

BDA Broadband Drop Amplifier

FEATURES

- 1 GHz Gallium Arsenide Technology
- 2.5 dB Noise Figure
- Patented Auto-Seize FFT F-Connector
- One, Two, or Four Port Versions
- Two-Way Capable
- LED Power Verification
- Local or Remote Powering
- Environmentally Hardened Design
- 6 kV Surge Resistant
- Current limited power supply



PRODUCT OVERVIEW

The BDA Broadband Telecommunications Drop Amplifier is a two-way 1 GHz amplifier designed for customer premise amplification. These amplifiers can be used to compensate for long drops and excessive splitting losses. Each BDA is housed within a robust aluminum die cast housing and utilizes the ARRIS FFT Auto-Seize F-Connector for maximum reliability.

Gallium Arsenide Technology

The BDA amplifier uses advanced Gallium Arsenide technology for improved distortion and noise performance. This technology provides improved distortion performance for both CTB and CSO distortions. Compared to silicon based amplifiers, GaAs distortion performance remains linear at significantly higher output levels.



Two-Way Capable

The BDA amplifier has built-in diplex filters for two-way operation. A passive return path is provided for return path continuity and enables the use of multiple broadband devices such as set-top terminals and cable modems. An active return path is provided for the BDA-**-*-AR-* models to overcome external splitting losses. The BDA is available with return split (42/52 MHz) diplex filters in passive return models, and traditional K-split (42/54 MHz) and N-split (85/104 MHz) diplex filters for the active return models. Please contact your ARRIS Account Representative for specific details.

Local or Remote Powering

The BDA can be powered locally or remotely via a UL-approved AC to DC power supply. A power inserter (BDP-100/PI) is available as an accessory item for remote powering applications. All BDA models include a 110/220 VAC power supply for ready powering during installation.

Surge Tolerant

The BDA amplifier is designed to meet the 6 kV IEEE C62.41-1991 Category B-3 Combination Wave at the input port. It is also designed to meet both 6 kV IEEE C62.41-1991 Category A-3 Ring Wave and 1 kV Combination Wave surge for all output ports, power supply transformer port, and power inserter ports. This surge tolerance enhances system reliability.

Indoor or Outdoor Applications

A weather seal and protective coating are provided so that the BDA amplifier may be used for indoor or outdoor applications.

RELATED PRODUCTS

CHP Chassis	Optical Patch Cords
Power Supplies	Optical Passives
Control Module	Installation Services

BDA-42-*-PR-R - SPECIFICATIONS

Forward Specifications		Passband: 52-1000 MHz					
Specification	Freq. (MHz)	BDA-42-1-PR-R		BDA-42-2-PR-R		BDA-42-4-PR-R	
		Min	Nom	Min	Nom	Min	Nom
Gain (dB)	52-1000	13.2	15.0	10.1	11.0	6.2	7.0
Input Return Loss (dB)	52-1000	18	20	18	20	18	20
Output Return Loss (dB)	52-1000	18	20	18	20	18	20
Output Port to Port Isolation (dB)	52-1000	—	—	24	27	25	27
Flatness, (dB max)	52-1000	± 0.8					
Distortions (dB min)							
Channel Loading Output Levels							
77 Channels (550 MHz)		27		23		19	
110 Channels (750 MHz)		24		20		16	
CTB (dBc min)		70					
XMOD (dB min)		70					
CSO (dBc min)		60					
Noise Figure (dB max)		2.5		3.0		3.0	
RFI Shielding (dB min)		100					
Hum Modulation (dBc)		70					

Return Specifications		Passband: 5-42 MHz					
Specification		Max	Nom	Max	Nom	Max	Nom
Insertion Loss (dB)	5-42	1.7	1.0	5.0	4.4	8.5	8.0
Input Return Loss (dB)	5-42	20	22	20	22	20	22
Output Return Loss (dB)	5-42	20	22	20	22	20	22
Output Port to Port Isolation (dB)	5-42	—	—	23	27	25	27

BDAPS-12-US-E - SPECIFICATIONS

Parameter	Specification	Comments
Input and Output Connectors	F-Connector	SCTE compliant, FFT P-series auto-seize
Nominal Impedance	75 Ω	
AC Power Supply Voltage Input	110/220 VAC nominal	
Amplifier DC Input Voltage	12 VDC nominal	
Power Consumption	3W	Maximum
Surge Withstand	BDA input port: 6 kV - IEEE C62.41-1991 Cat. B-3 Combination Wave, 3 kA BDA output port(s): IEEE C62.41-1991 Cat. A-3 Ring Wave, 6 kV, 200 A and 1 kV Combination Wave (10x)	
Housing Dimensions	20 x 45 x 56 mm	Height x Width x Depth
Weight	1.1 lb (0.5 kg)	

Environmental Specifications

Pressure Seal	15 psi
Operating Temperature	-40°C to +60°C (-40°F to +140°F)

BDA-42-*--AR-R - SPECIFICATIONS

Forward Specifications		Passband: 54-1000 MHz			
Specification	Freq. (MHz)	BDA-42-1-AR-R		BDA-42-4-AR-R	
		Min	Nom	Min	Nom
Gain (dB)	54-1000	13.6	15.0	6.7	7.5
Input Return Loss (dB)	54-1000	18	20	18	20
Output Return Loss (dB)	54-1000	18	20	18	20
Output Port to Port Isolation (dB)	54-1000	—	—	25	27
Flatness, (dB max)	54-1000	± 1.0			
Distortions (dB min)					
Channel Loading Output Levels					
77 Channels (550 MHz)		27		19	
110 Channels (750 MHz)		24		16	
CTB (dBc min)		75			
XMOD (dB min)		75			
CSO (dBc min)		62			
Noise Figure (dB max)		3.5		3.5	
RFI Shielding (dB min)		100			
Hum Modulation (dBc)		75			

Return Specifications		Passband: 5-42 MHz			
Specification		Min	Nom	Min	Nom
Gain (dB)	5-42	9.2	10.0	1.2	2.5
Input Return Loss (dB)	5-42	20	22	18	22
Output Return Loss (dB)	5-42	20	22	18	22
Output Port to Port Isolation (dB)	5-42	—	—	25	27

BDAPS-18-US-E - SPECIFICATIONS

Parameter	Specification	Comments
Input and Output Connectors	F-Connector	SCTE Compliant, FFT P-series auto-seize
Nominal Impedance	75 Ω	
AC Power Supply Voltage Input	110/220 VAC nominal	
Amplifier DC Input Voltage	18 VDC Nominal	
Power Consumption	9W	Maximum
Surge Protection	Input port: 6 kV - IEEE C62.41-1991 Cat. B-3 Combination Wave, 3 kA Output port(s): IEEE C62.41-1991 Cat. A-3 Ring Wave, 6 kV, 200 A and 1 kV Combination Wave (10x)	
Dimension	20 x 45 x 56 mm	
Weight	1.1 lb (0.5 kg)	

Environmental Specifications	
Pressure Seal	15 psi
Operating Temperature	-40°C to +60°C (-40°F to +140°F)

BDA-85-*--AR-R - SPECIFICATIONS

Forward Specifications		Passband: 104-1000 MHz			
Specification	Freq. (MHz)	BDA-85-1-AR-R		BDA-85-4-AR-R	
		Min	Nom	Min	Nom
Gain (dB)	104-1000	13.6	15.0	6.7	7.5
Input Return Loss (dB)	104-1000	18	20	18	20
Output Return Loss (dB)	104-1000	18	20	18	20
Output Port to Port Isolation (dB)	104-1000	—	—	25	27
Flatness, (dB max)	104-1000	± 1.0			
Distortions (dB min)					
Channel Loading Output Levels					
77 Channels (550 MHz)		27		19	
110 Channels (750 MHz)		24		16	
CTB (dBc min)		75			
XMOD (dB min)		75			
CSO (dBc min)		62			
Noise Figure (dB max)		3.5		3.5	
RFI Shielding (dB min)		100			
Hum Modulation (dBc)		75			

Return Specifications		Passband: 5-85 MHz			
Specification		Min	Nom	Min	Nom
Gain (dB)	5-85	9.2	10.0	1.0	2.5
Input Return Loss (dB)	5-85	20	22	18	20
Output Return Loss (dB)	5-85	20	22	18	20
Output Port to Port Isolation (dB)	5-85	—	—	25	27

BDAPS-18-US-E - SPECIFICATIONS

Parameter	Specification	Comments
Input and Output Connectors	F-Connector	SCTE Compliant, FFT P-series auto-seize
Nominal Impedance	75 Ω	
AC Power Supply Voltage Input	110/220 VAC nominal	
Amplifier DC Input Voltage	18 VDC Nominal	
Power Consumption	9W	Maximum
Surge Protection	Input port: 6 kV - IEEE C62.41-1991 Cat. B-3 Combination Wave, 3 kA Output port(s): IEEE C62.41-1991 Cat. A-3 Ring Wave, 6 kV, 200 A and 1 kV Combination Wave (10x)	
Dimension	20 x 45 x 56 mm	
Weight	1.1 lb (0.5 kg)	

Environmental Specifications	
Pressure Seal	15 psi
Operating Temperature	-40°C to +60°C (-40°F to +140°F)

Figure 1: BDA Local Powering Configurations

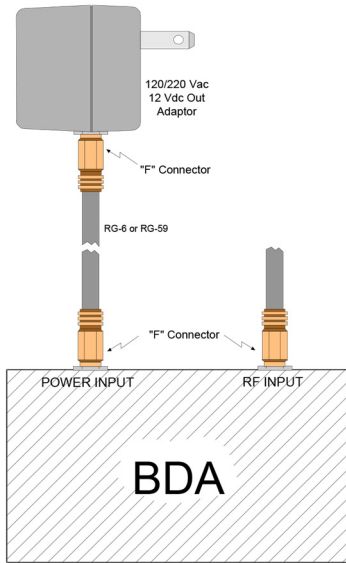
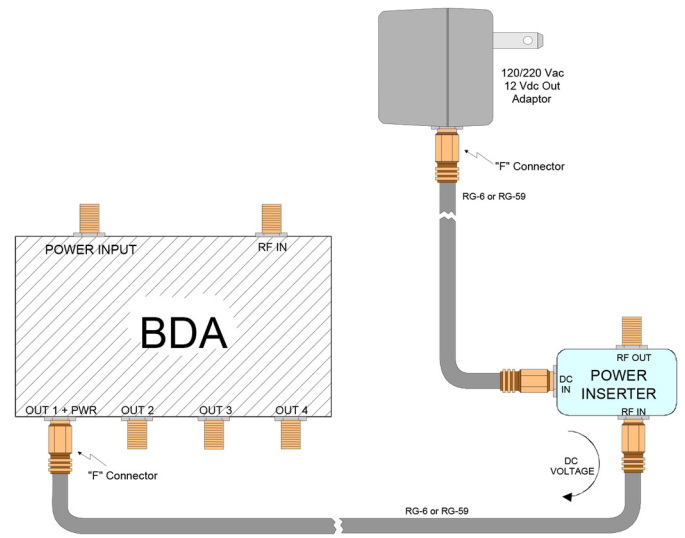


Figure 2: BDA Remote Powering Configuration



ORDERING INFORMATION

Model Name	Part #	Description
BDA-42-1-PS-PR-R	1510265-001	BDA-42-1-PS-PR-R - 1GHz BDA, 42/54, With 110/220V PS, 1 Output, Passive Return, F-connector, ROHS
BDA-42-4-PS-PR-R	1510265-002	BDA-42-4-PS-PR-R - 1GHz BDA, 42/54, With 110/220V PS, 4 Output, Passive Return, F-connector, ROHS
BDA-42-2-PS-PR-R	1510265-003	BDA-42-2-PS-PR-R - 1GHz BDA, 42/54, With 110/220V PS, 2 Output, Passive Return, F-connector, ROHS
BDA-85-1-PS-AR-R	1510265-004	BDA-85-1-PS-AR-R - 1GHz BDA, 85/104MHz, With 110/220V PS, 1 Output, Active Return, F-connector, ROHS
BDA-85-4-PS-AR-R	1510265-005	BDA-85-4-PS-AR-R - 1GHz BDA, 85/104MHz, With 110/220V PS, 4 Output, Active Return, F-connector, ROHS
BDA-42-1-PS-AR-R	1510265-006	BDA-42-1-PS-AR-R - 1GHz BDA, 42/54MHz, With 110/220V PS, 1 Output, Active Return, F-connector, ROHS
BDA-42-4-PS-AR-R	1510265-007	BDA-42-4-PS-AR-R - 1GHz BDA, 42/54MHz, With 110/220V PS, 4 Output, Active Return, F-connector, ROHS
BDAPS-18-US-E	1510265-008	BDAPS-18-US-E - 110/220 Volt U.S. Style 18V BDA Power Supply without Cable, Efficient
BDAPS-12-US-E	1510265-009	BDAPS-12-US-E - 110/220 Volt U.S. Style 12V BDA Power Supply without Cable, Efficient
BDP-100/PI	463653-001-00	Power Inserter, 1 GHz

Note: Specifications are subject to change without notice.

Customer Care

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

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