

# Surface Mount Diplexer

75Ω, 50 to 1550 MHz (50-870, 960-1550 MHz)

## DPL870-960-75+



CASE STYLE: JK1226  
PRICE: \$18.95 ea. QTY (1-9)

**+ 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

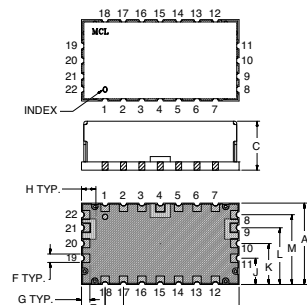
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	250mW at 25°C

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

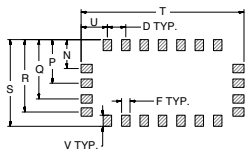
### Pin Connections

COMMON PORT	4
LOW PASS PORT	9
BAND PASS PORT	21
GROUND	1-3,5-8,10-20,22

### Outline Drawing



### PCB Land Pattern



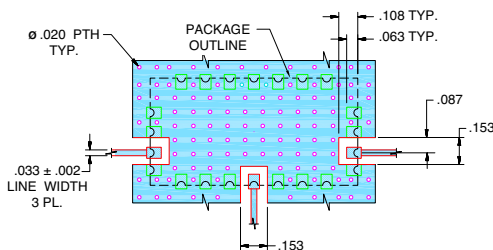
Suggested Layout  
Tolerance to be within ±.002

METALLIZATION SOLDER RESIST

### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K
.610	1.181	.375	.138	.177	.063	.063	.108	.197	.307
15.49	30.00	9.52	3.50	4.50	1.60	1.60	2.74	5.00	7.80
L	M	N	P	Q	R	S	T	U	V
.425	.523	.217	.327	.445	.543	.650	1.221	.197	.083
10.80	13.28	5.51	8.31	11.30	13.79	16.51	31.01	5.01	2.11
wt. grams									
9.0									

### Demo Board MCL P/N: TB-475+ Suggested PCB Layout (PL-286)



NOTES:  
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 SOLDER MASK

### Features

- Low Insertion Loss 0.7dB typ.
- High Isolation 55dB typ.
- 75 Ω Impedance
- Shielded case
- Aqueous washable

### Applications

- CATV
- MoCA
- Set-Top Box
- Wire-Line Broadband Access

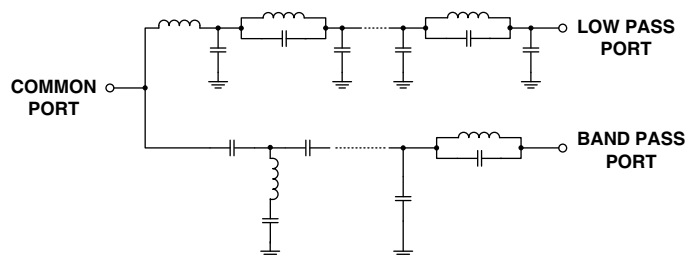
### Electrical Specifications (T<sub>AMB</sub> = 25°C)

Insertion Loss, dB PASSBAND MHz		Isolation, dB STOPBAND MHz		Cross Over Isolation (dB)	Return Loss (dB)				
					Low Pass Port	Band Pass Port	Common Port		
50-870	960-1550	960-1550	50-870	870-960	50-870MHz	960-1550MHz	50-870MHz	960-1550MHz	
Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.
0.5	2.5	1.0	2.5	55	30	55	38	35	12
								20	12
								25	13
								20	12
								25	12

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

FREQUENCY (MHz)	INSERTION LOSS (dB)		CROSS OVER ISOLATION (dB) (between LPF and BPF)	RETURN LOSS (dB)		
	Low Pass Port	Band Pass Port		Common Port	Low Pass Port	Band Pass Port
50	0.09	61.56	60.96	25.91	25.96	0.02
100	0.14	54.28	54.21	20.37	20.32	0.06
200	0.22	50.23	50.08	17.45	17.58	0.14
300	0.23	48.76	49.10	21.36	21.81	0.25
500	0.39	57.19	56.50	16.98	17.10	0.45
600	0.46	61.37	60.49	17.70	18.19	0.41
700	0.46	52.39	51.55	24.03	24.46	0.38
800	0.76	51.35	51.15	19.59	21.04	0.51
870	1.28	43.61	44.26	25.16	22.97	0.77
900	3.09	25.49	28.55	8.66	7.59	1.20
920	8.11	13.40	20.29	10.29	2.99	2.80
960	50.09	1.69	54.00	16.65	0.55	18.55
1000	45.21	1.17	46.37	20.98	0.39	20.67
1200	66.02	0.73	60.50	33.86	0.30	36.35
1300	59.85	0.71	61.75	44.29	0.26	44.25
1400	59.81	0.81	56.04	22.97	0.28	21.84
1550	52.77	1.01	55.52	45.44	0.22	25.72
1600	54.09	1.32	53.55	15.33	0.27	14.77
2000	42.87	26.35	58.46	0.91	0.26	0.59
3000	42.27	38.29	31.35	1.08	1.77	0.92

### Functional Schematic



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RF/IF MICROWAVE COMPONENTS

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