



## LUMPED LC SURFACE MOUNT

# Diplexer

## RDP-100-2R15+

50Ω DC to 2150 MHz (DC - 100 MHz, 950 - 2150 MHz)

### KEY FEATURES

- Low Insertion Loss, 0.5 dB Typ.
- High Stopband Insertion Loss in Low Pass with 60 dB Typ. and High Pass with 70dB Typ.
- Miniature shielded package
- Good Return Loss in Low Pass and High Pass 20 dB Typ.

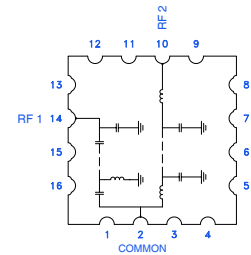


Generic photo used for illustration purposes only

### APPLICATIONS

- Aerospace
- Satellite

### FUNCTIONAL DIAGRAM



### PRODUCT OVERVIEW

Mini-Circuits' RDP-100-2R15+ is a low-pass + high-pass combination device. Low pass port is designed for DC to 100 MHz and high pass port is designed for 950 to 2150 MHz. Both low pass and high pass have high isolation and good return loss.

### ELECTRICAL SPECIFICATIONS<sup>1</sup> AT +25°C

Parameter		Function (Port)	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	Low Pass (RF COM-RF1)	DC - 100	—	0.5	1	dB
		High Pass (RF COM-RF2)	950 - 2150	—	0.5	1	
	Return Loss	Low Pass (RF1)	DC - 100	14	20	—	dB
High Pass (RF2)		950 - 2150	14	20	—		
Common (COM)		DC - 100 950 - 2150	14 14	20 20	— —		
Stop Band Rejection	Low Pass (RF COM-RF1)	350 - 950	20	30	—	dB	
		950 - 2150	50	60	—		
	High Pass (RF COM-RF2)	DC - 100 100 - 350	60 20	70 30	— —		

1. Tested in Evaluation Board P/N TB-RDP-1002R15+.

### ABSOLUTE MAXIMUM RATINGS<sup>2</sup>

Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power (RF COM) <sup>3</sup>	1.5 W
Input Power (RF1) <sup>3</sup>	1.5 W
Input Power (RF2) <sup>3</sup>	1.5 W
Max. DC Voltage	25 V
Max. Input Current	100 mA

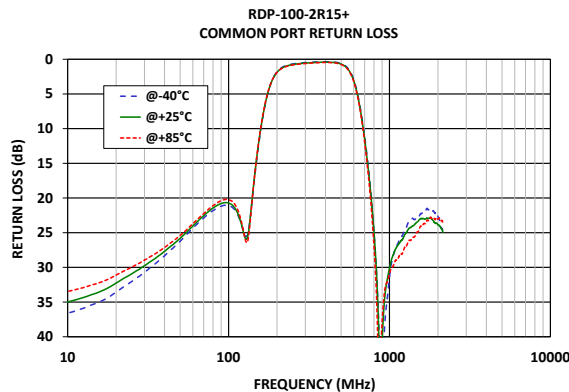
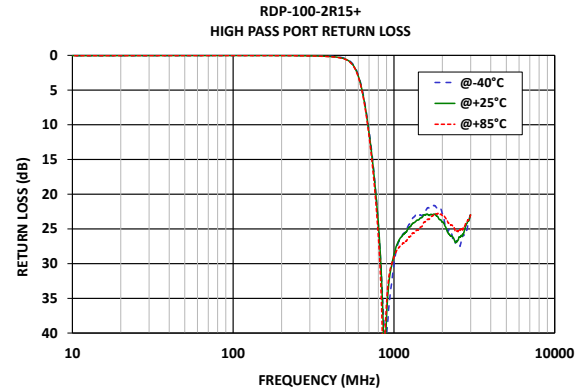
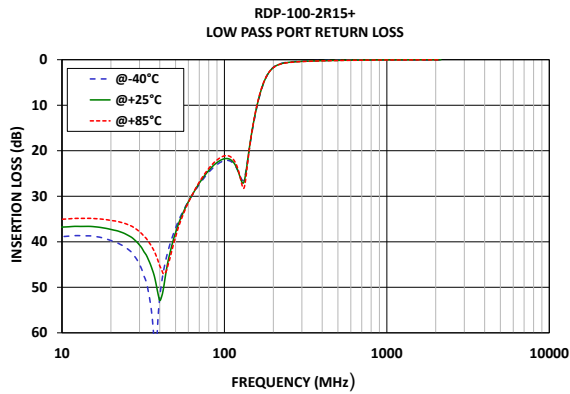
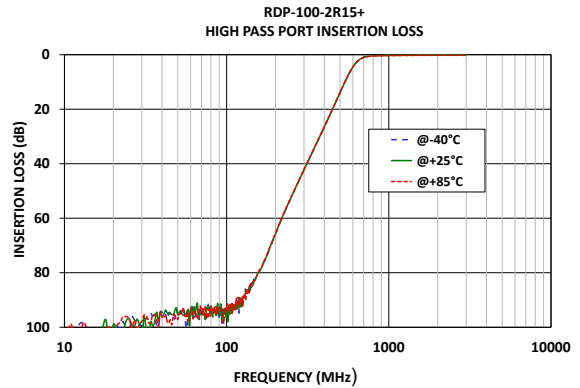
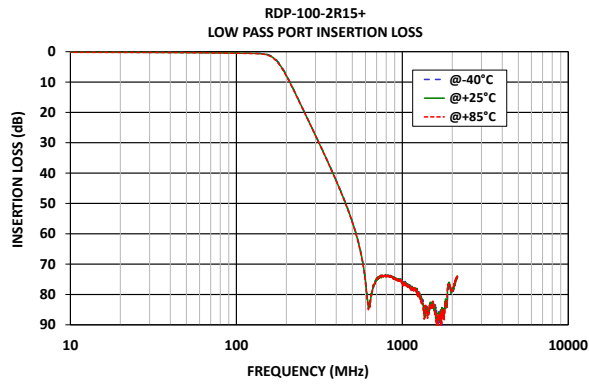
2. Permanent damage may occur if any of these limits are exceeded.

3. Power rating applies only to signals within the passband.





### TYPICAL PERFORMANCE GRAPHS





### FUNCTIONAL DIAGRAM

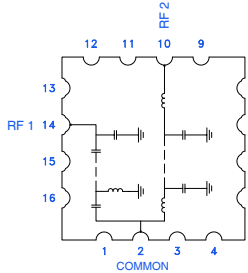


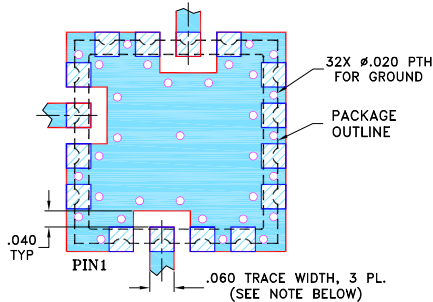
Figure 1. RDP-100-2R15+ Functional Diagram

### PAD DESCRIPTION

Port	Pad Number	Description
COMMON	2	Connects to Common Port
RF1	10	Connects to Low Pass Port
RF2	14	Connects to High Pass Port
GROUND	1,3-9,11,12,13,15,16	Connects to Ground on PCB, (See drawing PL-012)

### SUGGESTED PCB LAYOUT

SUGGESTED MOUNTING CONFIGURATION FOR CK605 CASE STYLE, "kg/h/16AM01" PIN CONNECTION

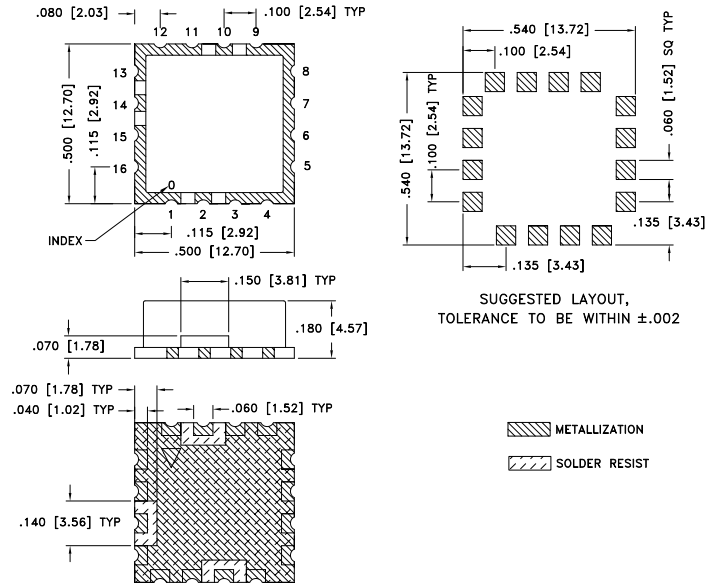


#### NOTES:

- 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.
  - BOTTOM SIDE OF THE BOTTOM IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
  - DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Figure 2. Suggested PCB Layout

### CASE STYLE DRAWING



Weight: 1.2 gram

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015

### PRODUCT MARKING\*: RDP-100-2R15

\*Marking may contain other features or characters for internal lot control.



LUMPED LC SURFACE MOUNT

# Diplexer

## RDP-100-2R15+

Mini-Circuits

50Ω DC to 2150 MHz (DC - 100 MHz, 950 - 2150 MHz)

ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASHBOARD.

[CLICK HERE](#)

Performance Data & Graphs	Data Graphs S-Parameter (S3P Files) Data Set (.zip file) De-embedded to device pads
Case Style	CK605 Lead Finish: Gold over Nickel Plate
RoHS Status	Compliant
Tape and Reel	F37
Suggested Layout for PCB Design	PL-012
Evaluation Board	TB-RDP-1002R15+ Gerber File
Environmental Rating	ENV03T2

### 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-Circuits' 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/terms/viewterm.html](http://www.minicircuits.com/terms/viewterm.html)

