# Surface Mount NON-CATALOG

## Diplexer

**75**O 5 to 870 MHz (5-38, 49-870 MHz)

### **The Big Deal**

- Low insertion loss
- High rejection
- $75\Omega$  Impedance
- Miniature shielded package

### **Product Overview**

TDP-871-75+ is a low-pass + high-pass combination device. Low pass port is designed for 5 to 38 MHz and high pass port is designed for 49 to 870 MHz. This diplexer can be used in satellite systems, vehicle tracking, 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.	

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.
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**TDP-871-75+** 

CASE STYLE: HR1176



## NON-CATALOG TDP-871-75+ Diplexer

#### 5 to 870 MHz (5-38, 49-870 MHz) 75Ω

#### **Maximum Ratings**

Surface Mount

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**



А	в	С	D	E	F	
1.200	1.200	.370	.196	.202	.071	
(30.48)	(30.48)	(9.40)	(4.98)	(5.13)	(1.80)	
G	н	J	К	L	м	wt
.079	.202	.091	.079	1.240	1.240	gran
(2.01)	(5.1.2)	(2.21)	(2.01)	(31.50)	(31.50)	85
(2.01)	(5.15)	(2.31)	(2.01)	(01.00)	(51.50)	0

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





DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

#### Features

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

#### **Applications**

- · Satellite systems
- · Vehicle tracking
- Radio



#### CASE STYLE: HR1176

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

#### Electrical Specifications at 25°C Port Frequency (MHz) Parameter Min. Тур. Max. Unit Low Pass 2.0 5-38 1.0 dB Insertion Loss High Pass 49-870 1.0 2.5 12 Low Pass 5-38 25 Pass Band High Pass 49-870 12 17 Return Loss dB 5-38 12 24 Common 49-870 12 17 Low Pass 49-870 25 47 Stop Band Isolation dB High Pass 5-38 25 46

#### Typical Performance Data at 25°C

FREQUENCY (MHz)	INSERTI (d	ON LOSS B)	RETURN LOSS (dB)			
	Low Pass Port	High Pass Port	Common Port	Low Pass Port	High Pass Port	
1.0	0.10	64.11	38.55	38.69	0.00	
5.0	0.13	50.61	33.47	34.15	0.02	
20.0	0.28	53.65	35.48	36.79	0.27	
30.0	0.48	53.59	33.06	32.84	0.59	
38.0	0.99	51.51	27.71	31.08	1.02	
39.0	1.20	62.76	20.55	22.57	1.11	
40.0	1.62	46.09	14.28	16.29	1.24	
41.5	3.50	29.50	6.76	8.74	1.56	
42.0	4.89	23.86	4.96	6.80	1.75	
43.0	9.58	14.27	3.00	4.13	2.49	
44.0	17.23	7.59	3.50	2.81	4.46	
44.5	22.16	5.34	4.78	2.43	6.35	
45.0	27.50	3.77	6.79	2.14	9.09	
47.0	45.34	1.55	19.30	1.43	33.12	
48.0	55.16	1.29	20.22	1.22	20.76	
49.0	66.66	1.14	18.94	1.07	18.34	
100.0	70.66	0.28	24.49	0.31	27.45	
150.0	84.81	0.23	35.11	0.20	37.22	
300.0	73.80	0.26	21.14	0.04	21.23	
500.0	65.00	0.39	16.85	0.05	17.36	
800.0	52.29	0.51	18.32	0.11	18.85	
870.0	55.02	0.49	19.55	0.22	19.86	

#### **Functional Schematic**



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## **Performance Charts**





TDP-871-75+

**NON-CATALOG** 







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