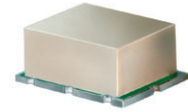


Surface Mount Attenuator/Switch

50Ω Bi-Phase 10 to 1000 MHz

SYAS-2+ SYAS-2



CASE STYLE: TTT167
PRICE: \$13.95 ea. QTY. (1-9)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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

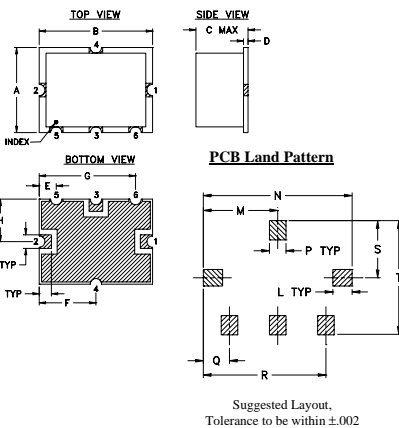
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Control Current	30mA
Permanent damage may occur if any of these limits are exceeded.	

Pin Connections

INPUT	1
OUTPUT	2
CONTROL	3
GROUND	4,5,6

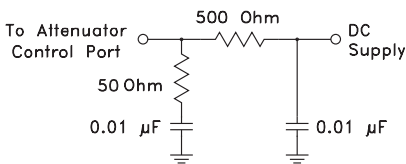
Outline Drawing



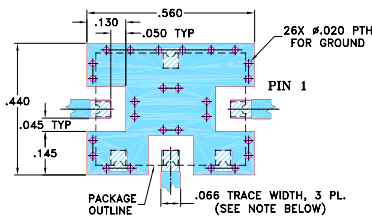
Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K
.38	.50	.23	.020	.075	.250	.425	.187	.050	.050
9.65	12.70	5.84	0.51	1.91	6.35	10.80	4.75	1.27	1.27
L	M	N	P	Q	R	S	T	wt.	
.070	.270	.540	.060	.095	.445	.208	.415	grams	
1.78	6.86	13.72	1.52	2.41	11.30	5.28	10.54	0.8	

suggested control port biasing configuration



Demo Board MCL P/N: TB-12 Suggested PCB Layout (PL-079)



- NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $0.50^{\circ} \pm .002^{\circ}$; COPPER: 1/2 OZ EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. GROUND PAD SHALL BE FREE OF SOLDER MASK IF REQUIRED FOR SOLDERING.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER), SEE NOTE 2.
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- wideband 10 to 1000 MHz
- excellent amplitude and phase unbalance

Applications

- bi-phase modulator

Attenuator/Switch Electrical Specifications

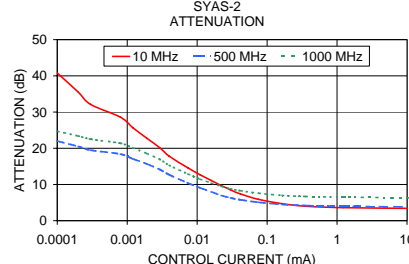
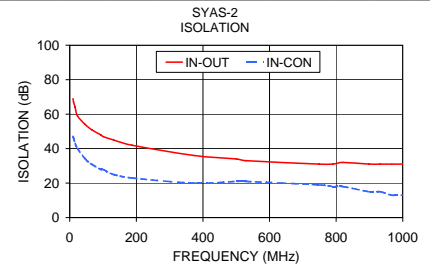
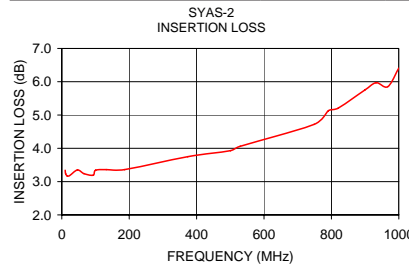
FREQUENCY (MHz)	INSERTION LOSS (dB) ±20 mA		MAX. INPUT PWR (dBm) ±20 mA		IN-OUT ISOLATION (dB) 0 mA			BI-PHASE X̄ (±20 mA) Typ.									
	Mid-Band	Total Range	1 dB compr.	no damage	L	M	U	Δ AMP (dB)	Phase (deg.) deviation from 180°								
IN f _L -f _U	CON	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Total Range	Total Range						
10-1000	DC-0.05	4.0	6.0	4.5	7.0	17*	25	59	40	42	28	28	20	0.1	0.3	2.0	3.0

L = low range [f_L to 10 f_L] M = mid range [10 f_L to f_U/2] U = upper range [f_U/2 to f_U] m = [2 f_L to f_U/2]
* 13 dBm from 10-500 MHz.

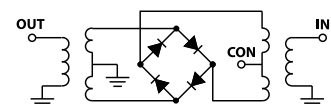
Performance specifications apply for input power up to 10 dB below stated 1 dB compression.

Typical Performance Data

Freq. (MHz)	I. Loss (dB) at 20mA	±Control ΔAMP (dB)	20mA ΔPhase (deg.)	Isolation (dB) (in-con)		Input R. Loss (dB)	Control Current (mA)	Attenuation (dB)			Phase Δ ref at 15mA Ctrl (deg.)			Input VSWR			
				10	500			1000	10	500	1000	10	500	1000			
X	σ	X	X	X	X	X		10	500	1000	10	500	1000	10	500	1000	
10.0	3.34	0.009	0.00	180.0	69	47	11.4	0.0000	51.3	24.7	27.2	76.7	40.6	0.5	3.3	2.3	4.2
11.4	3.24	0.006	0.01	180.0	67	46	11.6	0.0001	40.8	22.0	24.7	67.8	31.3	-6.7	3.2	2.2	4.0
16.1	3.17	0.004	0.01	180.1	64	43	12.2	0.0002	35.5	20.5	23.4	61.3	25.4	-10.4	3.2	2.2	3.8
23.2	3.18	0.003	0.00	180.1	59	40	12.5	0.0003	32.1	19.5	22.5	59.5	21.4	-12.8	3.1	2.1	3.7
46.5	3.35	0.002	0.01	180.3	54	34	12.5	0.0008	28.6	18.4	21.4	55.8	17.3	-14.7	3.0	2.0	3.6
65.8	3.24	0.002	0.01	180.5	51	31	12.4	0.0012	25.7	17.1	20.1	53.7	14.1	-15.8	2.9	1.9	3.4
93.1	3.19	0.030	0.01	180.7	48	28	12.4	0.0019	22.8	15.7	18.6	51.0	10.9	-16.0	2.7	1.9	3.2
100.2	3.34	0.003	0.01	180.7	47	28	12.4	0.0029	20.2	14.2	17.0	47.8	8.6	-15.1	2.6	1.7	3.1
131.8	3.36	0.004	0.01	180.9	45	25	12.4	0.0040	17.8	12.7	15.3	45.1	6.8	-13.6	2.4	1.6	2.9
186.6	3.36	0.005	0.02	181.3	42	23	12.3	0.0074	14.6	10.4	12.9	40.1	4.7	-10.7	2.1	1.5	2.7
373.8	3.75	0.008	0.02	182.1	36	20	11.4	0.0110	12.7	9.1	11.5	36.8	3.7	-8.7	1.9	1.4	2.6
500.8	3.93	0.015	0.03	182.5	34	21	11.3	0.0159	11.1	8.0	10.4	33.2	2.8	-7.2	1.7	1.4	2.6
529.1	4.06	0.018	0.04	182.5	33	21	11.2	0.0221	9.7	7.0	9.5	29.5	2.2	-5.3	1.5	1.4	2.5
748.8	4.72	0.055	0.10	182.6	31	19	10.7	0.0301	8.5	6.3	8.8	25.9	1.7	-4.3	1.3	1.4	2.6
791.0	5.13	0.050	0.15	182.8	31	18	10.3	0.0416	7.4	5.8	8.3	22.4	1.0	-3.4	1.2	1.5	2.6
820.5	5.21	0.052	0.15	182.4	32	18	10.1	0.0753	5.9	5.1	7.6	16.2	0.7	-2.1	1.2	1.6	2.6
899.0	5.75	0.063	0.20	182.4	31	15	9.5	0.1640	4.7	4.5	7.0	9.2	0.2	-1.4	1.4	1.8	2.7
932.5	5.97	0.089	0.27	182.0	31	15	9.3	0.3543	4.0	4.2	6.7	5.0	0.0	-0.8	1.6	1.9	2.7
967.2	5.85	0.077	0.24	181.8	31	13	9.1	1.2309	3.6	4.0	6.5	1.7	-0.1	-0.5	1.8	2.0	2.7
1000.0	6.41	0.111	0.38	181.4	31	13	8.8	15.1064	3.4	3.8	6.3	0.0	0.0	-0.1	1.9	2.0	2.7



electrical schematic



For detailed performance specs & shopping online see web site

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