

Surface Mount

# Diplexer

## SDP-2R15+

50Ω DC to 2150 MHz  
(DC-800, 1500-2150 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-2R15+ is a low-pass + high-pass combination device. Low pass port is designed for DC to 800 MHz and high pass port is designed for 1500 to 2150 MHz. This diplexer can be used in SATCOM, navigation, point to point radio and vehicle tracking system and multiband radio systems.

### Key Features

Feature	Advantages
Low passband insertion loss	Suitable for high performance application
Excellent stopband rejection	Spurious rejection and avoids using additional filters
Shielded case	Reduced interference with the surrounding components.

#### 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](http://www.minicircuits.com/MCLStore/terms.jsp)



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## SDP-2R15+

50Ω DC to 2150 MHz (DC-800, 1500-2150 MHz)

### Maximum Ratings

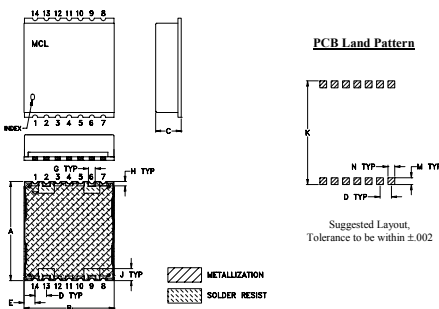
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	2W at 25°C

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

### Pin Connections

HIGH PASS PORT	6
LOW PASS PORT	13
COMMON PORT	2
GROUND	1,3-5,7-12,14

### Outline Drawing

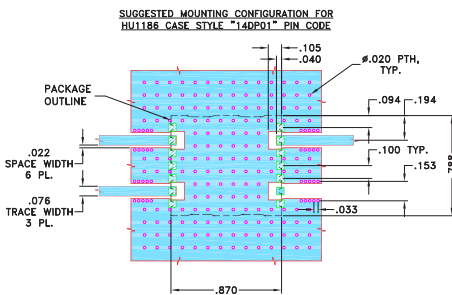


### Outline Dimensions (inch/mm)

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-647+ Suggested PCB Layout (PL-353)



- NOTES:
- TRACE WIDTH IS SHOWN FOR OAK (OAK-602) WITH DIELECTRIC THICKNESS .031" ±.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 SM0BC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

### Features

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

### Applications

- Satcom
- Navigation
- Vehicle tracking system

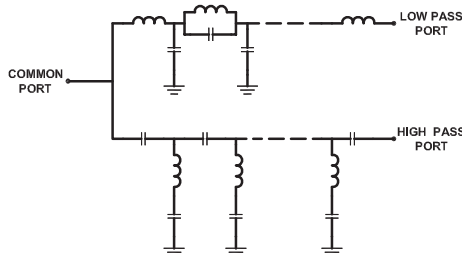
### Electrical Specifications at 25°C

Parameter	Port	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	Low Pass	DC-800	-	0.4	1.0	dB
		High Pass	1500-2150	-	0.5	1.0	
	Return Loss	Low Pass	DC-800	12	19	-	dB
		High Pass	1500-2150	12	20	-	
Common		DC-800	12	19	-		
Stop Band Isolation	Low Pass	1300-3000	20	30	-	dB	
		1500-2150	33	46	-		
	High Pass	DC-930	20	29	-	dB	
		DC-800	33	46	-	dB	

### 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
1	0.01	92.57	51.39	50.76	0.00
10	0.02	74.49	44.64	45.01	0.00
30	0.04	64.97	35.95	36.12	0.00
110	0.09	53.78	26.02	26.11	0.02
270	0.17	47.24	20.14	20.16	0.08
395	0.20	46.86	19.63	19.63	0.14
800	0.36	48.55	24.17	22.93	0.39
870	0.58	36.79	14.84	14.27	0.43
930	1.31	29.33	8.26	7.98	0.52
980	2.87	19.89	4.52	4.24	0.69
1000	3.85	15.94	3.57	3.17	0.84
1070	9.19	6.43	2.83	1.05	2.32
1110	13.23	3.90	3.82	0.61	3.81
1150	17.41	2.56	5.20	0.45	5.40
1250	27.13	1.15	9.17	0.34	9.38
1300	31.77	0.84	11.56	0.33	11.67
1500	48.49	0.42	29.33	0.33	27.58
1595	59.49	0.40	33.71	0.33	37.20
1905	49.68	0.41	25.88	0.34	27.14
2150	47.56	0.46	20.40	0.34	21.11
2800	45.37	1.15	8.79	0.36	8.68
3000	47.80	1.34	8.10	0.38	7.90

### Functional Schematic



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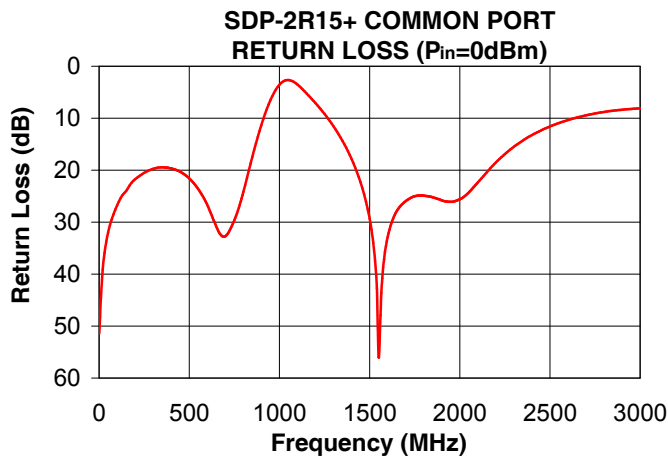
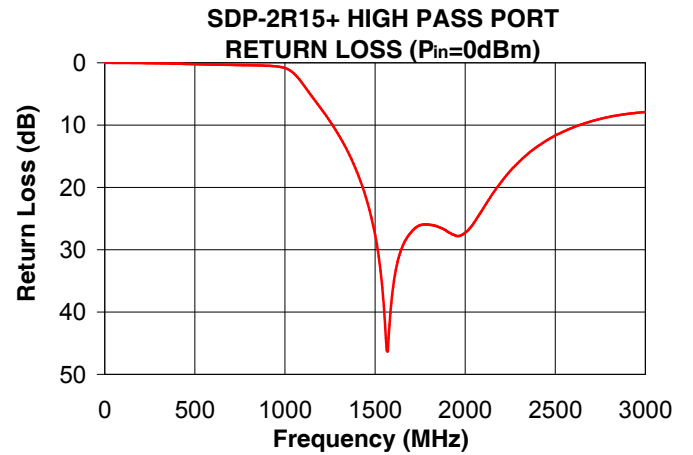
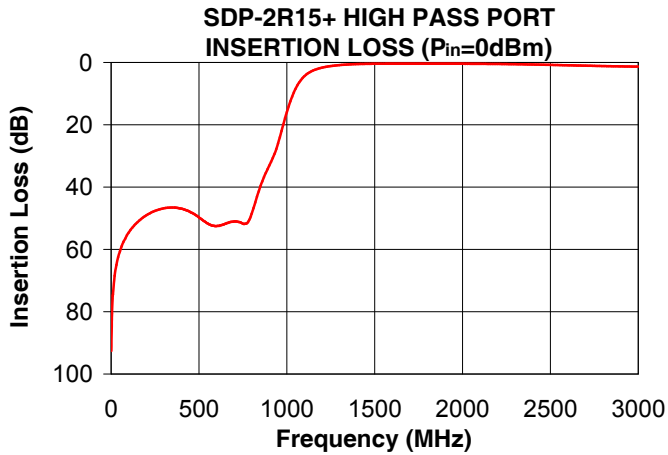
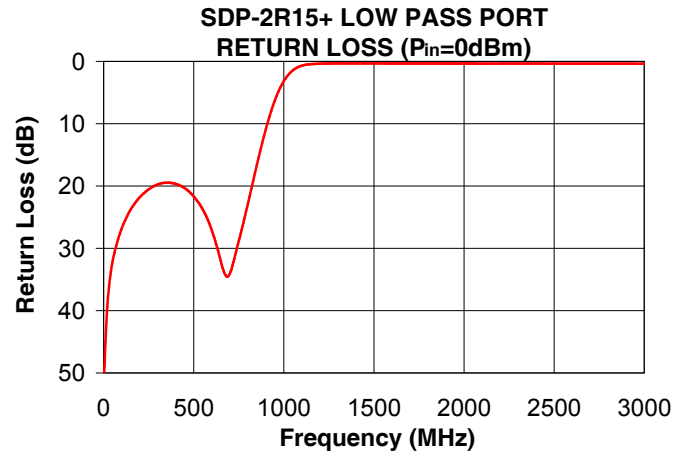
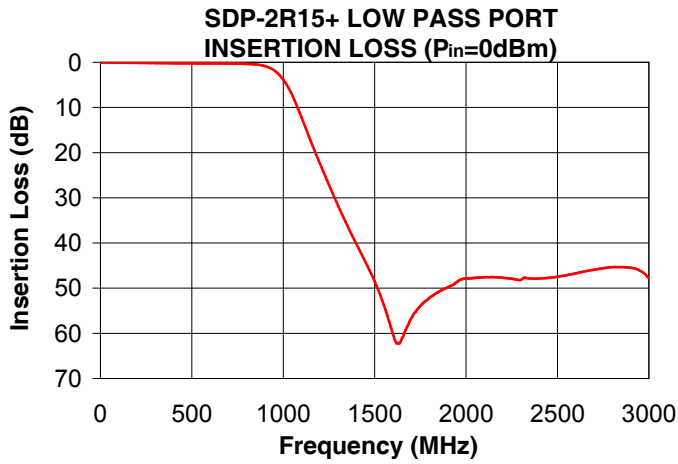


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+RoHS Compliant

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



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