

# Surface Mount Low Pass Filter

## RLPF-566-75+

75Ω 54 to 566 MHz

### The Big Deal

- Low Insertion loss, 0.9 dB typical
- Good VSWR of 1.3:1 typical
- Fast roll-off
- Miniature shielded package



CASE STYLE: CK1113

### Product Overview

The RLPF-566-75+ is a 75Ω lowpass filter in a shielded package (size of 0.500" x 0.500" x 0.220") fabricated using SMT technology. Covering 54 to 566 MHz band width, these units offer good matching within the passband and high rejection. This model uses a miniature high Q capacitors and chip inductors for high reliability. In addition it has repeatable performance across production lots and consistent performance across temperature.

### Key Features

Feature	Advantages
Low insertion loss	Low signal loss results in better SNR in signal chain.
Fast roll-off	Fast roll-off, this will attenuate frequencies closer to the passband with good rejection.
Good VSWR of 1.3:1 typical	This filter maintains typical VSWR over a wide passband frequency range making this filter easier to integrate into receiver and transmitter RF chains with less concerns for in band frequency ripple.
Small size, 0.500" x 0.500" x 0.220"	The small surface mount package enables the RLPF-566-75+ to be used in compact designs.

#### Notes

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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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### Features

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### Applications

- TV Broad casting
- Auxiliary broad casting
- Biomedical telemetry device

### Electrical Specifications at 25°C

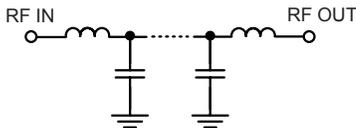
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	F1-F2	54 - 525	—	0.6	1.0	dB
		F2-F3	525 - 566	—	0.9	1.3	dB
	VSWR	F1-F2	54 - 525	—	1.25	1.5	:1
F2-F3		525 - 566	—	1.3	1.6	:1	
Stop Band	Rejection	F4-F5	634 - 668	15	18	—	dB
		F5-F6	668 - 1400	25	32	—	dB
	VSWR	F6-F7	1400 - 3000	—	30	—	dB
		F4-F7	634 - 3000	—	20	—	:1

### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.5 W max.

Permanent damage may occur if any of these limits are exceeded.

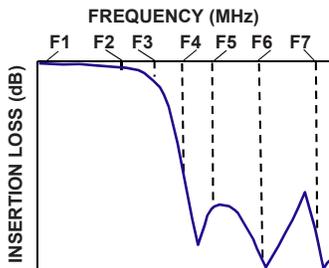
### Functional Schematic



### Typical Performance Data at 25°C

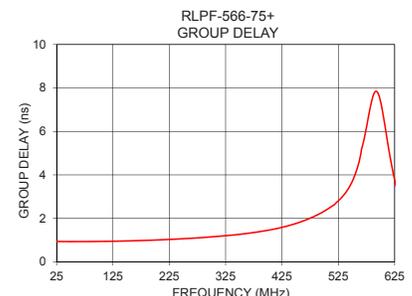
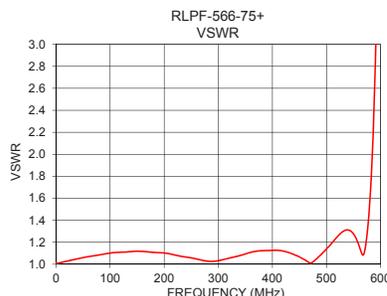
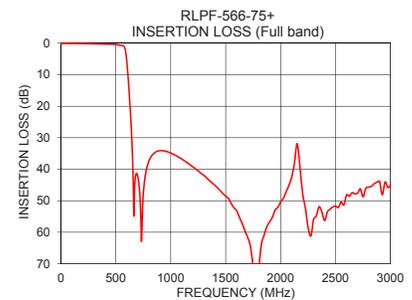
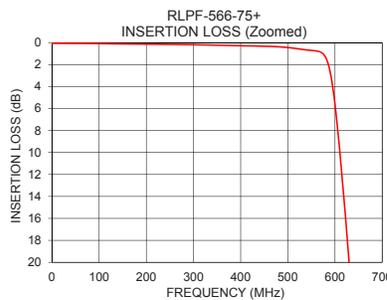
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (ns)
1	0.05	1.01	54	0.93
30	0.06	1.04	56	0.93
54	0.07	1.06	58	0.93
100	0.09	1.10	60	0.93
250	0.16	1.06	80	0.93
525	0.58	1.28	100	0.94
566	0.81	1.09	120	0.94
590	2.74	2.77	140	0.95
594	3.71	3.65	150	0.96
610	9.83	10.61	200	1.00
620	14.72	17.06	250	1.06
630	20.11	23.01	300	1.15
634	22.43	24.91	350	1.26
646	30.49	28.83	400	1.45
668	49.56	37.07	450	1.76
1218	39.64	51.79	500	2.33
1400	45.06	35.53	520	2.68
1750	71.19	32.90	540	3.26
2150	31.87	22.03	560	4.42
3000	45.08	40.27	566	5.15

### Typical Frequency Response



### +RoHS Compliant

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



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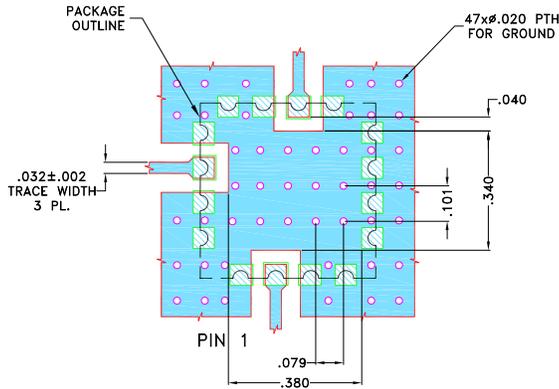


## Pad Connections

INPUT	2
OUTPUT	10
NOT CONNECTED	14
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

## Demo Board MCL P/N: TB-1071+ Suggested PCB Layout (PL-596)

SUGGESTED MOUNTING CONFIGURATION FOR  
CK1113 CASE STYLE "16FL05" PIN CODE



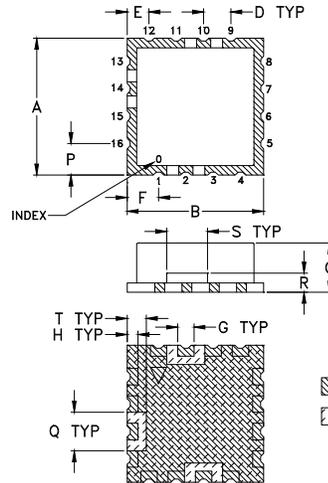
### NOTES:

- TRACE WIDTH IS SHOWN FOR FR4, IT-180A WITH DIELECTRIC THICKNESS .039"±.003". 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.

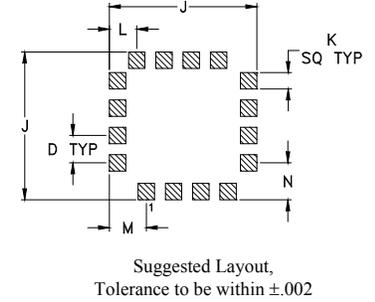
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

## Outline Drawing



## PCB Land Pattern



METALLIZATION  
 SOLDER RESIST

## Outline Dimensions ( inch / mm )

A	B	C	D	E	F	G	H	J	K
.500	.500	.220	.100	.080	.115	.060	.040	.540	.060
12.70	12.70	5.59	2.54	2.03	2.92	1.52	1.02	13.72	1.52
L	M	N	P	Q	R	S	T		Wt.
.100	.135	.135	.115	.140	.070	.150	.070		grams
2.54	3.43	3.43	2.92	3.56	1.78	3.81	1.78		1.2

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