

## Product Description

ATEK1202 is a connectorized wideband absorptive SPDT switch module with low loss and high isolation. Frequency of operation starts from low frequencies close to DC, goes up to 24 GHz.

RF Input and Outputs are internally matched to 50 ohms for ease of use.

Operating from positive supply voltage and for ease of use the switch state is set by CMOS compatible positive voltage control interface.

Switch is housed in custom milled metal enclosure. Custom package and module options are available upon request.

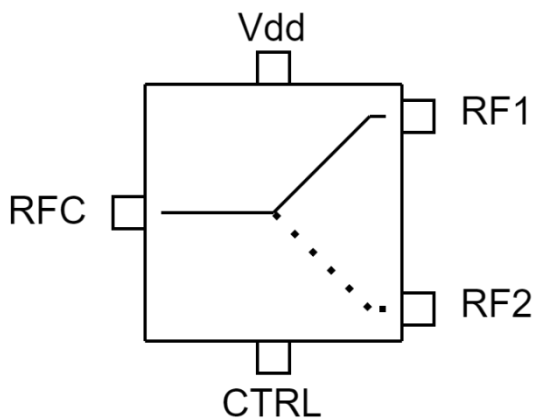
## Product Features

- Frequency Range: LF - 24 GHz
- Insertion Loss: 2.1 dB at 12 GHz
- IIP3: 46 dBm at 10 GHz
- Positive Supply
- 48.9x54x14.2 mm compact size

## Applications

- Wideband Receivers
- Telecommunication
- Test and Measurement
- SATCOM
- SDR

## Functional Block Diagram and Product Photo



## Electrical Specifications

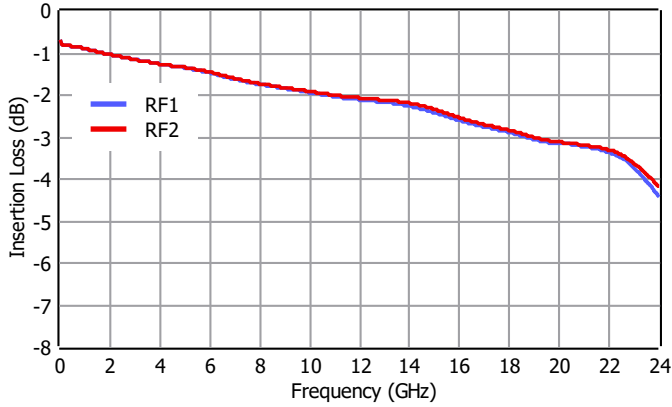
Conditions unless otherwise specified:  $V_{DD} = 5\text{ V}$ ,  $I_{DQ} = 5.5\text{ mA}$ , Typical,  $T = 25\text{ C}$ , CW.

Parameter		Min	Typ	Max	Units
Operational Frequency Range		LF		24	GHz
Insertion Loss	0.01 GHz		0.8		dB
	4 GHz		1.3		
	10 GHz		1.9		
	16 GHz		2.6		
	20 GHz		3.2		
	24 GHz		4.3		
Isolation	0.01 GHz		95		dB
	4 GHz		57		
	10 GHz		50		
	16 GHz		47		
	20 GHz		43		
	24 GHz		44		
Input Return Loss			20		dB
Output Return Loss			20		dB
Input IP3			45		dBm
Input P1dB			25		dBm
DC Supply Voltage (Vdd)			5		V
DC Supply Current (Vdd & CTRL at 5V)			5.5		mA
DC Supply Current (Vdd at 5V & CTRL at 3.3V)			7.5		mA
Control Voltage (CTRL)	Low		0		V
	High		5		
Operating Temperature		-40		85	°C

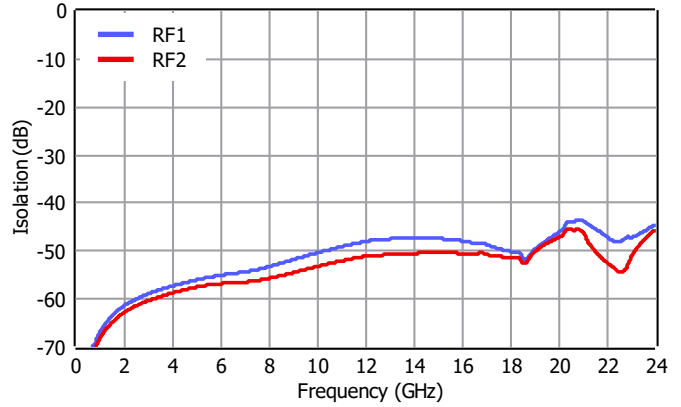
## Typical Performance Plots

Conditions unless otherwise specified:  $V_{DD} = 5V$ ,  $I_{DQ} = 5.5mA$ , Typical,  $T = 25C$ , CW.

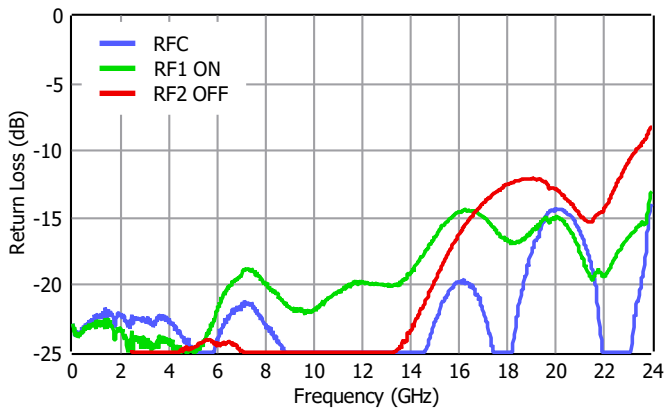
Insertion Loss



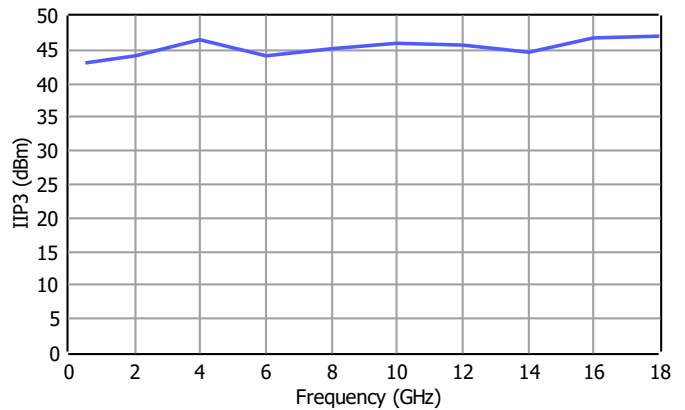
Isolation



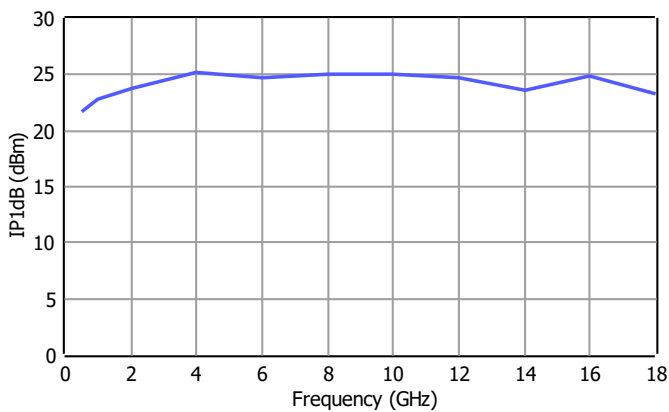
Return Loss



Input IP3



Input P1dB



## Control Interface

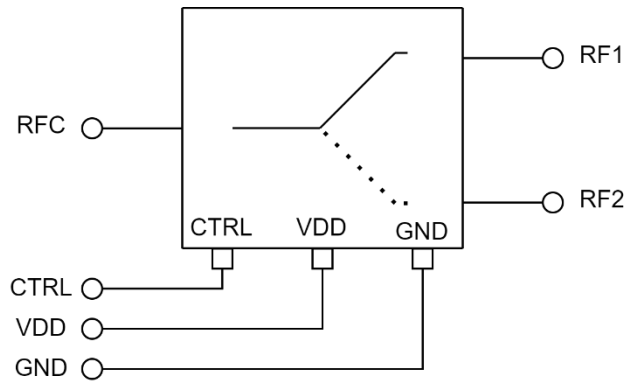
CTRL	Switch State
HIGH	RF1
LOW	RF2

## Applications Information

Signal entering from RFC goes to RF1 or RF2 depending on the switch state set by the user.

Vdd bias is 5 V and control voltages are CMOS compatible. Switch state can be set by switching control voltages between 0 V to 5 V. Operating the switch is done with positive voltage rails without the need for negative voltage levels.

Typical application schematic to operate the SPDT switch given below.

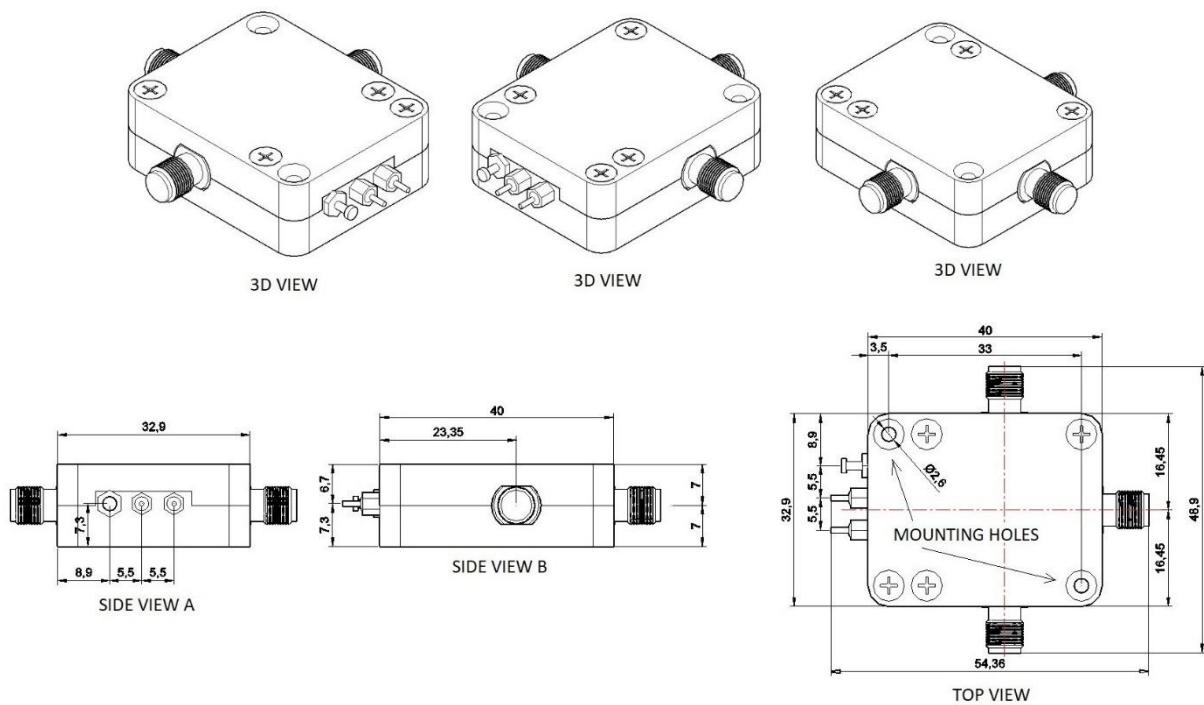


## Absolute Maximum Ratings

Parameter	Value/Range
Supply Voltage (Vdd)	TBD
RF Input Power	TBD
Storage Temperature	-55 to +125°C

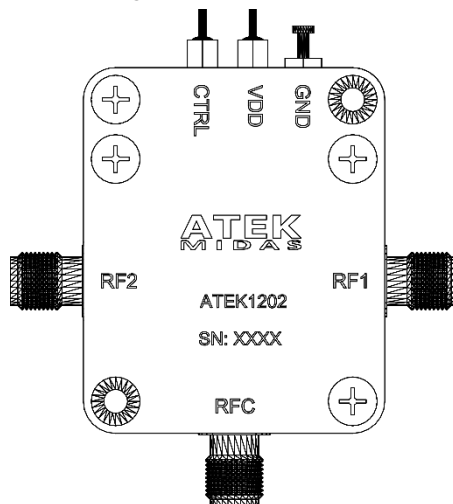
Operation of this device outside the parameter ranges given above may cause damage. These conditions should not be applied simultaneously.

## Mechanical and Marking Information



All dimensions are in mm.

2 mounting holes with 2.6 mm radius.



## Handling Precautions



Caution!  
ESD-Sensitive Device  
Handle Accordingly

## Contact Information

For the latest specifications, additional product information, support, and sales.

Web: [www.atekmidas.com](http://www.atekmidas.com)

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## Revisions

Revision No	Revision Date	Revision Reason	Section / Page No
1.0	02.01.2024	Initial Release	
1.1	09.01.2024	Format and Context Fixed	