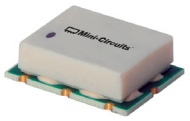
Surface Mount

Power Splitter/Combiner

SCRP-2-682W+

2 Way-0° 50Ω High Isolation Resistive Splitter DC to 6800 MHz



Generic photo used for illustration purposes only

CASE STYLE: TTT1732

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	0.5W max.
Internal Dissipation	0.5W max.

Permanent damage may occur if any of these limits are exceeded.

Coaxial Connections

SUM PORT	3
PORT 1	1
PORT 2	2
GROUND	ALL OTHERS

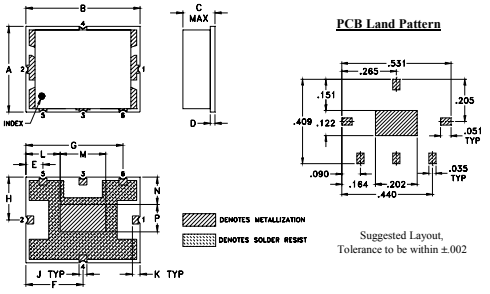
Features

- very wideband, DC to 6800 MHz
- very good phase unbalance, 1 deg. typ.
- excellent amplitude unbalance, 0.1 dB typ.
- rugged shielded case

Applications

- laboratory
- test set-ups
- PCS
- UNII
- WiMAX
- WiFi
- blue tooth

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H
.38	.50	.15	.020	.075	.250	.425	.187
9.65	12.70	3.81	0.51	1.91	6.35	10.80	4.75

J	K	L	M	N	P	wt.
.035	.034	.150	.200	.120	.120	grams
0.89	0.86	3.81	5.08	3.05	3.05	0.8

Electrical Specifications at 25°C

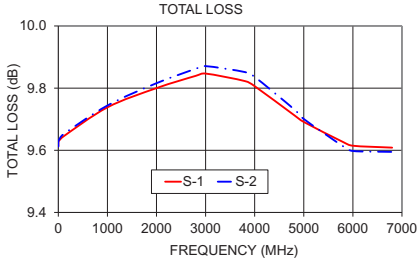
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		DC		6800	MHz
Insertion Loss Above 9.5 dB	DC-5000 DC-6800		0.5 0.8	0.9 1.6	dB
Isolation	DC-6800	17	19	—	dB
Phase Unbalance	DC-5000 DC-6800	— —	1.0 3.0	4.0 6.0	Degree
Amplitude Unbalance	DC-5000 DC-6800	 —	0.1 0.3	0.4 0.7	dB
VSWR (Port S)	DC-5000 DC-6800	 —	1.2 1.3	1.5 1.6	:1
VSWR (Port 1-2)	DC-5000 DC-6800	 —	1.3 1.5	1.5 2.2	:1

Typical Performance Data

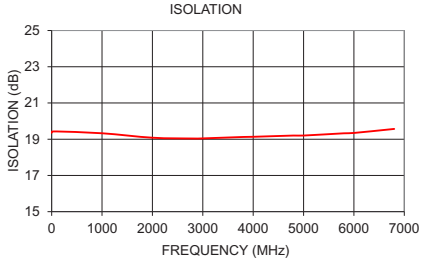
Frequency (MHz)	Total Loss[1] (dB) S-1	Total Loss[1] (dB) S-2	Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
0.30	9.61	9.61	0.00	19.35	0.03	1.04	1.03	1.04
1.00	9.63	9.63	0.00	19.41	0.02	1.04	1.03	1.03
10.00	9.63	9.63	0.00	19.42	0.01	1.04	1.03	1.03
100.00	9.64	9.65	0.01	19.43	0.03	1.04	1.04	1.04
1000.00	9.74	9.74	0.01	19.33	0.24	1.05	1.10	1.05
2000.00	9.80	9.82	0.02	19.08	0.49	1.07	1.20	1.13
2800.00	9.84	9.86	0.02	19.04	0.72	1.11	1.27	1.21
3000.00	9.85	9.87	0.02	19.05	0.80	1.12	1.28	1.22
3800.00	9.82	9.85	0.03	19.12	1.05	1.14	1.26	1.25
4000.00	9.81	9.84	0.03	19.13	1.14	1.15	1.24	1.25
4800.00	9.71	9.73	0.02	19.20	1.43	1.17	1.14	1.22
5000.00	9.69	9.70	0.01	19.20	1.49	1.17	1.12	1.22
5800.00	9.63	9.61	0.01	19.33	1.60	1.23	1.18	1.25
6000.00	9.61	9.60	0.02	19.35	1.59	1.24	1.23	1.27
6800.00	9.61	9.59	0.01	19.57	1.42	1.28	1.43	1.40

1. Total Loss = Insertion Loss + 9.5 dB splitter theoretical loss.

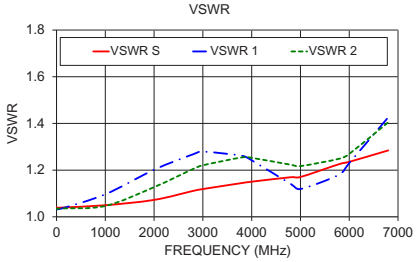
SCRP-2-682W+
TOTAL LOSS



SCRP-2-682W+
ISOLATION

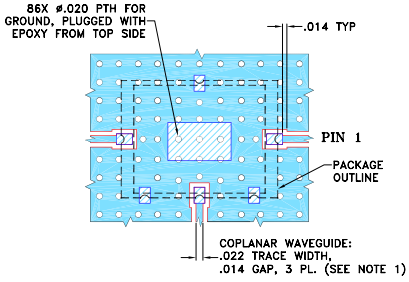


SCRP-2-682W+
VSWR



Electrical Schematic

Demo Board MCL P/N: TB-658+
Suggested PCB Layout (PL-376)



NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .001"; 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

Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

2 Way-0° Resistive Power Splitter/Combiner SCRP-2-682W+

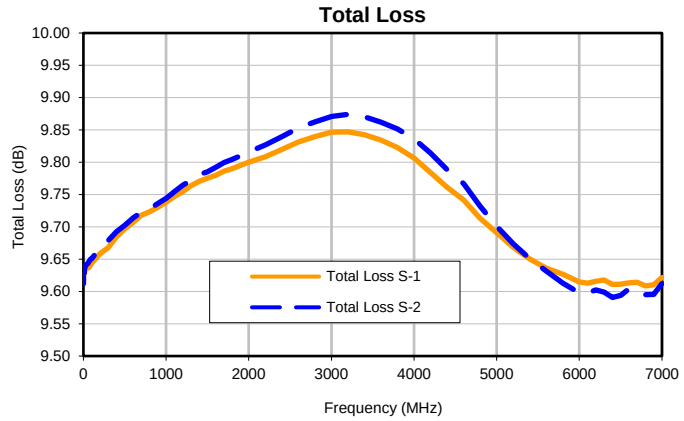
Typical Performance Data

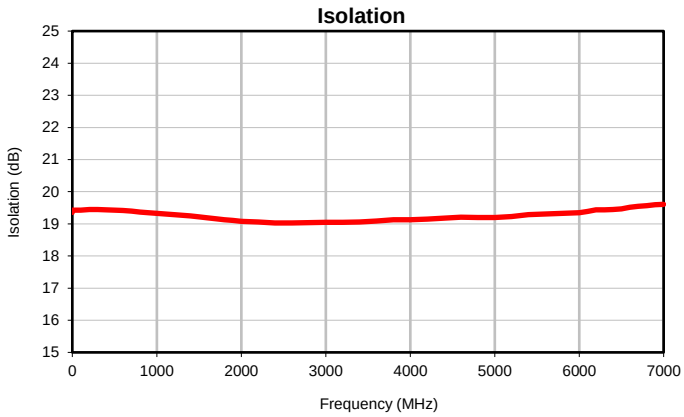
FREQ. (MHz)	TOTAL LOSS[1] (dB) S-1	TOTAL LOSS[1] (dB) S-2	AMP. UNBAL. (dB)	ISOLATION (dB) 1-2	PHASE UNBAL. (Deg.)	FREQ. (MHz)	VSWR (:1) S	VSWR (:1) 1	VSWR (:1) 2
0.3	9.61	9.61	0.00	19.35	0.03	0.3	1.04	1.03	1.04
0.6	9.61	9.62	0.01	19.38	0.02	0.6	1.04	1.03	1.03
0.9	9.62	9.63	0.01	19.40	0.04	0.9	1.04	1.03	1.03
1	9.63	9.63	0.00	19.41	0.02	1	1.04	1.03	1.03
3	9.63	9.63	0.00	19.43	0.02	3	1.04	1.03	1.03
5	9.63	9.63	0.00	19.43	0.03	5	1.04	1.03	1.03
7	9.63	9.63	0.00	19.42	0.03	7	1.04	1.03	1.03
9	9.63	9.63	0.00	19.42	0.04	9	1.04	1.03	1.03
10	9.63	9.63	0.00	19.42	0.01	10	1.04	1.03	1.03
30	9.63	9.64	0.01	19.42	0.01	30	1.04	1.03	1.03
50	9.64	9.64	0.01	19.42	0.02	50	1.04	1.03	1.04
70	9.64	9.65	0.01	19.43	0.03	70	1.04	1.03	1.04
90	9.64	9.65	0.01	19.43	0.04	90	1.04	1.03	1.04
100	9.64	9.65	0.01	19.43	0.03	100	1.04	1.04	1.04
200	9.66	9.67	0.01	19.45	0.06	200	1.04	1.04	1.04
300	9.67	9.68	0.01	19.44	0.11	300	1.04	1.04	1.04
400	9.68	9.69	0.01	19.44	0.11	400	1.05	1.05	1.04
500	9.70	9.70	0.01	19.43	0.14	500	1.05	1.05	1.04
600	9.71	9.71	0.01	19.41	0.16	600	1.05	1.06	1.04
700	9.72	9.72	0.00	19.39	0.18	700	1.05	1.07	1.04
800	9.72	9.73	0.00	19.37	0.19	800	1.05	1.08	1.04
900	9.73	9.74	0.01	19.35	0.22	900	1.05	1.09	1.04
1000	9.74	9.74	0.01	19.33	0.24	1000	1.05	1.10	1.05
1100	9.75	9.75	0.01	19.31	0.24	1100	1.05	1.11	1.05
1200	9.75	9.76	0.01	19.29	0.27	1200	1.05	1.12	1.06
1300	9.76	9.77	0.01	19.27	0.28	1300	1.05	1.13	1.06
1400	9.77	9.78	0.01	19.24	0.30	1400	1.05	1.14	1.07
1500	9.78	9.79	0.01	19.21	0.34	1500	1.06	1.15	1.08
1600	9.78	9.79	0.01	19.18	0.38	1600	1.06	1.16	1.09
1700	9.79	9.80	0.01	19.16	0.40	1700	1.06	1.17	1.10
1800	9.79	9.80	0.01	19.12	0.43	1800	1.07	1.18	1.11
1900	9.80	9.81	0.01	19.10	0.47	1900	1.07	1.19	1.12
2000	9.80	9.82	0.02	19.08	0.49	2000	1.07	1.20	1.13
2200	9.81	9.83	0.02	19.06	0.54	2200	1.08	1.23	1.15
2400	9.82	9.84	0.02	19.03	0.59	2400	1.09	1.24	1.17
2600	9.83	9.85	0.02	19.03	0.66	2600	1.10	1.26	1.18
2800	9.84	9.86	0.02	19.04	0.72	2800	1.11	1.27	1.21
3000	9.85	9.87	0.02	19.05	0.80	3000	1.12	1.28	1.22
3200	9.85	9.87	0.03	19.05	0.86	3200	1.13	1.29	1.24
3400	9.84	9.87	0.03	19.06	0.94	3400	1.13	1.28	1.25
3600	9.83	9.86	0.03	19.09	1.00	3600	1.14	1.27	1.25
3800	9.82	9.85	0.03	19.12	1.05	3800	1.14	1.26	1.25
4000	9.81	9.84	0.03	19.13	1.14	4000	1.15	1.24	1.25
4200	9.78	9.81	0.03	19.15	1.23	4200	1.15	1.22	1.25
4400	9.76	9.79	0.03	19.18	1.31	4400	1.15	1.19	1.24
4600	9.74	9.77	0.03	19.21	1.38	4600	1.16	1.17	1.23
4800	9.71	9.73	0.02	19.20	1.43	4800	1.17	1.14	1.22
5000	9.69	9.70	0.01	19.20	1.49	5000	1.17	1.12	1.22
5200	9.67	9.67	0.01	19.23	1.52	5200	1.18	1.11	1.22
5400	9.65	9.65	0.00	19.29	1.56	5400	1.20	1.12	1.22
5600	9.64	9.63	0.00	19.30	1.61	5600	1.21	1.14	1.23
5800	9.63	9.61	0.01	19.33	1.60	5800	1.23	1.18	1.25
6000	9.61	9.60	0.02	19.35	1.59	6000	1.24	1.23	1.27
6100	9.61	9.60	0.02	19.39	1.59	6100	1.25	1.25	1.28
6200	9.62	9.60	0.01	19.43	1.62	6200	1.26	1.27	1.30
6300	9.62	9.60	0.02	19.44	1.58	6300	1.27	1.29	1.31
6400	9.61	9.59	0.02	19.44	1.58	6400	1.26	1.31	1.33
6500	9.61	9.59	0.02	19.47	1.61	6500	1.27	1.34	1.34
6600	9.61	9.60	0.01	19.51	1.57	6600	1.28	1.37	1.36
6700	9.61	9.60	0.01	19.55	1.48	6700	1.28	1.40	1.38
6800	9.61	9.59	0.01	19.57	1.42	6800	1.28	1.43	1.40
6900	9.61	9.60	0.01	19.60	1.40	6900	1.29	1.45	1.43
7000	9.62	9.61	0.01	19.61	1.41	7000	1.30	1.46	1.44

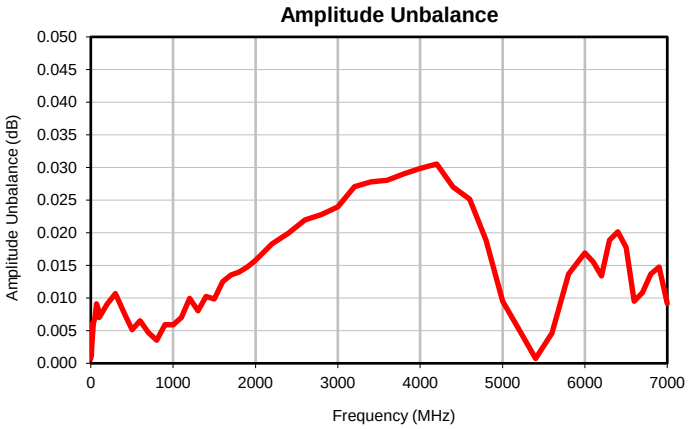
[1]Total Loss = Insertion Loss + 9.5dB Splitter Loss

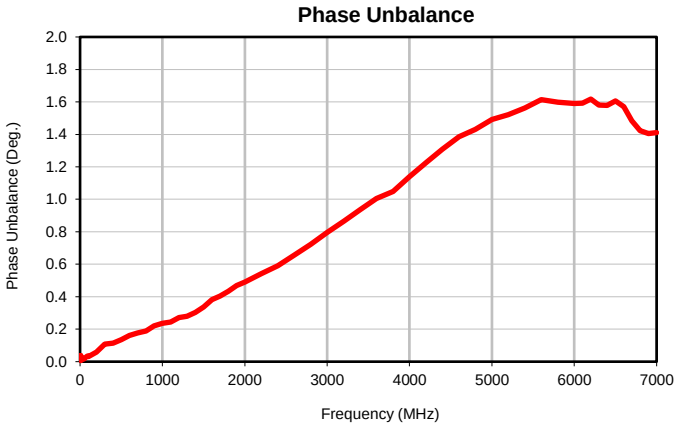
2 Way-0° Resistive Power Splitter/Combiner SCRP-2-682W+

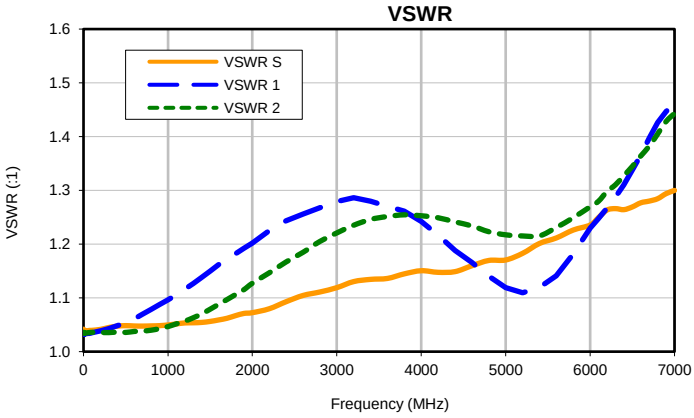
Typical Performance Curves







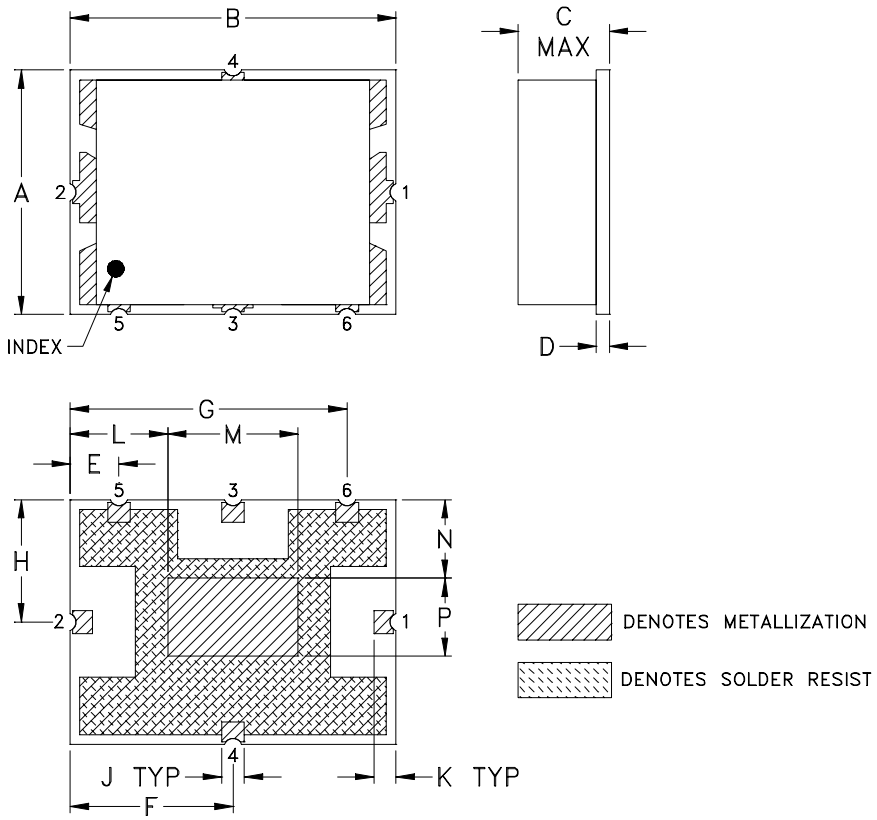




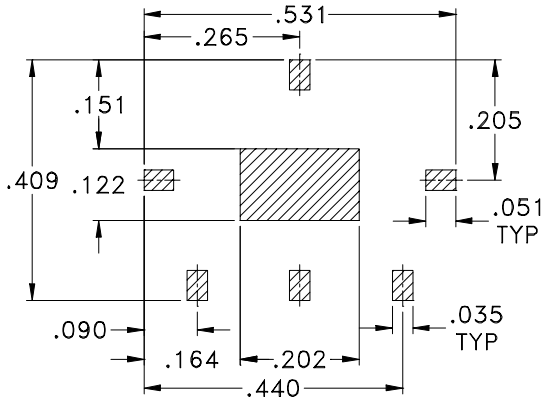
Case Style TTT

Outline Dimensions

TTT1732



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	N
TTT1732	.38 (9.65)	.50 (12.70)	.15 (3.81)	.020 (0.51)	.075 (1.91)	.250 (6.35)	.425 (10.80)	.187 (4.75)	.035 (.89)	.034 (.86)	.150 (3.81)	.200 (5.08)	.120 (3.05)

CASE #	P	WT. GRAM
TTT1732	.120 (3.05)	.8

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

Note:

1. Case material: Nickel-Silver alloy.
2. Open style, Base material: Printed wiring laminate.
3. Termination finish: 3-5 µ inch (.08-.13 microns) Gold over 120-240 µ inch (3.05-6.10 microns) Nickel plate. All models, (+) suffix.

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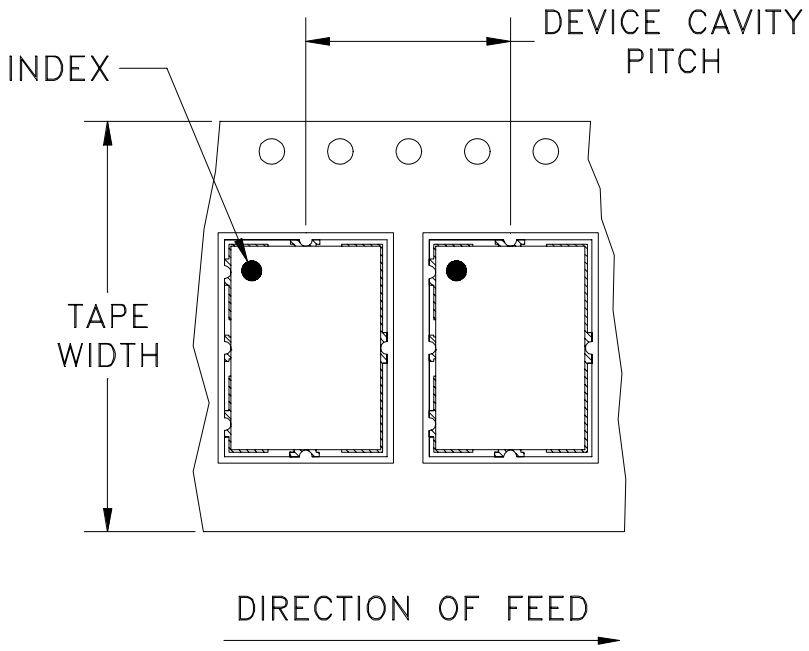
Tape & Reel Packaging TR-F12

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
24	12	7	Small quantity standards (see note)	10
				20
				50
				100
				200
		13	Standard	500

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.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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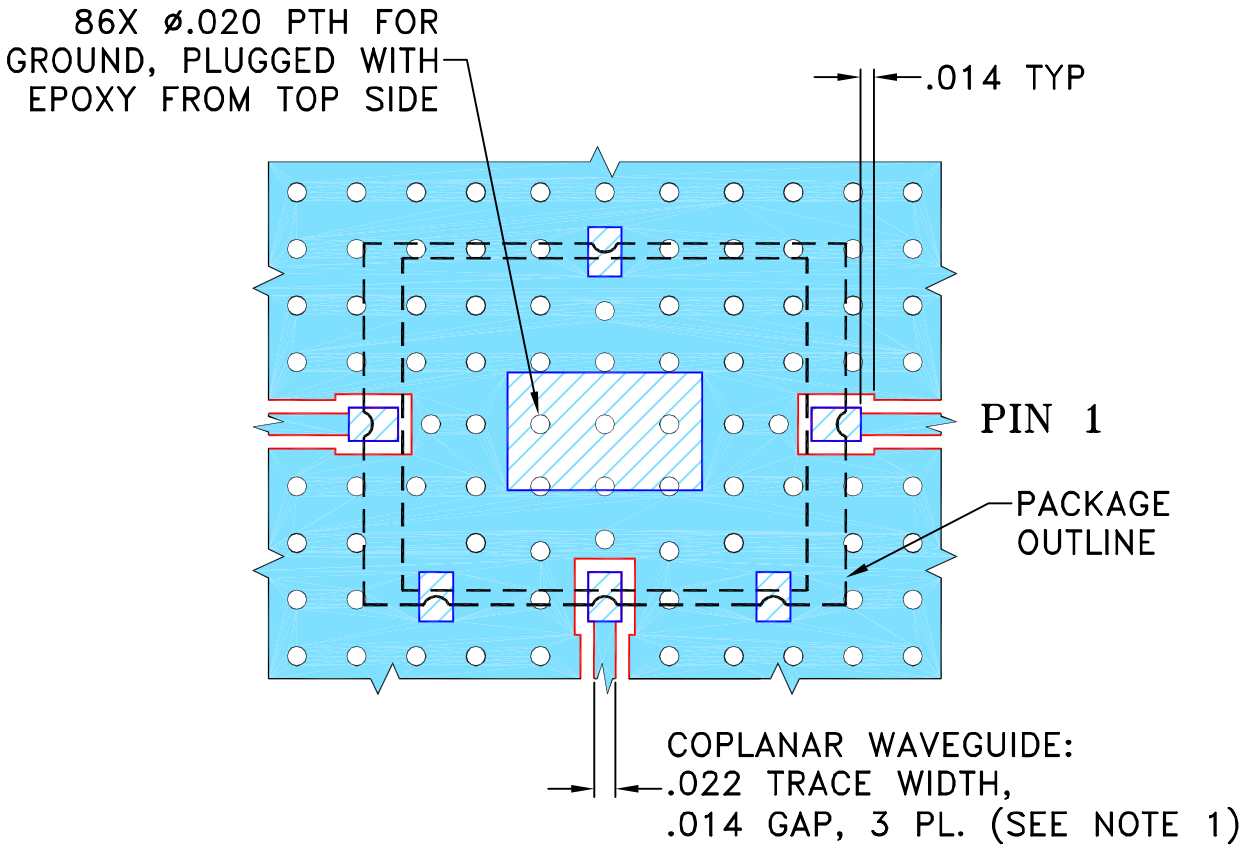
THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M137944	NEW RELEASE	07/17/12	PW	CH

SUGGESTED MOUNTING CONFIGURATION FOR TTT1732 CASE STYLE, "06SP11" PIN CONNECTION



NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .001"; 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	07/10/12
TOLERANCES ON:	CHECKED	IL	07/17/12
2 PL DECIMALS ±	APPROVED	CH	07/17/12
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

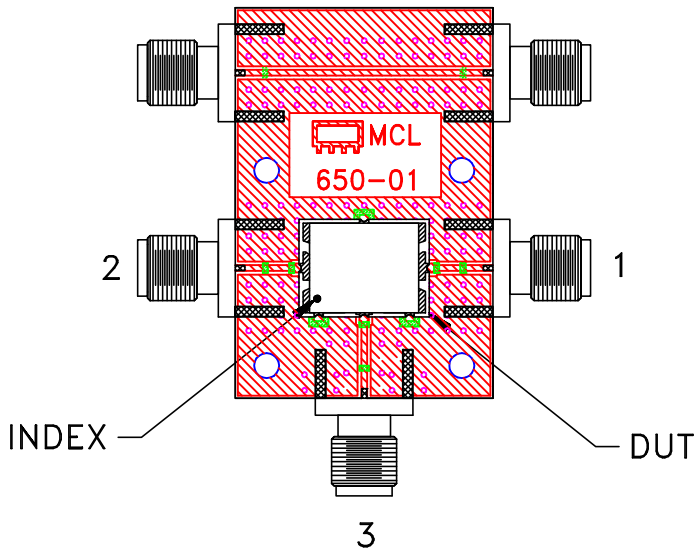
ASHEETA1.DWG REV:A DATE:01/12/95

Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

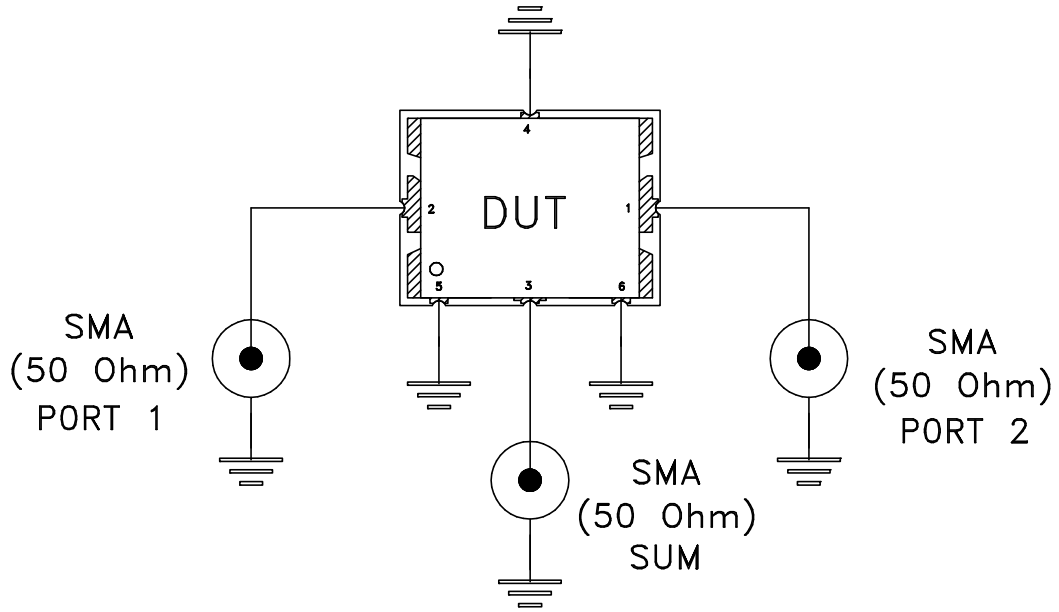
PL, 06SP11, TTT1732, TB-658+

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-376	OR
FILE: 98PL376	SCALE: 5:1	SHEET: 1 OF 1	

Evaluation Board and Circuit



TB-658+



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.010 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