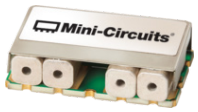
Surface Mount

Diplexer

CDPL-1710A+

50Ω 1176, 1590 MHz



CASE STYLE: NT1997

The Big Deal

- Low insertion loss
- High rejection
- Good return loss

Product Overview

CDPL-1710A+ is a 50Ω high performance diplexer with the channel-1 at 1176 MHz and channel-2 at 1590 MHz. Good return loss combined with high out of channel rejection makes it a ideal component in differential GPS.

Key Features

Feature	Advantages
Low passband insertion loss	Passband insertion loss 1dB ensures low signal loss through both the channels.
Excellent Stopband rejection	Co-channel rejection 47 dB typical ensures unwanted spurious are eliminated.
Good return loss	This makes signal transmission with very less rejection and well-matched with the adjacent component used in the system.

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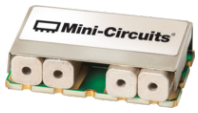


CASE STYLE: NT1997

Maximum Ratings

Operating Temperature	-40° to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	30dBm Max.

Permanent damage may occur if any of these limits are exceeded. These ratings are not intended for continuous normal operation

Pin Connections

CHANNEL-1	9
CHANNEL-2	1
COMMON PORT	12
GROUND	2-8,10,11,13,14

Features

- Low insertion loss
- 50Ω Impedance
- Good return loss
- High rejection

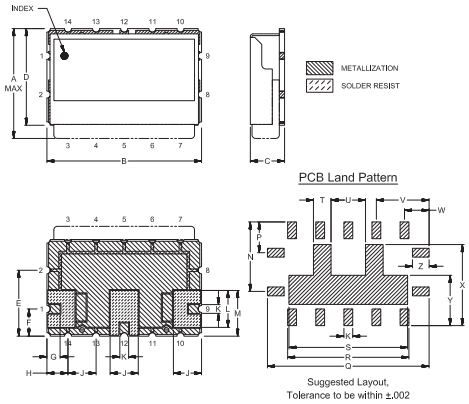
+RoHS Compliant

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

Applications

- Differential GPS
- Aeronautical Radio navigation

Outline Drawing



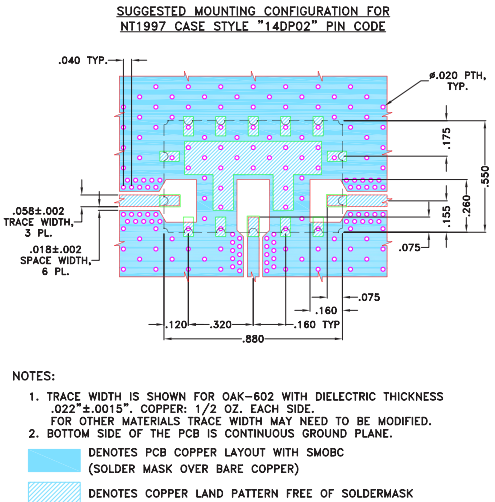
Outline Dimensions (inch / mm)

A	B	C Min	C Max	D	E	F	G	H	J	K
.625	.880	.200	.215	.550	.375	.155	.075	.120	.160	.050
15.88	22.35	5.10	5.47	13.97	9.53	3.94	1.91	3.05	4.06	1.27

L	M	N	P	Q	R	S	T	U	V
.210	.260	.395	.175	.920	.690	.675	.100	.196	.300
5.33	6.60	10.03	4.45	23.37	17.53	17.15	2.54	4.98	7.62

W	X	Y	Z	Wt. grams
.140	4.61	.286	.095	3.8
3.56	11.71	7.26	2.41	

Demo Board MCL P/N: TB-814+
Suggested PCB Layout (PL-432)



NOTES:

1. TRACE WIDTH IS SHOWN FOR OAK-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 SOLDERMASK

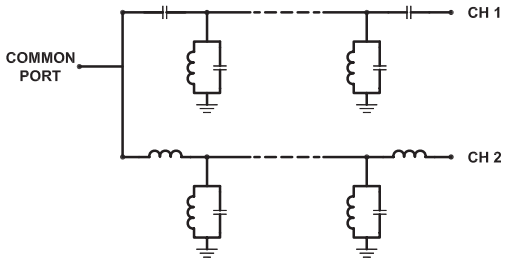
Electrical Specifications at 25°C

Parameter		Port	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	Channel-1	1176	-	0.8	1.0	dB
		Channel-2	1590	-	0.8	1.0	
	3 dB Bandwidth	Channel-1	1176	-	60	-	MHz
		Channel-2	1590	-	60	-	
	Return Loss	Channel-1	1176	-	10.9	-	dB
		Channel-2	1590	-	10.9	-	
		Common	1176	-	10.9	-	
			1590	-	10.9	-	
Stop Band Isolation		Channel-1	1590	30	50.6	-	dB
		Channel-2	1176	30	39.7	-	

Typical Performance Data at 25°C

FREQUENCY (MHz)	INSERTION LOSS (dB)		RETURN LOSS (dB)		
	Channel-1	Channel-2	Common Port	Channel-1	Channel-2
400	86.04	56.56	0.11	0.03	0.11
600	81.91	73.45	0.06	0.02	0.08
750	80.68	56.60	0.05	0.04	0.05
800	66.89	53.34	0.05	0.04	0.04
950	43.33	46.44	0.07	0.07	0.03
1000	36.06	44.64	0.09	0.08	0.03
1036	30.26	43.41	0.12	0.10	0.02
1084	20.82	41.98	0.23	0.20	0.02
1100	16.85	41.69	0.35	0.30	0.02
1144	3.03	45.66	4.93	4.71	0.02
1148	2.10	46.72	7.10	6.79	0.02
1150	1.73	46.99	8.54	8.15	0.02
1176	0.68	43.60	21.87	21.81	0.02
1202	2.36	41.23	5.51	5.47	0.01
1208	3.69	39.59	3.41	3.38	0.02
1290	20.69	32.91	0.16	0.12	0.02
1380	30.54	27.54	0.14	0.08	0.03
1590	58.34	0.76	21.04	0.09	21.18
1650	49.35	10.32	0.85	0.09	0.81
1770	38.63	30.81	0.19	0.10	0.05
1900	34.24	42.72	0.19	0.11	0.01
2000	32.18	49.39	0.20	0.12	0.01

Functional Schematic



Notes

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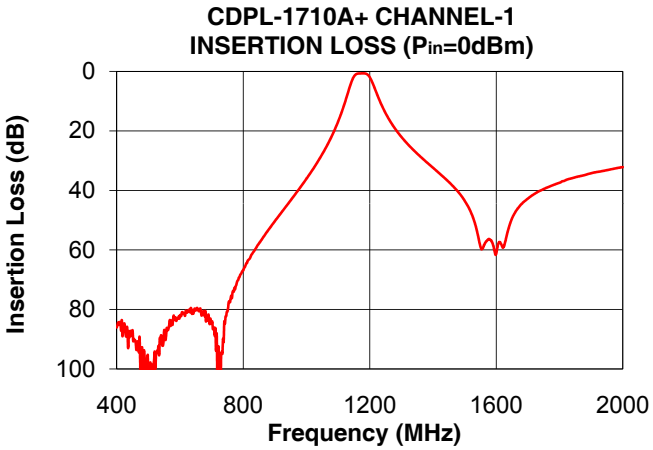

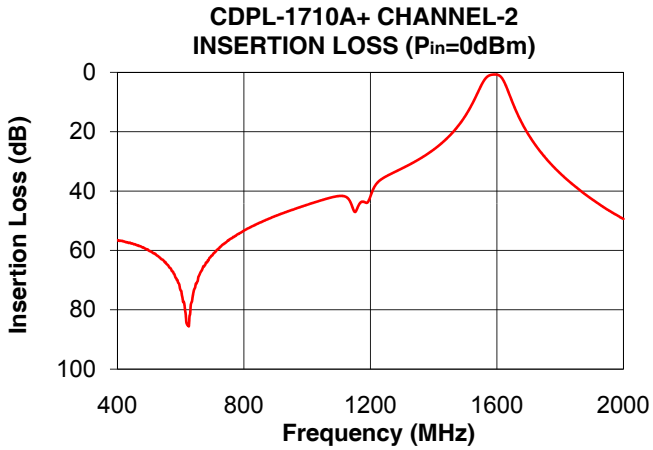

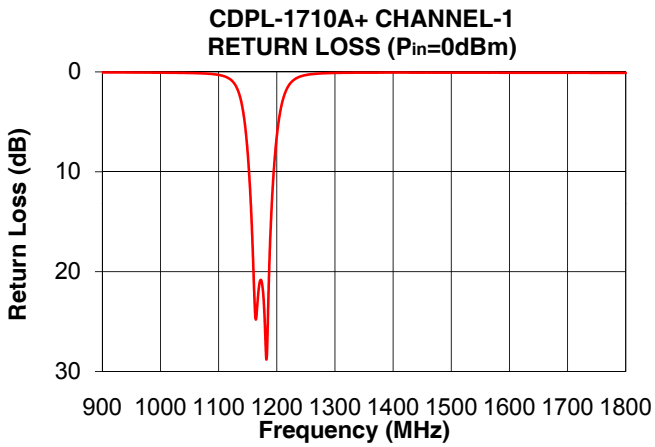

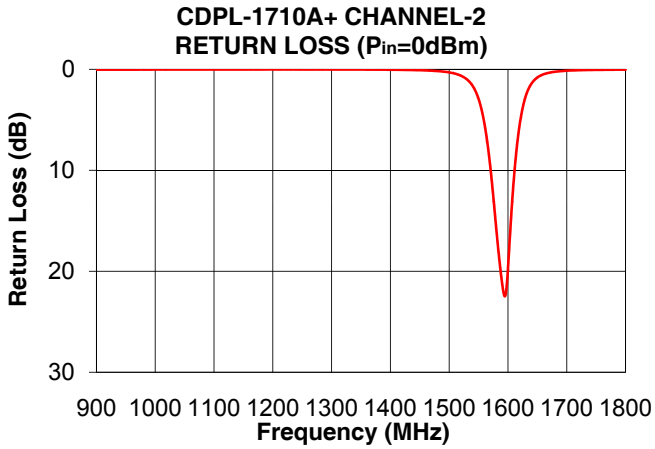

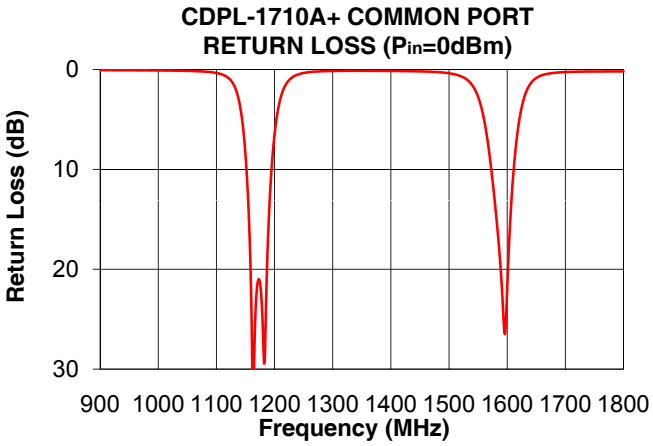

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