

Surface Mount Diplexer

SDP-1R3G+

50Ω DC to 1300 MHz
(DC-600, 710-1300 MHz)



Generic photo used for illustration purposes only

CASE STYLE: HU1186

The Big Deal

- Low insertion loss
- High Rejection
- Miniature shielded package

Product Overview

SDP-1R3G+ is a low-pass + high-pass combination device. Low pass port is designed for DC to 600 MHz and high pass port is designed for 710 to 1300 MHz. This shielded case package provides very low pass-band insertion loss and excellent co-channel rejection which makes this suitable for high performance applications like defense and other wireless communication systems.

Key Features

Feature	Advantages
Low passband insertion loss	Suitable for high performance application.
Excellent rejection	Helps in reducing co-channel interference.
Shielded case	Reduced interference with the surrounding components.

Notes

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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

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+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

Max. RF Power Input 6 W at 25°C

- Exceeding any one or combination of these limits may cause permanent damage.
- Sustained operation near these survivability limits is not recommended.
- Max RF power input derate to 3W at 85°C

Pin Connections

HIGH PASS PORT 13

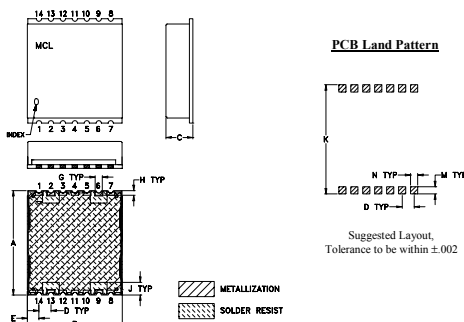
LOW PASS PORT 9

COMMON PORT 2

GROUND 1,3-5,7,8,10-12,14

NON CONNECTED 6

Outline Drawing



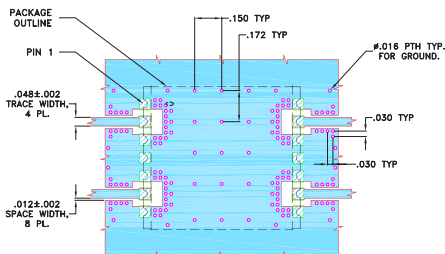
Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
.870	.800	.25	.100	.097	--	.060	.040
22.10	20.32	6.35	2.54	2.46	--	1.52	1.02
J	K	L	M	N	P	wt	
.105	.910	--	.060	.060	--	grams	
2.67	23.11	--	1.52	1.52	--		2.85

Note: Please refer to case style drawing for details

Demo Board MCL P/N: TB-833+ Suggested PCB Layout (PL-450)

SUGGESTED MOUNTING CONFIGURATION FOR HU1186 CASE STYLE "14FL03" PIN CODE



NOTES:

- TRACE WIDTH IS SHOWN FOR ROGERS(R04350B) WITH DIELECTRIC THICKNESS .030"±.002" COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- 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

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Features

- Low insertion loss
- 50Ω Impedance
- Combination of Low pass and High pass filters
- Miniature shielded package

Applications

- Defense
- Transmitter / Receiver

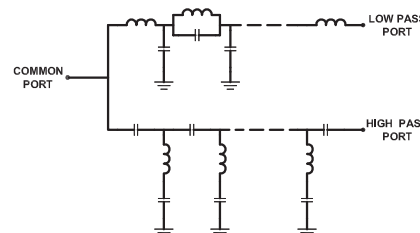
Electrical Specifications at 25°C

Parameter	Port	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	Low Pass	DC-600	-	0.8	1.2	dB
		High Pass	710-1300	-	0.8	1.2	
	Return Loss	Low Pass	DC-600	12	15	-	dB
			High Pass	710-1300	12	15	
		Common	DC-600	12	15	-	
			710-1300	12	15	-	
Stop Band Isolation	Low Pass	710-1300	33	40	-	dB	
	High Pass	DC-600	33	40	-		

Typical Performance Data at 25°C

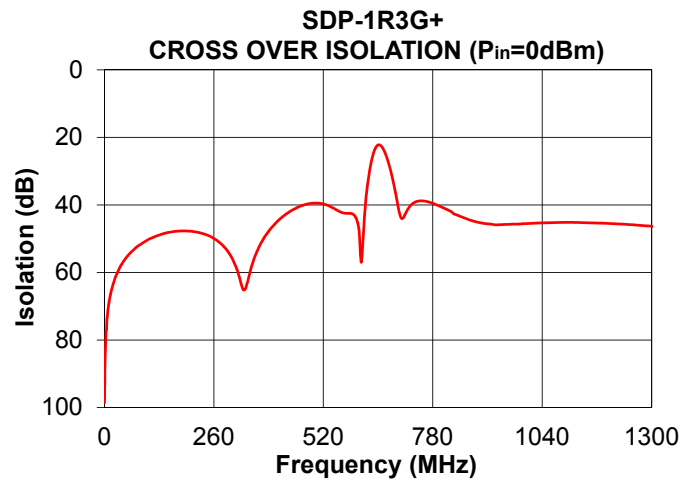
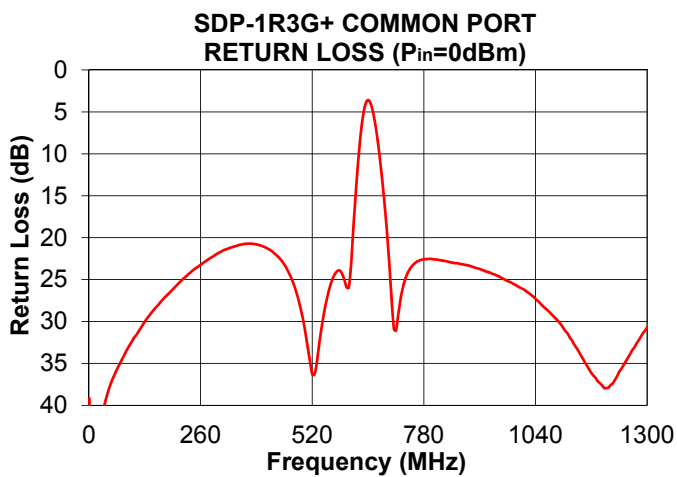
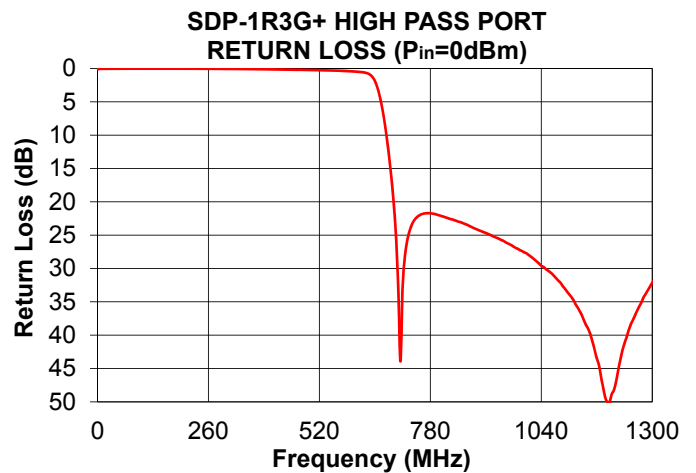
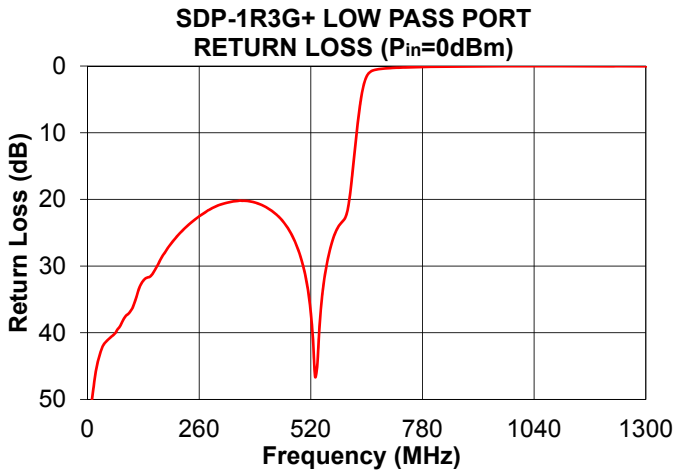
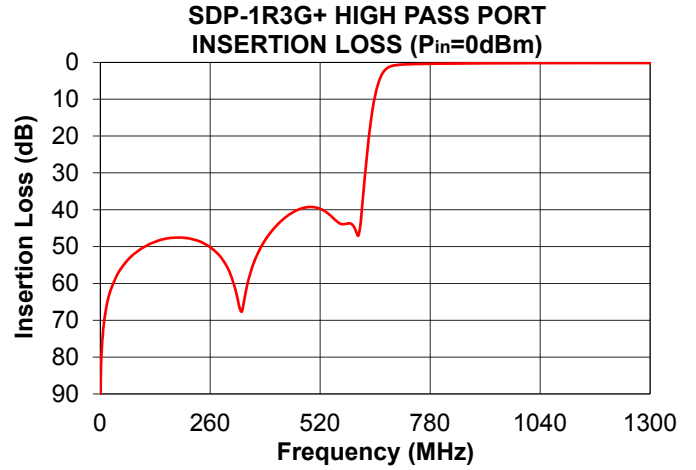
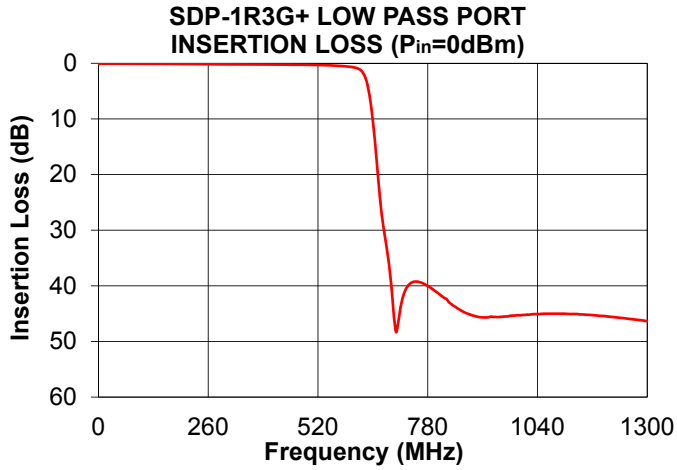
FREQUENCY (MHz)	INSERTION LOSS (dB)			RETURN LOSS (dB)	
	Low Pass Port	High Pass Port	Common Port	Low Pass Port	High Pass Port
10	0.07	69.71	49.89	50.28	0.05
50	0.09	55.86	37.51	40.92	0.04
100	0.10	50.37	32.38	36.77	0.03
150	0.12	47.99	28.68	31.30	0.03
200	0.14	47.67	25.92	26.19	0.03
250	0.16	49.44	23.60	23.03	0.04
300	0.19	55.50	21.87	21.02	0.06
350	0.21	59.22	20.86	20.24	0.09
600	0.67	44.64	25.92	22.77	0.44
625	1.52	31.79	12.12	11.01	0.60
635	3.19	20.46	6.68	5.68	0.79
665	22.63	3.48	5.92	0.65	5.20
685	34.25	1.16	14.14	0.41	14.10
650	10.26	8.92	3.59	1.55	1.87
700	45.46	0.74	23.51	0.32	25.74
710	46.65	0.63	30.83	0.28	43.94
800	41.07	0.36	22.56	0.11	22.01
850	44.02	0.31	23.03	0.07	23.03
900	45.58	0.27	23.59	0.05	24.42
1000	45.30	0.23	25.84	0.02	27.58
1200	45.44	0.20	37.94	0.03	50.01
1300	46.35	0.19	30.69	0.03	32.14

Functional Schematic



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M173298
EDU3504
SDP-1R3G
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