

# Surface Mount Diplexer

75Ω, 5 to 870 MHz (5-42, 54-870 MHz)

## DPLX-4254-75+



CASE STYLE: HR1176  
PRICE: \$9.95 ea. QTY (10-24)

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

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

### Features

- Low Insertion Loss 0.5dB typ.
- High Isolation 60dB typ.
- 75 Ω Impedance
- Usable up to 1000 MHz

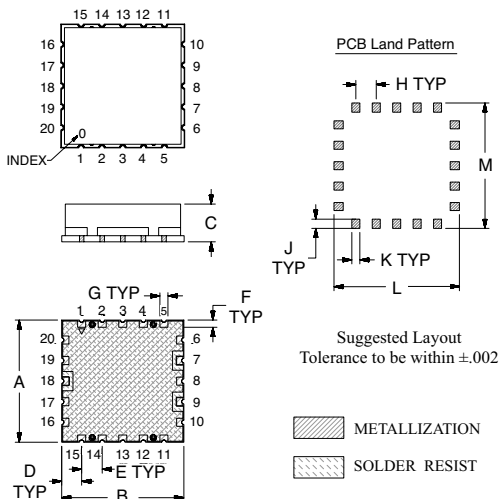
### Pin Connections

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

### Applications

- CATV
- MMDS
- Set-Top Box

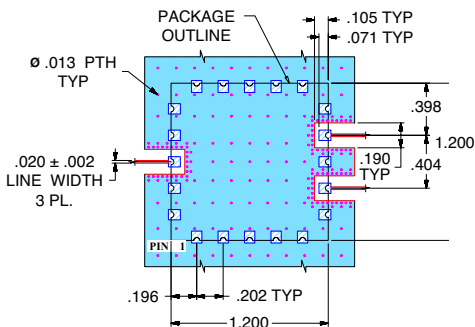
### Outline Drawing



### Outline Dimensions (inch/mm)

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

Demo Board MCL P/N: TB-366+  
Suggested PCB Layout (PL-228)



#### NOTE:

1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .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

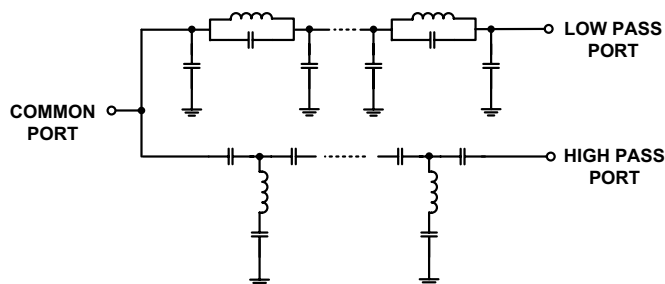
### Electrical Specifications (T<sub>AMB</sub> = 25°C)

Insertion Loss, dB PASSBAND MHz		Isolation, dB STOPBAND MHz				Cross Over Isolation (dB)		Return Loss (dB)									
5-42		54-870		54-870		5-42		42-54 MHz		Low Pass Port 5-42 MHz		High Pass Port 54-870 MHz		Common Port 5-42 MHz		54-870 MHz	
Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.
0.5	1.2	0.5	1.4	50	40	60	35	30	17	25	18	20	11	30	22	23	11

### Typical Performance Data (T<sub>AMB</sub> = 25°C)

FREQUENCY (MHz)	INSERTION LOSS (dB)		CROSS OVER ISOLATION (dB) (between LPF and HPF)	RETURN LOSS (dB)		
	Low Pass Port	High Pass Port		Common Port	Low Pass Port	High Pass Port
5	0.07	61.67	62.95	34.95	34.58	0.01
20	0.19	62.13	62.09	32.08	33.43	0.06
32	0.40	66.98	68.54	42.50	34.00	0.26
41	0.88	51.11	50.32	21.91	20.12	0.80
42	0.98	43.19	43.22	24.42	21.35	0.94
44	1.41	32.07	32.27	18.81	24.12	1.31
46	3.88	23.59	24.95	6.12	6.95	2.04
48	12.68	8.28	24.58	4.27	1.96	4.88
50	27.29	2.78	32.13	11.28	0.98	14.57
52	41.03	1.60	43.85	19.86	0.66	36.57
54	52.64	1.19	54.82	21.30	0.51	25.68
55	53.95	1.08	55.40	21.22	0.46	24.17
80	67.87	0.35	70.63	24.11	0.15	23.17
100	74.51	0.25	74.82	34.71	0.13	29.48
200	61.58	0.18	65.65	23.61	0.17	22.91
400	59.25	0.24	57.06	18.36	0.23	18.84
600	54.63	0.35	53.67	16.07	0.25	16.36
800	50.91	0.47	50.60	13.89	0.29	14.30
870	50.27	0.57	44.86	13.45	0.68	13.67
1000	60.80	1.06	61.87	10.63	0.28	11.27

### Functional Schematic



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