Non-Catalog Model

Power Splitter/Combiner SYPQ-21.4

2 Way-90°

Important Note

This is a non-catalog model and can be manufactured on specific request.
Pricing and delivery information can be supplied upon request.

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

CASE STYLE : AH202

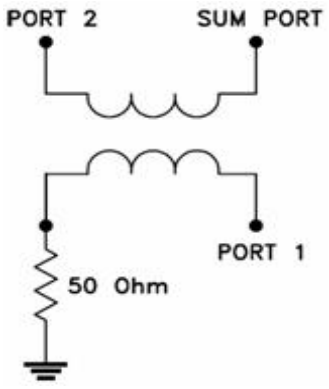
ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		20		23	MHz
Isolation	**20 - 23 MHz**	25	33		dB
Insertion Loss **Average of Coupled Outputs above 3.0 dB**	**20 - 23 MHz**		0.10	0.40	dB
Phase Unbalance	**20 - 23 MHz**		0.123	3.000	deg.
Amplitude Unbalance	**20 - 23 MHz**		0.339	1.100	dB
VSWR	**SUM Port** **OUT Ports**		1.05 1.04		(:1) (:1)

Notes: Matched power rating: 1 Watt.
Internal load dissipation: 0.125 Watt.
Non-hermetic.

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

PIN CONNECTIONS	
SUM PORT	1
PORT 1	5
PORT 2	8
GND EXT	2, 3, 6, 7
50Ω TERMINATION	4

Functional Diagram



2 Way-90° Power Splitter/Combiner SYPQ-21.4

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS[1] (dB) S-1	S-2	AVG.	AMP. UNBAL. (dB)	ISOLATION (dB) 1-2	PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1) S	1	2
20.00	2.75	3.39	3.07	0.64	39.81	90.13	20.00	1.04	1.04	1.03
20.05	2.76	3.38	3.07	0.62	39.85	90.08	20.05	1.04	1.04	1.03
20.10	2.77	3.36	3.07	0.59	39.76	90.10	20.10	1.04	1.04	1.03
20.15	2.78	3.36	3.07	0.57	39.70	90.11	20.15	1.04	1.04	1.03
20.20	2.79	3.34	3.07	0.55	39.71	90.09	20.20	1.04	1.04	1.03
20.25	2.79	3.33	3.06	0.54	39.74	90.10	20.25	1.04	1.04	1.03
20.30	2.82	3.32	3.07	0.51	39.71	90.14	20.30	1.04	1.04	1.03
20.35	2.82	3.30	3.06	0.48	39.64	90.14	20.35	1.04	1.04	1.03
20.40	2.83	3.30	3.07	0.47	39.67	90.12	20.40	1.04	1.04	1.03
20.45	2.85	3.29	3.07	0.45	39.69	90.12	20.45	1.04	1.04	1.03
20.50	2.85	3.28	3.07	0.43	39.59	90.09	20.50	1.04	1.04	1.03
20.55	2.86	3.27	3.07	0.41	39.72	90.15	20.55	1.04	1.04	1.03
20.60	2.87	3.25	3.06	0.38	39.63	90.12	20.60	1.04	1.04	1.03
20.65	2.88	3.25	3.07	0.37	39.72	90.09	20.65	1.04	1.04	1.03
20.70	2.89	3.23	3.06	0.34	39.58	90.12	20.70	1.04	1.04	1.03
20.75	2.90	3.22	3.06	0.32	39.55	90.10	20.75	1.05	1.04	1.03
20.80	2.91	3.21	3.06	0.30	39.58	90.14	20.80	1.04	1.04	1.03
20.85	2.92	3.21	3.07	0.29	39.56	90.12	20.85	1.05	1.04	1.03
20.90	2.93	3.19	3.06	0.26	39.64	90.14	20.90	1.05	1.04	1.04
20.95	2.94	3.18	3.06	0.24	39.45	90.16	20.95	1.05	1.04	1.03
21.00	2.95	3.17	3.06	0.22	39.50	90.10	21.00	1.05	1.04	1.04
21.10	2.97	3.16	3.07	0.19	39.46	90.10	21.10	1.05	1.04	1.04
21.20	2.99	3.13	3.06	0.14	39.43	90.11	21.20	1.05	1.04	1.03
21.30	3.01	3.10	3.06	0.09	39.46	90.15	21.30	1.05	1.04	1.04
21.40	3.03	3.09	3.06	0.06	39.42	90.14	21.40	1.05	1.04	1.04
21.50	3.04	3.07	3.06	0.03	39.36	90.11	21.50	1.05	1.04	1.04
21.60	3.06	3.04	3.05	0.01	39.34	90.11	21.60	1.05	1.04	1.04
21.70	3.08	3.02	3.05	0.07	39.24	90.16	21.70	1.05	1.04	1.04
21.80	3.10	3.00	3.05	0.10	39.23	90.14	21.80	1.05	1.04	1.04
21.90	3.13	2.98	3.06	0.15	39.16	90.17	21.90	1.05	1.04	1.04
22.00	3.14	2.96	3.05	0.18	39.19	90.14	22.00	1.05	1.04	1.04
22.10	3.16	2.94	3.05	0.22	39.18	90.11	22.10	1.05	1.04	1.04
22.20	3.18	2.93	3.06	0.25	39.15	90.13	22.20	1.05	1.04	1.04
22.30	3.21	2.91	3.06	0.30	39.14	90.16	22.30	1.05	1.04	1.04
22.40	3.22	2.89	3.06	0.33	39.08	90.16	22.40	1.05	1.04	1.04
22.50	3.23	2.87	3.05	0.37	39.14	90.11	22.50	1.05	1.04	1.04
22.60	3.26	2.85	3.06	0.41	38.98	90.11	22.60	1.05	1.04	1.04
22.70	3.27	2.83	3.05	0.44	39.07	90.12	22.70	1.05	1.04	1.04
22.80	3.31	2.82	3.07	0.49	38.97	90.13	22.80	1.05	1.04	1.04
22.90	3.33	2.80	3.07	0.52	38.91	90.14	22.90	1.05	1.04	1.04
23.00	3.34	2.78	3.06	0.55	38.92	90.07	23.00	1.05	1.04	1.04

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

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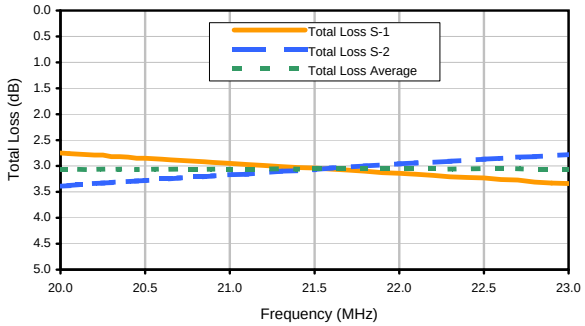
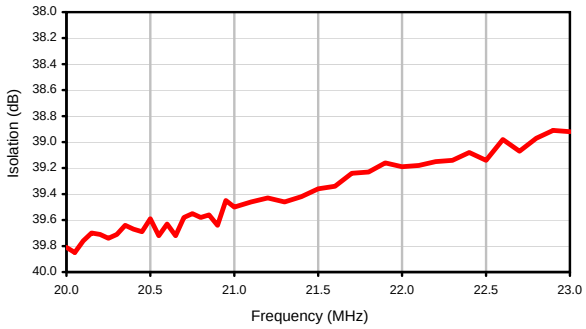
2 Way-90° Power Splitter/Combiner SYPQ-21.4

Typical Performance Curves

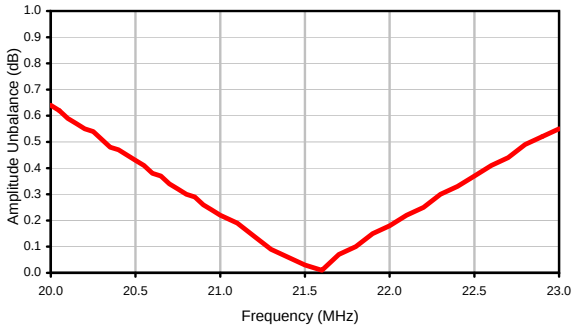
Total Loss



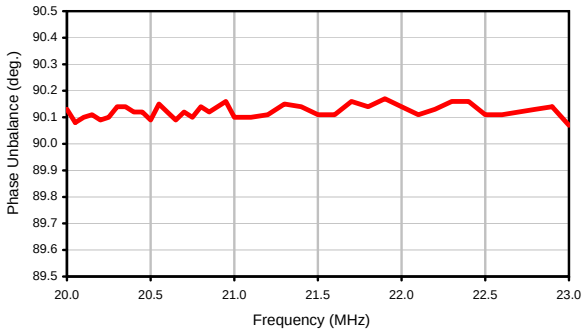
Isolation



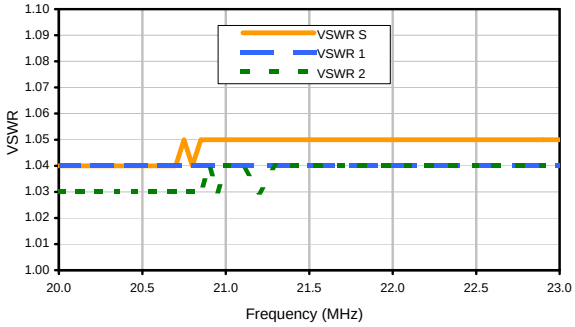
Amplitude Unbalance



Phase Unbalance



VSWR



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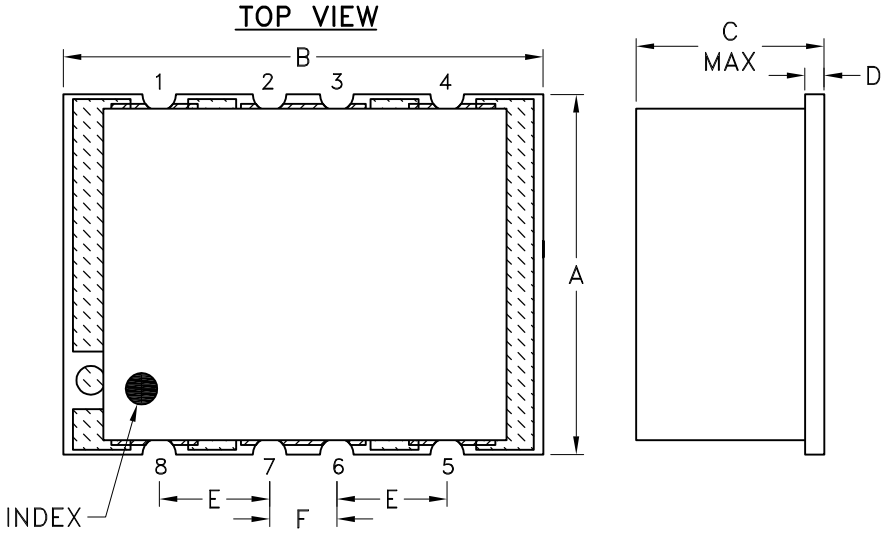
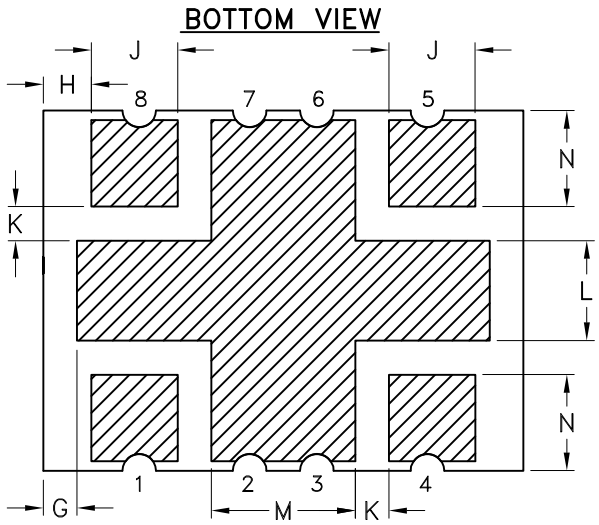
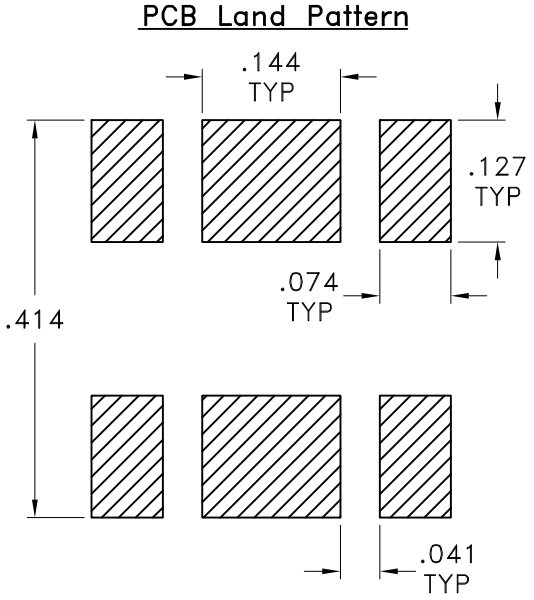
Case Style AH

Outline Dimensions

AH202







Suggested Layout,
Tolerance to be within ±.002

DENOTES METALLIZATION

DENOTES SOLDER RESIST

CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N	WT, GRAM
AH202	.38 (9.65)	.50 (12.70)	.25 (6.35)	.020 (0.51)	.115 (2.92)	.070 (1.78)	.035 (0.89)	.050 (1.27)	.090 (2.29)	.040 (1.02)	.105 (2.67)	.140 (3.56)	.095 (2.41)	.80

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

Notes:

1. Case material: Plastic.
2. Base material: Printed wiring laminate.
3. Termination finish:

For RoHS 3-5 μ inch (.08-.13 microns) Gold over 120-240 μ inch (3.05-6.10 microns) Nickel plate. All models, (+) suffix.

For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

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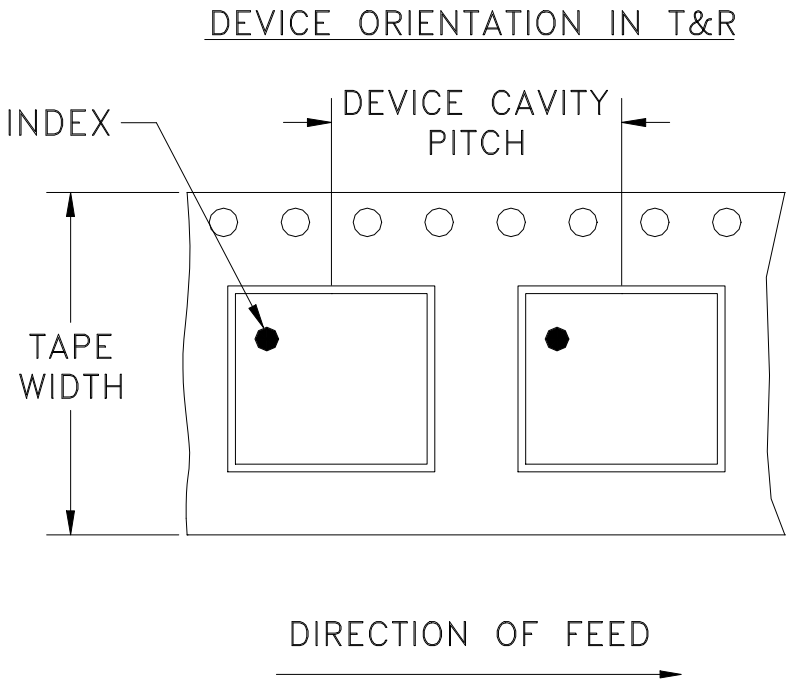
Tape & Reel Packaging TR-F61



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
24	12	13	200

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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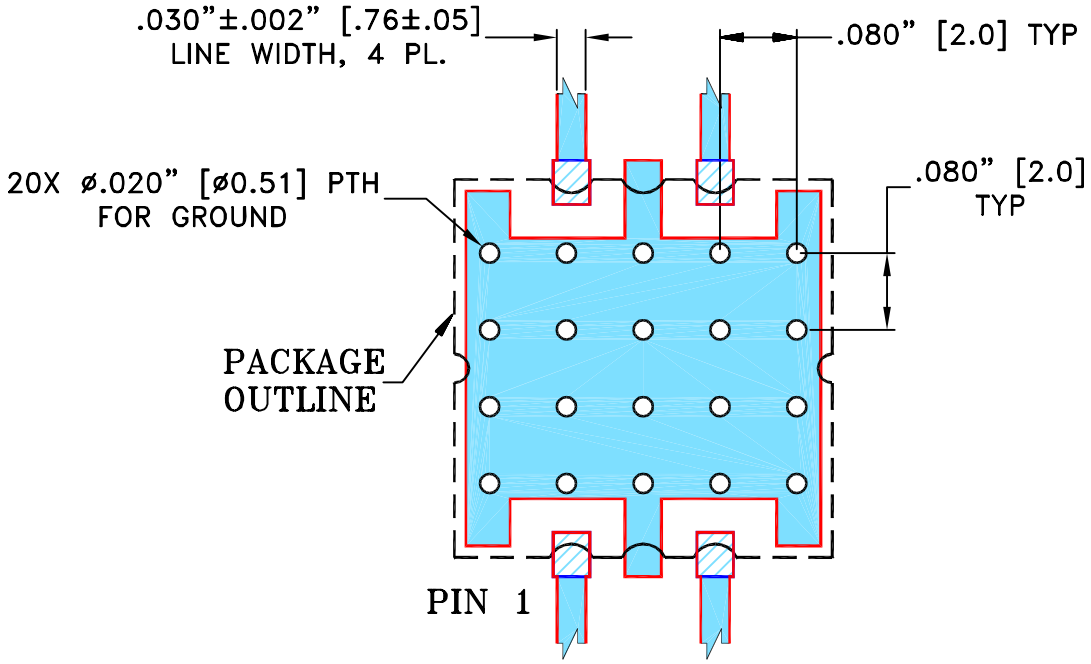
THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M103787	NEW RELEASE (FROM RAVON)	03/06	RZ	HH
A	M121588	UPDATE GROUND PLANE	02/09	EM	KN
A	R75766	UPDATE GROUND PLANE	02/09	EM	KN

SUGGESTED MOUNTING CONFIGURATION
FOR HE1135 CASE STYLE, qg PIN CONNECTION, 75 OHM



NOTE:

1. TRACE WIDTH IS SHOWN FOR RO4350 WITH DIELECTRIC THICKNESS. .030"±.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 SOLDERMASK

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	RZ (RAVON)	2 MAR 06
TOLERANCES ON:	CHECKED	RZ (RAVON)	2 MAR 06
2 PL DECIMALS ±	APPROVED	HH (RAVON)	2 MAR 06
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

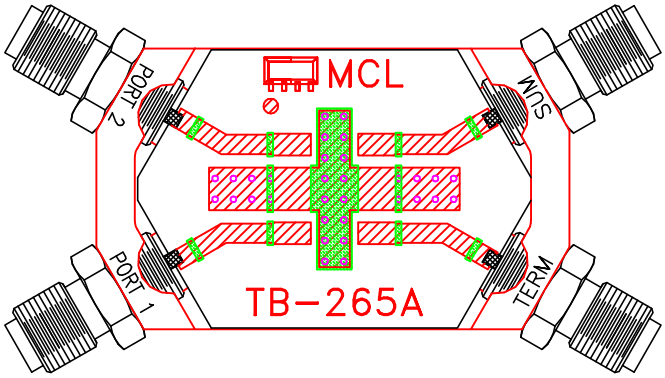
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, qg, HE1135, TB-381, 75 OHM

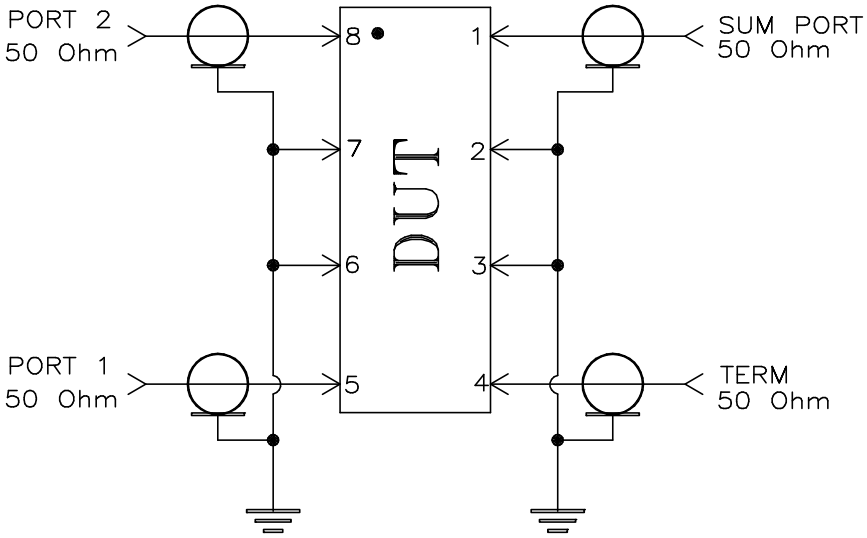
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-238	A

FILE:	SCALE:	SHEET:
98PL238	5:1	1 OF 1

Evaluation Board and Circuit



TB-265



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.030 inch.

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