

# Surface Mount Low Pass Filter

## RLPF-1520+

50Ω DC to 1520 MHz

### The Big Deal

- High rejection
- Fast roll-off
- Wide passband
- Miniature shielded package



CASE STYLE: CK605

### Product Overview

The RLPF-1520+ is a lowpass filter in a shielded package (size of 0.500" x 0.500" x 0.180") fabricated using SMT technology. Covering DC to 1520 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
Fast roll-off	Fast roll-off, this will attenuate frequencies closer to the passband with good rejection.
Good ultimate rejection	This enables the filters to attenuate spurious signals and reject harmonics for broadband frequency.
Small size, 0.500" x 0.500" x 0.180"	The small surface mount package enables the RLPF-1520+ to be used in compact designs.

#### 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.  
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



# Surface Mount Low Pass Filter

# RLPF-1520+

50Ω DC to 1520 MHz



CASE STYLE: CK605

### Features

- High rejection
- Fast roll-off
- Wide passband
- Miniature shielded package

### Applications

- Military-aircraft
- Marine communication

### Electrical Specifications at 25°C

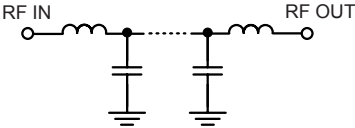
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	DC-F1	DC-1520	—	1.2	2.0	dB
	Freq. Cut-Off	F2	1620	—	3.0	—	dB
	VSWR	DC-F1	DC-1520	—	1.3	1.92	:1
Stop Band	Rejection Loss	F3-F4	1870-3200	20	31	—	dB
	VSWR	F3-F4	1870-3200	—	20	—	:1

### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	1.5W max.

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

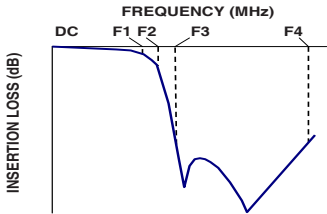
### Functional Schematic



### Typical Performance Data at 25°C

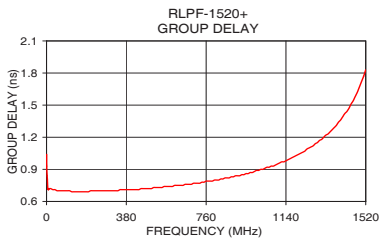
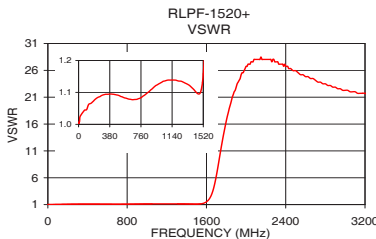
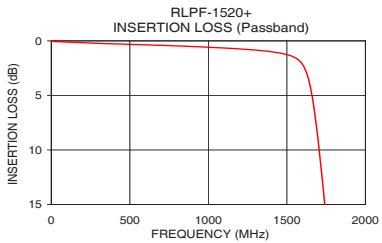
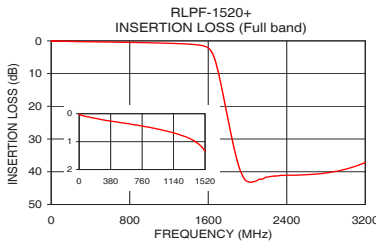
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	0.02	1.00	1	0.93
30	0.06	1.02	50	0.70
120	0.12	1.04	200	0.69
330	0.24	1.09	300	0.70
840	0.48	1.09	400	0.71
1400	1.00	1.12	500	0.72
1520	1.34	1.10	600	0.74
1620	2.73	1.85	700	0.77
1630	3.14	2.09	800	0.80
1680	6.92	4.62	850	0.82
1730	13.36	9.58	900	0.84
1780	20.77	14.74	1000	0.89
1850	30.99	20.22	1100	0.95
1870	33.60	21.46	1200	1.04
1900	37.14	22.87	1250	1.10
2000	42.97	26.74	1300	1.17
2250	41.38	28.03	1350	1.25
2500	41.02	25.94	1400	1.36
2850	40.16	23.18	1500	1.72
3200	37.16	21.73	1520	1.83

### Typical Frequency Response



### +RoHS Compliant

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



### Notes

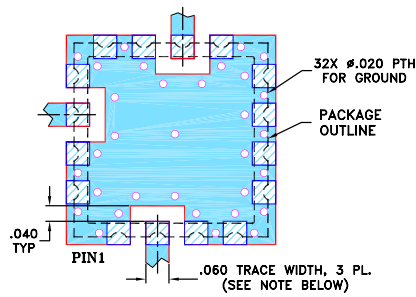
- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



## Pad Connections

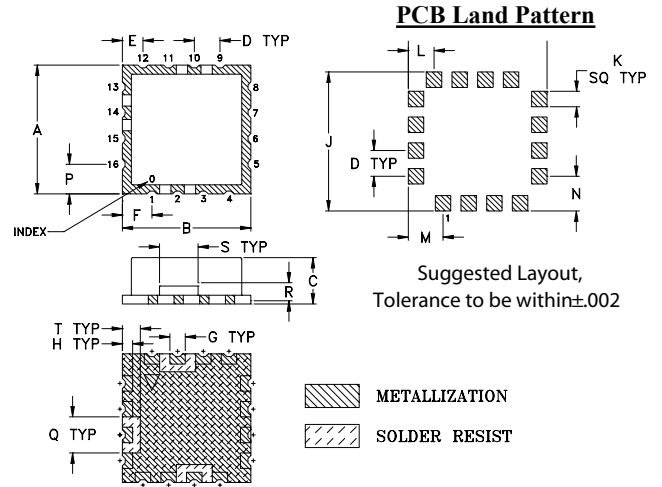
INPUT	2
OUTPUT	10
NOT CONNECTED	14
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

**Demo Board MCL P/N: TB-10+**  
**Suggested PCB Layout (PL-012)**



- NOTES: 1. TRACE WIDTH IS SHOWN FOR FR4 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

## Outline Drawing



## Outline Dimensions (Inch / mm)

A	B	C	D	E	F	G	H	J		
.500	.500	.180	.100	.080	.115	.060	.040	.540		
12.7	12.7	4.57	2.54	2.03	2.92	1.52	1.02	13.72		
	K	L	M	N	P	Q	R	S	T	wt.
	.060	.100	.135	.135	.115	.140	.070	.150	.070	grams
	1.52	2.54	3.43	3.43	2.92	3.56	1.78	3.81	1.78	1.0

### 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.  
 C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)