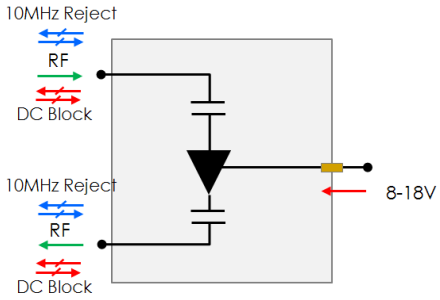
A-VGAL1-3016 to 3020

L-band Amplifiers

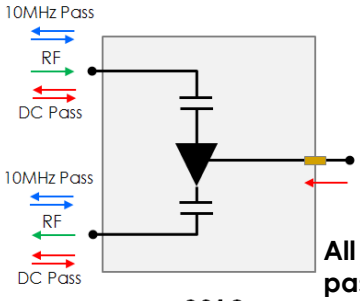
The A-VGAL1-3016 to 3020 series are variable gain L-band (850-2150MHz) amplifiers with 0 to 30dB gain settable in 1dB gain steps with a built in regulator. The unit requires an external 8 to 18V source.

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

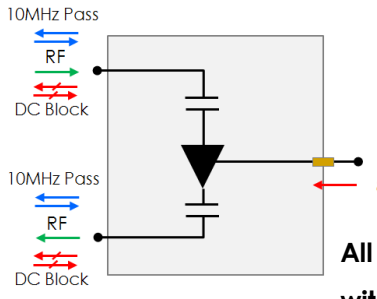
Vector Diagrams



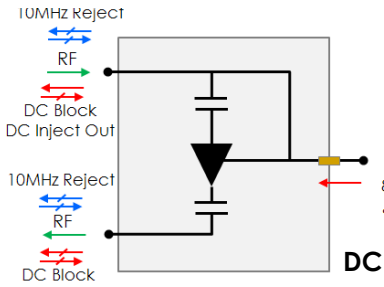
3016 **All ports DC & 10MHz blocked**



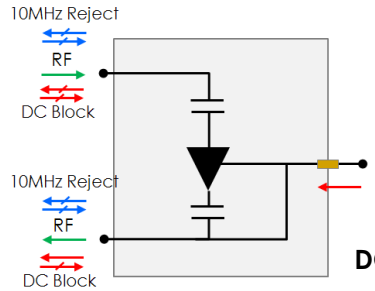
3019 **All ports DC & 10 MHz pass**



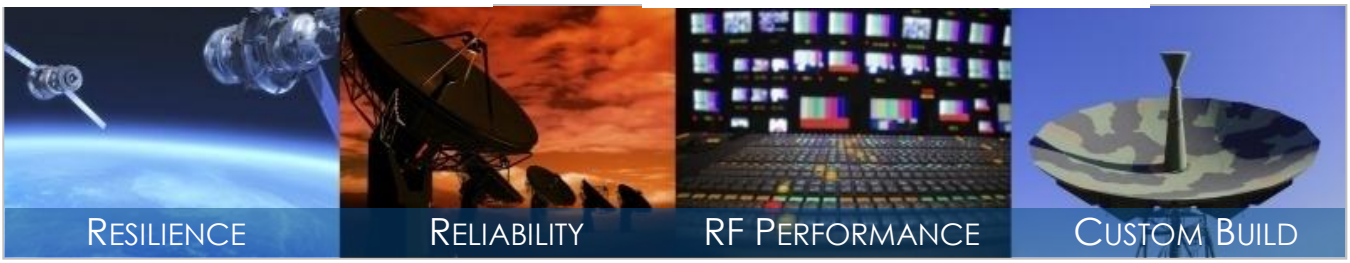
3018 **All ports DC blocked with 10 MHz pass**



3017 **DC & 10MHz block DC injection, RF i/p port**



3020 **DC & 10MHz block DC injection, RF o/p port**



A-VGAL1-3016 to 3020

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 3016 - DC and 10MHz Block											
A-VGAL1-3016-S5S5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3016-N5N5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3016-B5B5	0-30dB	±1dB	±1.4dB	20	15	20	15	15	12	30	8
A-VGAL1-3016-B7B7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
A-VGAL1-3016-F7F7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
Model 3017 – DC and 10MHz Block with DC inject, RF i/p port											
A-VGAL1-3017-S5S5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3017-N5N5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3017-B5B5	0-30dB	±1dB	±1.4dB	20	15	20	15	15	12	30	8
A-VGAL1-3017-B7B7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
A-VGAL1-3017-F7F7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
Model 3020 – DC and 10MHz Block with DC inject, RF o/p port											
A-VGAL1-3020-S5S5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3020-N5N5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3020-B5B5	0-30dB	±1dB	±1.4dB	20	15	20	15	15	12	30	8
A-VGAL1-3020-B7B7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
A-VGAL1-3020-F7F7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8

* 1dB GCP measured at both Max and Min attenuation

THE QUEEN'S AWARDS FOR ENTERPRISE 2007 2009

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A-VGAL1-3016 to 3020

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 3018 – DC Block and 10MHz Pass											
A-VGAL1-3018-S5S5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3018-N5N5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3018-B5B5	0-30dB	±1dB	±1.4dB	20	15	20	15	15	12	30	8
A-VGAL1-3018-B7B7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
A-VGAL1-3018-F7F7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
Model 3019 – DC and 10MHz Pass											
A-VGAL1-3019-S5S5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3019-N5N5	0-30dB	±0.8dB	±1.2dB	20	15	20	15	15	12	30	8
A-VGAL1-3019-B5B5	0-30dB	±1dB	±1.4dB	20	15	20	15	15	12	30	8
A-VGAL1-3019-B7B7	0-30dB	±1.2dB	±1.5dB	14	10	14	10	15	12	30	8
A-VGAL1-3019-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	+24dBm (40mW)	Max total RF power
Max voltage: RF ports	24V	Any RF Port
Max voltage: DC bias input	24V	8-18V Recommended
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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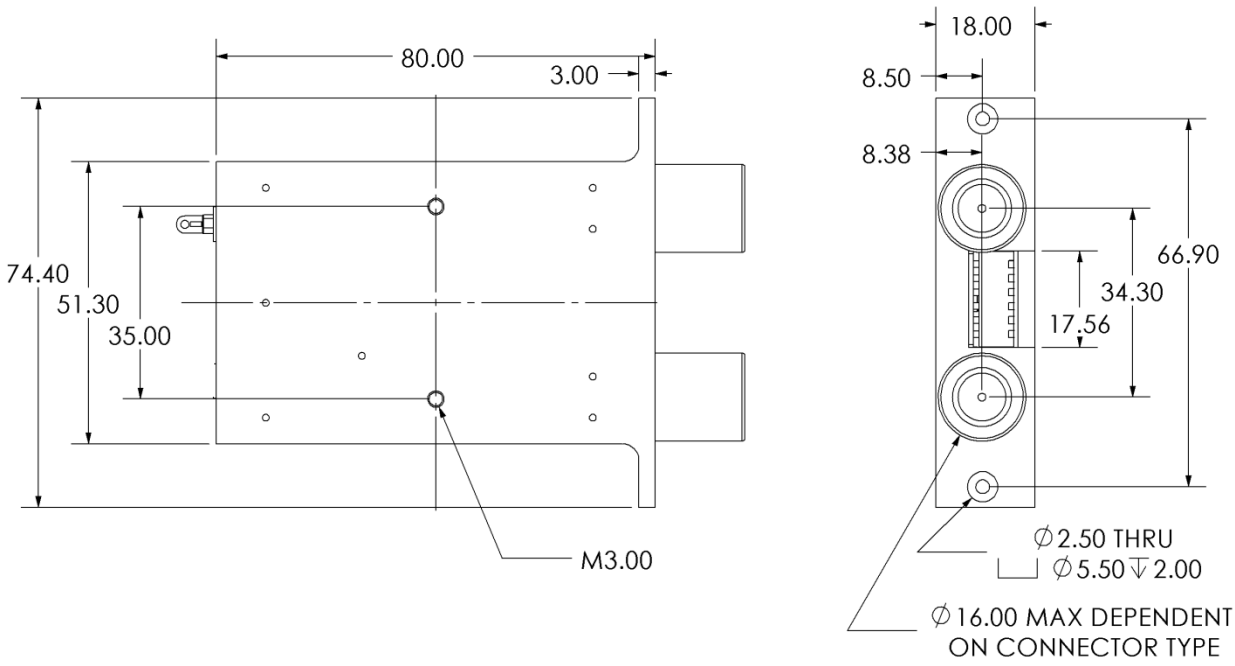
A-VGAL1-3016 to 3020

L-band Gain Block Amplifiers

Physical dimensions and appearance



Gain Setting: Model numbers A-VGAL1-3016-3020

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 3017 & 3020 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-VGAL1-3016 to 3020

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

PSU12F125-9701

PSU200V01-9700

PSU range available

Model Number	Input	Output	Other
PSU12F125-9701-SLP	100-240V (AC), 0.6A	12V (DC), 1.25A	Solder pin output
PSU200V01-9700-SLP	100-240V (AC), 0.6A	14V to 22V(DC) 1.25A	Solder pin output

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