

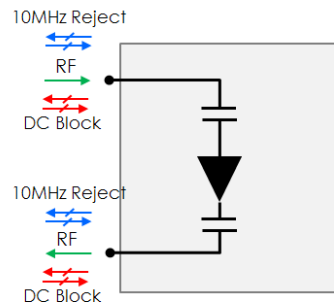
L-band Amplifiers



The A-VGAL1- 3011 to 3015 series are variable gain L-band (850-2150MHz) amplifiers with 0 to 30dB gain settable in 1dB gain steps with a built in regulator. The unit is powered via the RF cable requiring 8-18V

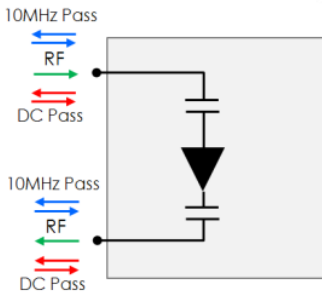
These components are available with the following RF connector options: 50 Ω SMA, N-type, BNC and 75 Ω BNC or F-type.

Vector Diagrams



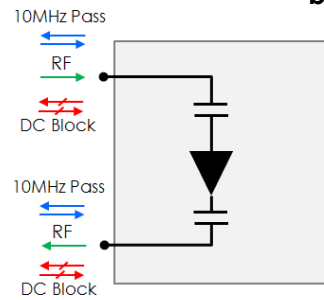
3011

All ports DC & 10MHz blocked



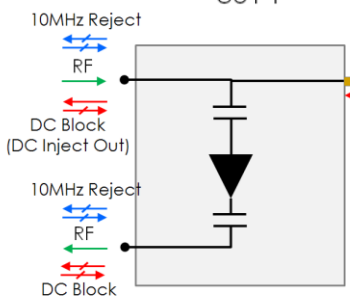
3014

All ports DC & 10 MHz pass



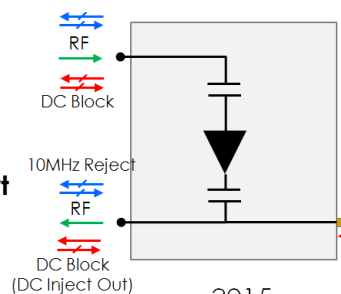
3013

All ports DC blocked with 10 MHz pass



3012

**DC & 10MHz block
DC injection, RF i/p port**



3015

**DC & 10MHz block
DC injection, RF o/p port**



RESILIENCE



RELIABILITY



RF PERFORMANCE



CUSTOM BUILD

A-VGAL1- 3011 to 3015

L-band Gain Block Amplifiers



Typical performance over L-band operation, 850MHz to 2150MHz

Model Number	Gain (dB)	Gain vs. Frequency variation (dB)		Input return loss (dB)		Output return loss (dB)		1dB GCP (dBm) *		IP3 (dBm)	NF (dB)
	Typical	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typical	Typical

Model 3011 - DC and 10MHz Block

A-VGAL1-3011-S5S5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3011-N5N5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3011-B5B5	0-30dB	±1dB	±1.4dB	20	15	20	15	15	12	30	8
A-VGAL1-3011-B7B7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
A-VGAL1-3011-F7F7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8

Model 3012 – DC and 10MHz Block with DC inject, RF i/p port

A-VGAL1-30012-S5S5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3012-N5N5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3012-B5B5	0-30dB	±1dB	±1.4dB	20	15	20	15	15	12	30	8
A-VGAL1-3012-B7B7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
A-VGAL1-3012-F7F7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8

Model 3015 – DC and 10MHz Block with DC inject, RF o/p port

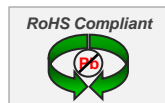
A-VGAL1-30015-S5S5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3015-N5N5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3015-B5B5	0-30dB	±1dB	±1.4dB	20	15	20	15	15	12	30	8
A-VGAL1-3015-B7B7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
A-VGAL1-3015-F7F7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8

* 1dB GCP measured at both Max and Min attenuation



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A-VGAL1- 3011 to 3015

L-band Gain Block Amplifiers



Typical performance over L-band operation, 850MHz to 2150MHz

Model Number	Gain (dB)	Gain vs. Frequency variation (dB)		Input return loss (dB)		Output return loss (dB)		1dB GCP (dBm) *		IP3 (dBm)	NF (dB)
		Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.		

Model 3013 – DC Block and 10MHz Pass

A-VGAL1-3013-S5S5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3013-N5N5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3013-B5B5	0-30dB	±1dB	±1.4dB	20	15	20	15	15	12	30	8
A-VGAL1-3013-B7B7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
A-VGAL1-3013-F7F7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8

Model 3014 – DC and 10MHz Pass

A-VGAL1-3014-S5S5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3014-N5N5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3014-B5B5	0-30dB	±1dB	±1.4dB	20	15	20	15	15	12	30	8
A-VGAL1-3014-B7B7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
A-VGAL1-3014-F7F7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8

Maximum acceptable operating parameters for reliable and safe operation

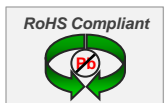
Parameter	Value	Comment
Input RF power	+24 dBm (40mW)	Max total RF power
Max voltage: RF ports	24V	Any RF Port
Max DC current	500mA	For DC Pass and DC Inject
Operating temperature	-10 to 65°C	Indoor use only
Storage Temperature	-20°C to +85°C	
Humidity	85%	Non-condensing
Altitude	10,000 feet	Above Mean Sea Level

! Operation beyond these limits may cause instantaneous and permanent damage.



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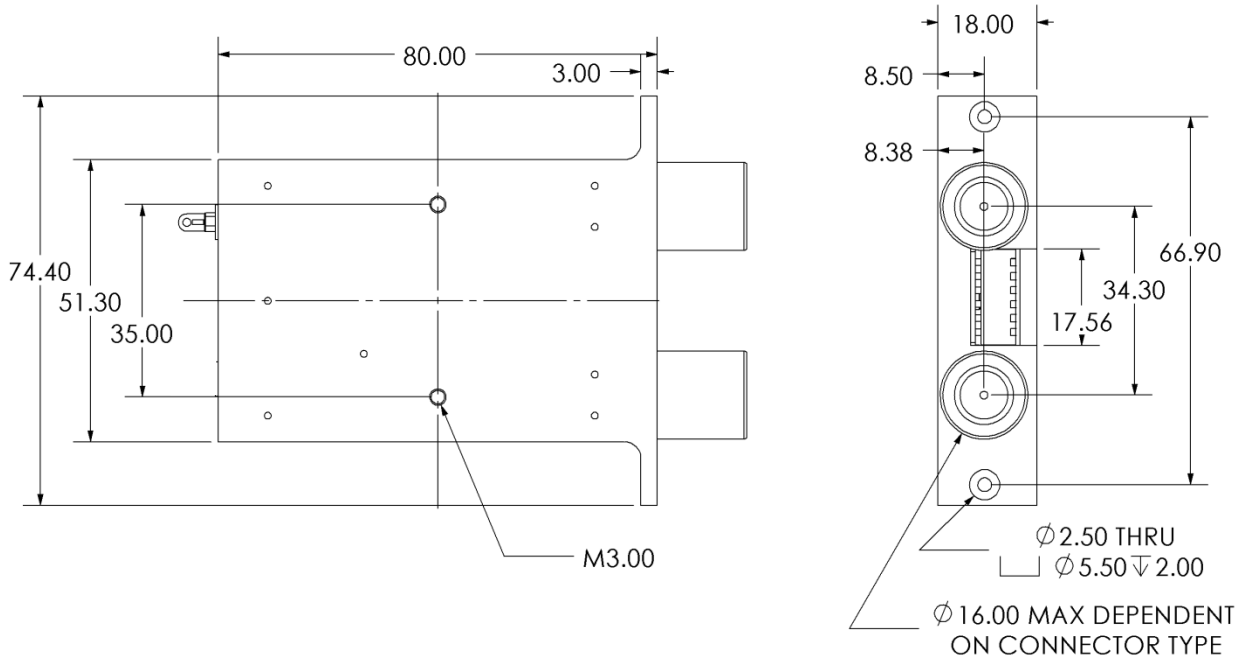
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A-VGAL1- 3011 to 3015

L-band Gain Block Amplifiers



Physical dimensions and appearance



Gain Setting: Model numbers A-VGAL1-3011-3015

Switch settings	1	2	3	4	5	6	Other features
Attenuation	16	8	4	2	1	n/a	Attenuation settings when the selected switch is at ON state
DC Injection	n/a	n/a	n/a	n/a	n/a	0 for DC OFF 1 for DC ON	Options 3012 & 3015 only
Max Gain	1	1	1	1	1	n/a	Max gain (0dB attenuation setting)
Min gain	0	0	0	0	0	n/a	Min gain (31dB attenuation setting)

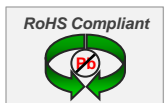
Switch ON and OFF refer to logic state 1 and 0 respectively.

The ON position is printed on the switch.



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A-VGAL1- 3011 to 3015



L-band Gain Block Amplifiers

Alternative L-band Gain Block Amplifiers

Model Numbers	Bias Option*	Freq vs. Gain	Gain Options (dB)	Other features
3011	In-Line	Flat	0 to 30	DC block and 10MHz Block on all ports
3012, 3015	In-Line	Flat	0 to 30	DC block and 10MHz Block on all ports with LNB inject
3013	In-Line	Flat	0 to 30	DC block and 10MHz pass on all ports
3014	In-Line	Flat	0 to 30	DC Pass and 10MHz Pass on all ports
3016	External	Flat	0 to 30	DC block and 10MHz Block on all ports
3017, 3020	External	Flat	0 to 30	DC block and 10MHz Block on all ports with LNB inject
3018	External	Flat	0 to 30	DC Block and 10MHz Pass on all ports
3019	External	Flat	0 to 30	DC Pass and 10MHz Pass on all ports



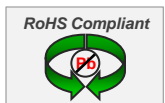
Bias TEE Range available

Model Number	Frequency (MHz)	DC rating	Other features
TEEB4-4003-B5B5	850 to 2150	48V / 5 A	10MHz pass
TEEB4-4004-B5B5	850 to 2150	28V / 500 mA	10MHz reject (25dB)
TEEB4-4005-B5B5	850 to 2150	28V / 500 mA	10MHz block (40dB)
TEEB4-4006-B5B5	850 to 2150	28V / 500 m A	10MHz pass
TEEB4-4007-B5B5	850 to 2150	28V / 7 A	10MHz is not characterised



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