Surface Mount

Diplexer

TDP-112-75+

75Ω   DC to 1100 MHz
(DC-65, 88-1100 MHz)

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

CASE STYLE: HR1176

Product Overview

TDP-112-75+ is a low-pass + high-pass combination device. Low pass port is designed for DC to 65 MHz and high pass port is designed for 88 to 1100 MHz. This diplexer can be used in CATV, Set-top box, Defence communications, Wireless communications 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.

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75Ω   DC to 1100 MHz (DC-65, 88-1100 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.
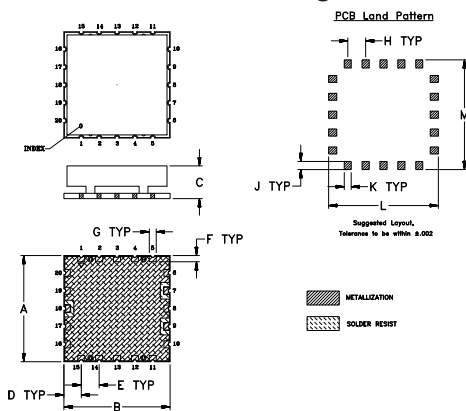
Maximum Ratings

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

Features

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

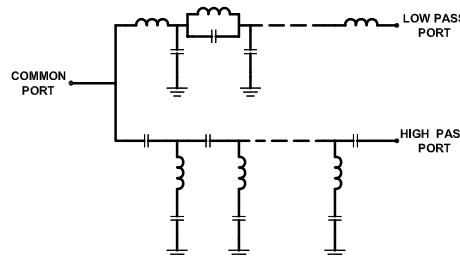## Applications

- CATV
- Set- top box
- Wireless communications

Outline Drawing

METALLIZATION
SOLDER RESIST

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
1.200	1.200	.370	.196	.202	.071	.079
30.48	30.48	9.40	4.98	5.13	1.80	2.01

H	J	K	L	M	wt
.202	.091	.079	1.240	1.240	grams
5.13	2.31	2.01	31.50	31.50	8.5

Demo Board MCL P/N: TB-563+
Suggested PCB Layout (PL-228)
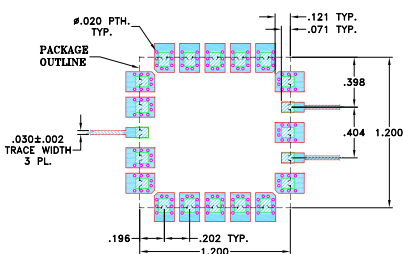
NOTES:
1. TRACE WIDTH IS SHOWN FOR OAK WITH DIELECTRIC THICKNESS .022"±.002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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	Low Pass	DC-65	-	1.0	2.5	dB
		High Pass	88-1100	-	1.0	2.5	
	Return Loss	Low Pass	DC-65	13	20	-	dB
		High Pass	88-1100	13	17	-	
		Common	DC-65	13	20	-	
			88-1100	13	17	-	
Stop Band Isolation		Low Pass	88-1100	25	51	-	dB
		High Pass	DC-65	25	54	-	

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	0.05	78.53	43.78	44.09	0.00
10	0.10	59.63	30.39	31.20	0.00
27	0.20	61.00	26.12	29.89	0.02
47	0.40	58.97	21.45	20.55	0.10
65	0.98	58.40	21.23	20.73	0.60
70	2.68	35.82	9.02	7.97	0.93
71	3.77	34.45	6.83	5.75	1.03
72	5.37	30.05	5.14	4.00	1.15
74	10.22	17.55	3.38	1.91	1.61
76	17.38	8.91	3.79	1.06	2.98
77	22.04	5.99	5.04	0.85	4.47
79	33.37	2.71	10.25	0.63	9.94
80	38.79	1.99	14.28	0.56	14.02
85	51.48	1.00	22.76	0.36	24.70
88	54.11	0.84	20.20	0.29	21.78
100	62.26	0.51	22.23	0.16	22.62
250	77.15	0.21	22.06	0.32	21.19
300	69.75	0.22	19.89	0.33	19.79
540	55.61	0.37	17.10	0.36	17.29
650	62.79	0.41	18.14	0.16	18.15
900	59.86	0.28	31.18	0.09	35.95
1100	56.57	0.39	19.41	0.19	19.30

Functional Schematic

COMMON PORT
LOW PASS PORT
HIGH PASS PORT

TDP-112-75+ LOW PASS PORT INSERTION LOSS (P$_{in}$=0dBm)

TDP-112-75+ LOW PASS PORT RETURN LOSS (P$_{in}$=0dBm)

TDP-112-75+ HIGH PASS PORT INSERTION LOSS (P$_{in}$=0dBm)

TDP-112-75+ HIGH PASS PORT RETURN LOSS (P$_{in}$=0dBm)

TDP-112-75+ COMMON PORT RETURN LOSS (P$_{in}$=0dBm)