

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

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 CommScope FFT Auto-Seize F-Connector for maximum reliability.

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 CommScope 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.

Figure 1: BDA Local Powering Configurations

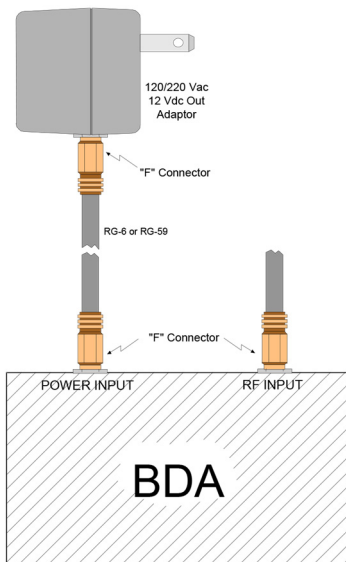
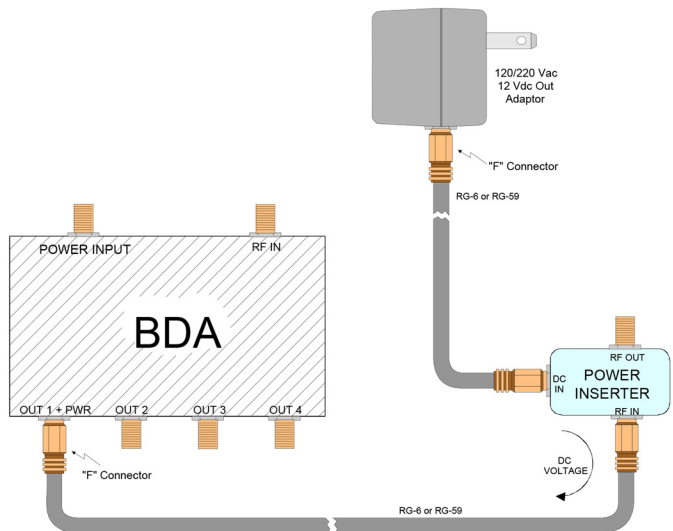


Figure 2: BDA Remote Powering Configuration



BDA-42-* -PR-R SPECIFICATIONS

Characteristics	Specification
Forward Path	
Passband	52 MHz to 1000 MHz
Gain	
BDA-42-1-PR-R	13.2 dB (min), 15.0 dB (nom)
BDA-42-2-PR-R	10.1 dB (min), 11.0 dB (nom)
BDA-42-4-PR-R	6.2 dB (min), 7.0 dB (nom)
Input Return Loss (All Models)	18 dB (min), 20 dB (nom)
Output Return Loss (All Models)	18 dB (min), 20 dB (nom)
Output Port to Port Isolation	
BDA-42-1-PR-R	—
BDA-42-2-PR-R	24 dB (min), 27 dB (nom)
BDA-42-4-PR-R	25 dB (min), 27 dB (nom)
Flatness (All Models)	± 0.8 dB (max)
Channel Loading Output Levels	
Channel Loading Output Levels, 77 Channels (550 MHz)	
BDA-42-1-PR-R	27 dB
BDA-42-2-PR-R	23 dB
BDA-42-4-PR-R	19 dB
Channel Loading Output Levels, 110 Channels (750 MHz)	
BDA-42-1-PR-R	24 dB
BDA-42-2-PR-R	20 dB
BDA-42-4-PR-R	16 dB
CTB (All Models)	70 dBc (min)
XMOD (All Models)	70 dB (min)
CSO (All Models)	60 dBc (min)
Noise Figure	
BDA-42-1-PR-R	2.5 dB (max)
BDA-42-2-PR-R	3.0 dB (max)
BDA-42-4-PR-R	3.0 dB (max)
RFI Shielding (All Models)	100 dB (min)
Hum Modulation (All Models)	70 dBc
Return Path	
Passband	5 MHz to 42 MHz
Insertion Loss	
BDA-42-1-PR-R	1.7 dB (max), 1.0 dB (nom)
BDA-42-2-PR-R	5.0 dB (max), 4.4 dB (nom)
BDA-42-4-PR-R	8.5 dB (max), 8.0 dB (nom)
Input Return Loss (All Models)	20 dB (max), 22 dB (nom)
Output Return Loss (All Models)	20 dB (max), 22 dB (nom)
Output Port to Port Isolation	
BDA-42-1-PR-R	—
BDA-42-2-PR-R	23 dB (max), 27 dB (nom)
BDA-42-4-PR-R	25 dB (max), 27 dB (nom)

BDAPS-12-US-E SPECIFICATIONS

Characteristics	Specification
Physical	
Dimensions	0.8 in H x 1.8 in W x 2.2 in D (2.0 cm x 4.6 cm x 5.6 cm)
Weight	1.1 lb (0.5 kg)
Input and Output Connectors	F-Connector (SCTE compliant, FFT P-series auto-seize)
Environmental	
Operating Temperature Range	-40° to +60°C (-40° to +140°F)
Pressure Seal	15 PSI
Power Requirements	
Nominal Impedance	75 Ω
AC Power Supply Voltage Input	110/220 VAC nominal
Amplifier DC Input Voltage	12 VDC nominal
Power Consumption	3 W (max)
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)

BDA-42-* -AR-R SPECIFICATIONS

Characteristics	Specification
Forward Path	
Passband	54 MHz to 1000 MHz
Gain	
BDA-42-1-AR-R	13.6 dB (min), 15.0 dB (nom)
BDA-42-4-AR-R	6.7 dB (min), 7.5 dB (nom)
Input Return Loss (All Models)	18 dB (min), 20 dB (nom)
Output Return Loss (All Models)	18 dB (min), 20 dB (nom)
Output Port to Port Isolation	
BDA-42-1-AR-R	—
BDA-42-4-AR-R	25 dB (min), 27 dB (nom)
Flatness (All Models)	± 1.0 dB (max)
Channel Loading Output Levels	
Channel Loading Output Levels, 77 Channels (550 MHz)	
BDA-42-1-AR-R	27 dB
BDA-42-4-AR-R	19 dB
Channel Loading Output Levels, 110 Channels (750 MHz)	
BDA-42-1-AR-R	24 dB
BDA-42-4-AR-R	16 dB
CTB (All Models)	75 dBc (min)
XMOD (All Models)	75 dB (min)
CSO (All Models)	62 dBc (min)
Noise Figure (All Models)	3.5 dB (max)
RFI Shielding (All Models)	100 dB (min)
Hum Modulation (All Models)	75 dBc
Return Path	
Passband	5 MHz to 42 MHz
Gain	
BDA-42-1-AR-R	9.2 dB (min), 10.0 dB (nom)
BDA-42-4-AR-R	1.2 dB (min), 2.5 dB (nom)
Input Return Loss	
BDA-42-1-AR-R	20 dB (min), 22 dB (nom)
BDA-42-4-AR-R	18 dB (min), 22 dB (nom)
Output Return Loss	
BDA-42-1-AR-R	20 dB (min), 22 dB (nom)
BDA-42-4-AR-R	18 dB (min), 22 dB (nom)
Output Port to Port Isolation	
BDA-42-1-AR-R	—
BDA-42-4-AR-R	25 dB (max), 27 dB (nom)

BDAPS-18-US-E SPECIFICATIONS

Characteristics	Specification
Physical	
Dimensions	0.8 in H x 1.8 in W x 2.2 in D (2.0 cm x 4.6 cm x 5.6 cm)
Weight	1.1 lb (0.5 kg)
Input and Output Connectors	F-Connector (SCTE compliant, FFT P-series auto-seize)
Environmental	
Operating Temperature Range	-40° to +60°C (-40° to +140°F)
Pressure Seal	15 PSI
Power Requirements	
Nominal Impedance	75 Ω
AC Power Supply Voltage Input	110/220 VAC nominal
Amplifier DC Input Voltage	18 VDC nominal
Power Consumption	9 W (max)
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)

BDA-85-*-AR-R SPECIFICATIONS

Characteristics	Specification
Forward Path	
Passband	104 MHz to 1000 MHz
Gain	
BDA-85-1-AR-R	13.6 dB (min), 15.0 dB (nom)
BDA-85-4-AR-R	6.7 dB (min), 7.5 dB (nom)
Input Return Loss (All Models)	18 dB (min), 20 dB (nom)
Output Return Loss (All Models)	18 dB (min), 20 dB (nom)
Output Port to Port Isolation	
BDA-85-1-AR-R	—
BDA-85-4-AR-R	25 dB (min), 27 dB (nom)
Flatness (All Models)	± 1.0 dB (max)
Channel Loading Output Levels	
Channel Loading Output Levels, 77 Channels (550 MHz)	
BDA-85-1-AR-R	27 dB
BDA-85-4-AR-R	19 dB
Channel Loading Output Levels, 110 Channels (750 MHz)	
BDA-85-1-AR-R	24 dB
BDA-85-4-AR-R	16 dB
CTB (All Models)	75 dBc (min)
XMOD (All Models)	75 dB (min)
CSO (All Models)	62 dBc (min)
Noise Figure (All Models)	3.5 dB (max)
RFI Shielding (All Models)	100 dB (min)
Hum Modulation (All Models)	75 dBc
Return Path	
Passband	5 MHz to 85 MHz
Gain	
BDA-85-1-AR-R	9.2 dB (min), 10.0 dB (nom)
BDA-85-4-AR-R	1.0 dB (min), 2.5 dB (nom)
Input Return Loss	
BDA-85-1-AR-R	20 dB (min), 22 dB (nom)
BDA-85-4-AR-R	18 dB (min), 20 dB (nom)
Output Return Loss	
BDA-85-1-AR-R	20 dB (min), 22 dB (nom)
BDA-85-4-AR-R	18 dB (min), 20 dB (nom)
Output Port to Port Isolation	
BDA-85-1-AR-R	—
BDA-85-4-AR-R	25 dB (max), 27 dB (nom)

BDAPS-18-US-E SPECIFICATIONS

Characteristics	Specification
Physical	
Dimensions	0.8 in H x 1.8 in W x 2.2 in D (2.0 cm x 4.6 cm x 5.6 cm)
Weight	1.1 lb (0.5 kg)
Input and Output Connectors	F-Connector (SCTE compliant, FFT P-series auto-seize)
Environmental	
Operating Temperature Range	-40° to +60°C (-40° to +140°F)
Pressure Seal	15 PSI
Power Requirements	
Nominal Impedance	75 Ω
AC Power Supply Voltage Input	110/220 VAC nominal
Amplifier DC Input Voltage	18 VDC nominal
Power Consumption	9 W (max)
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)

ORDERING INFORMATION

Model Name	Part Number	Description
BDA-42-1-PS-PR-R	1510265-001	BDA-42-1-PS-PR-R: 1 GHz 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: 1 GHz 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: 1 GHz 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: 1 GHz 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: 1 GHz 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: 1 GHz 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: 1 GHz 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

RELATED PRODUCTS

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

Contact Customer Care for product information and sales:

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

COMMScope®

Note: Specifications are subject to change without notice.

Copyright Statement: © 2022 CommScope, Inc. All rights reserved. ARRIS and the ARRIS logo are trademarks of CommScope, Inc. and/or its affiliates. All other trademarks are the property of their respective owners. No part of this content may be reproduced in any form or by any means or used to make any derivative work (such as translation, transformation, or adaptation) without written permission from CommScope, Inc and/or its affiliates ("CommScope"). CommScope reserves the right to revise or change this content from time to time without obligation on the part of CommScope to provide notification of such revision or change.

1514722_Broadband Drop Amplifier_DS_RevA