

Surface Mount

# Diplexer

## TDP-121-75+

75Ω DC to 1200 MHz  
(DC-250, 450-1200 MHz)



CASE STYLE: HR1176

### The Big Deal

- Low insertion loss
- High rejection
- 75Ω Impedance
- Miniature shielded package

### Product Overview

TDP-121-75+ is a low-pass + high-pass combination device. Low pass port is designed for DC to 250 MHz and high pass port is designed for 450 to 1200 MHz. This diplexer can be used in satellite systems, communication test sets and other 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
Miniature shielded package	Reduced interference with the surrounding components.



ISO 9001 ISO 14001 AS 9100 CERTIFIED



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IF/RF MICROWAVE COMPONENTS

For detailed performance specs & shopping online see web site

**Notes:** 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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).

# Surface Mount Diplexer

## TDP-121-75+

75Ω DC to 1200 MHz (DC-250, 450-1200 MHz)



CASE STYLE: HR1176  
PRICE: \$14.95 ea. QTY (10)

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

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

### Maximum Ratings

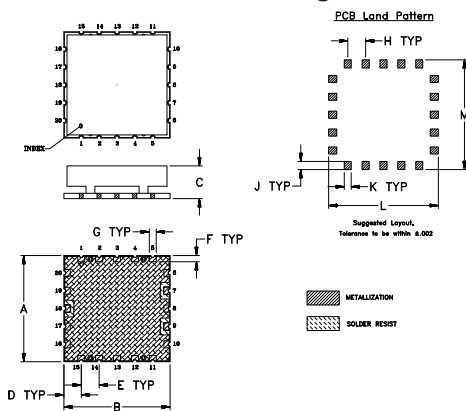
Operating Temperature	-40° to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	250mW at 25°C

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	7
LOW PASS PORT	9
COMMON PORT	18
GROUND	1-6,8,10-17,19,20

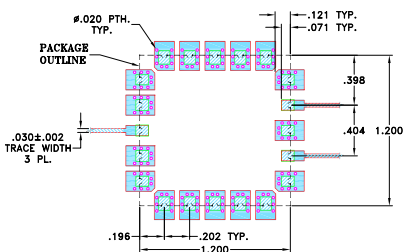
### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	
1.200 (30.48)	1.200 (30.48)	.370 (9.40)	.196 (4.98)	.202 (5.13)	.071 (1.80)	
G	H	J	K	L	M	wt
.079 (2.01)	.202 (5.13)	.091 (2.31)	.079 (2.01)	1.240 (31.50)	1.240 (31.50)	8.5

Demo Board MCL P/N: TB-563+  
Suggested PCB Layout (PL-228)



- NOTES:
- TRACE WIDTH IS SHOWN FOR OAK WITH DIELECTRIC THICKNESS .022"±.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

### Features

- Low insertion loss
- 75Ω Impedance
- Combination of Low pass and High pass filters
- Miniature shielded package
- Aqueous washable

### Applications

- Satellite systems
- Multiband radio systems

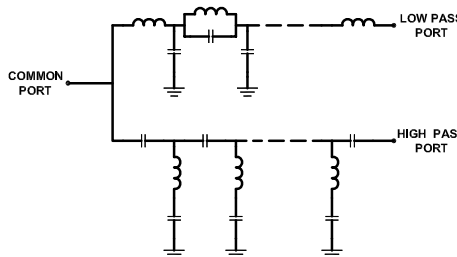
### Electrical Specifications at 25°C

Parameter	Port	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Low Pass	DC-250	-	0.6	1.2	dB
	High Pass	450-1200	-	0.6	1.2	
	Return Loss	Low Pass	DC-250	12	18	-
High Pass		450-1200	11	14	-	
Common		DC-250	12	19	-	
Stop Band Isolation	Low Pass	450-1200	20	45	-	dB
	High Pass	DC-250	20	56	-	

### 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	0.03	79.44	44.70	53.42	0.02
25	0.07	64.33	38.92	39.30	0.00
50	0.11	58.94	34.90	38.15	0.00
75	0.14	58.22	33.22	47.95	0.00
100	0.18	57.90	28.48	30.36	0.01
150	0.28	64.02	20.50	19.54	0.07
200	0.39	64.95	20.48	20.25	0.19
250	0.57	57.66	24.18	22.90	0.36
300	2.20	42.15	10.60	11.32	0.69
320	16.12	19.35	1.56	1.03	1.08
340	39.01	6.81	2.58	0.49	2.94
360	64.66	2.04	7.72	0.35	8.46
380	56.34	0.96	14.37	0.28	15.04
400	57.63	0.64	23.84	0.27	24.65
450	54.44	0.46	20.41	0.29	20.56
500	51.55	0.44	18.47	0.29	18.91
650	50.04	0.32	21.36	0.46	22.23
700	49.47	0.34	17.57	0.46	18.23
800	48.23	0.45	14.53	0.49	14.73
950	46.17	0.58	14.34	0.28	14.72
1100	45.03	0.47	17.61	0.28	18.71
1200	45.48	0.44	18.90	0.09	19.30

### Functional Schematic



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