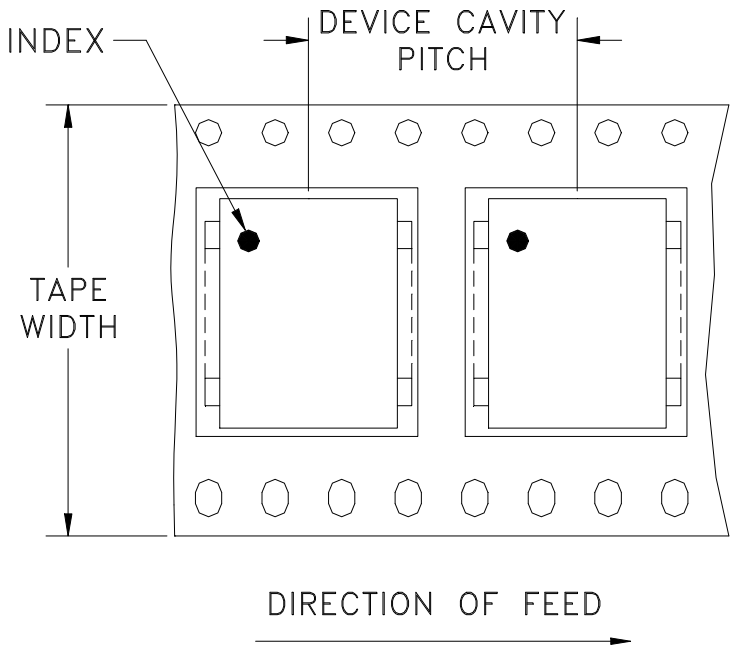
Dimensions are in inches (mm). Tolerances: 2 Pl. ±.015"; 3 Pl. ±.01"

Notes:

1. Case material: Nickel-Silver alloy.
2. Base: Printed wiring laminate.
3. Termination finish:
   For RoHS Case Styles: 2-5 µ inch (.05-.13 microns) Gold over 120-240 µ inch (3.05-6.10 microns) Nickel plate.
   For RoHS-5 Case Styles: Tin-Lead plate.

Tape & Reel Packaging TR-F5

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
32	16	13	500

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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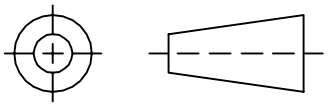
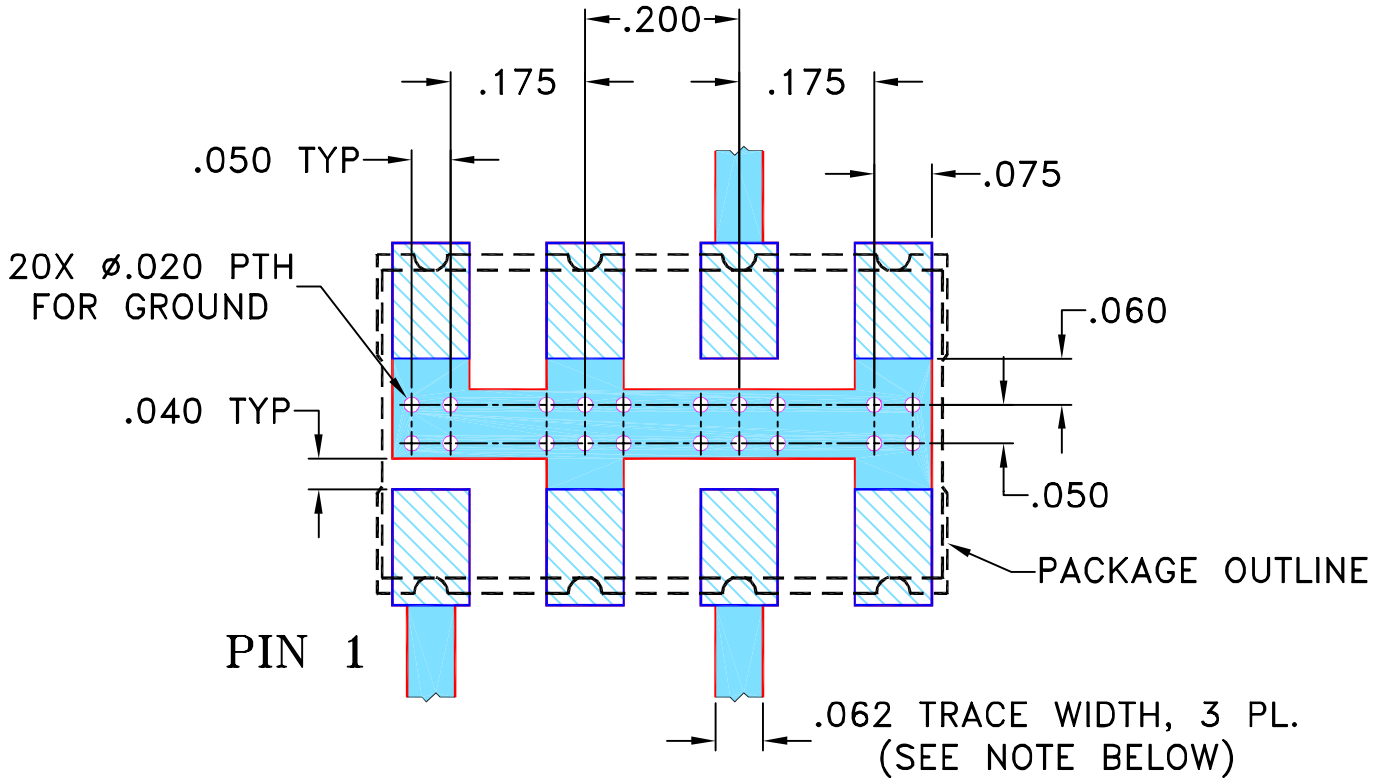
THIRD ANGLE PROJECTION



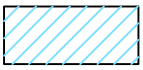
REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M124389	NEW RELEASE	09/22/09	PW	WP

SUGGESTED MOUNTING CONFIGURATION FOR HF1458 CASE STYLE, "08SP07" PIN CODE



NOTES:
1. TRACE WIDTH IS SHOWN FOR 0AK-602 WITH DIELECTRIC THICKNESS .022" ± .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	PW	09/08/09
TOLERANCES ON:	CHECKED	IL	09/22/09
2 PL DECIMALS ±	APPROVED	WP	09/22/09
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

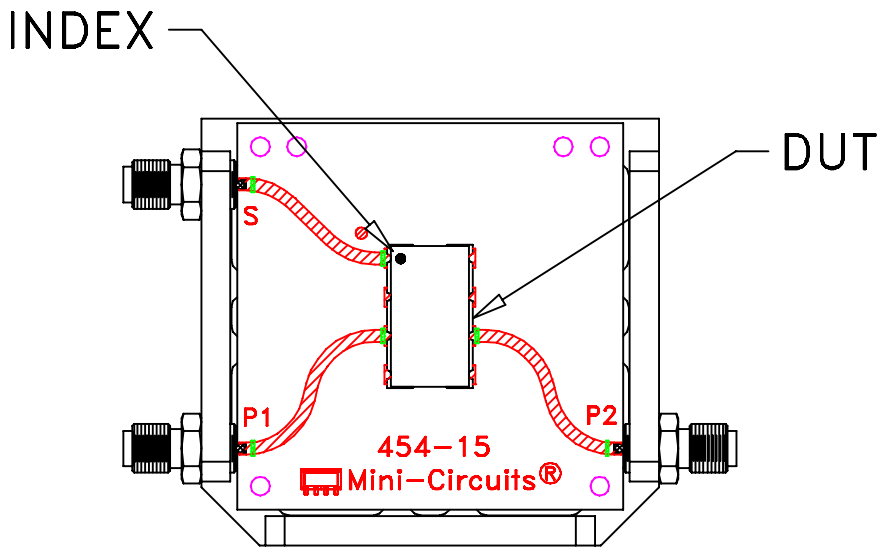
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, 08SP07, HF1458, TB-546+

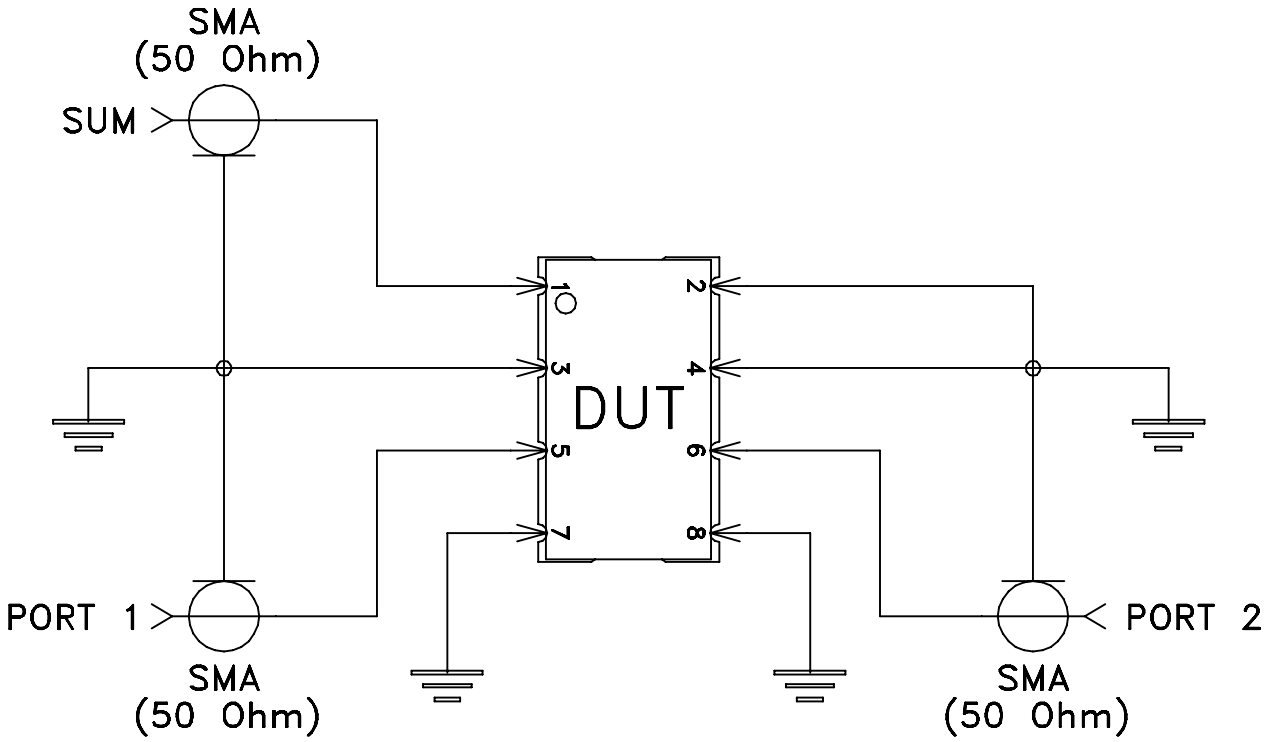
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-314	OR

FILE:	SCALE:	SHEET:
98PL314	4:1	1 OF 1

Evaluation Board and Circuit



TB-546+



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: OAK-602 or equivalent.
   Dielectric Constant=2.5, Thickness=.022 inch.

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Environmental Specifications ENV02T1

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