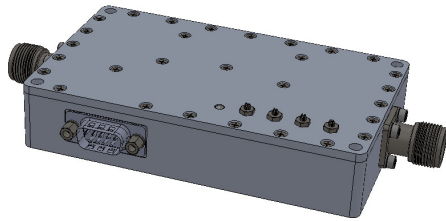


RF Adjustable AGC/Limiting Line Amplifier

L-Band 1.0 - 2.0 GHz



Features

- Adjustable Small-Signal Gain, AGC Output Threshold, Minimum Gain, and Maximum Output Power
- Uses GaAs MESFET and E-pHEMT Technologies
- Variable AGC and Limiting Module
- Class A Output Stage
- Microprocessor Based Control Loop

API Technologies' Model QBS-610 is an automatic gain control/limiting line amplifier module covering 1-2 GHz. This design provides variable small-signal gain, AGC output power threshold, minimum gain, and maximum output power settings. The QBS-610 allows for adjustment, via mechanical set screw, of four key operating parameters to allow for ease of integration and system alignment.

Technical Specifications

Parameter	Specifications ⁽¹⁾	Comments
Frequency	1.0 – 2.0 GHz	
Input Power	-80 to -20 dBm	Note 2
Output Limiter Power	+8 to +20 dBm	Note 3
Small-Signal Gain	40 to 48 dB	Notes 3, 4
AGC Output Threshold	-11 to -3 dBm	Notes 3, 5
Minimum Gain (AGC Enabled)	18 to 26 dB	Notes 3, 6
Reverse Isolation	60 dB (min)	
Gain Flatness	1.8 dB pk-pk (max)	Note 7
Linear Phase Deviation	±7.0 degrees (max)	Note 8
Noise Figure	6.5 dB (max)	Note 9
Output P1dB	+19.0 dBm (min)	Note 9
Output IP3	+29.0 dBm (min)	Note 9
Input / Output Impedance	50 Ω	Nominal
Input / Output VSWR	1.3 : 1 (max)	
DC Input Voltage	+24 to +32 VDC	Note 10
DC Input Power	17 W (max)	

General

Control / Interface Signals	AGC Bypass → TTL Logic Summary Fault Indicator → Open-Collector ⁽¹¹⁾
MTBF	200,000 hrs. +50°C Ground Fixed Environment MIL-HDBK-217F

Mechanical

Case Dimensions	5.0" (L) x 3.0" (W) x 1.2" (H)
Material	6061-T6 Aluminum Alloy
Finish	Clear Iridite MIL-DTL-5541F Type II, Class 3
Weight	16 oz. (max)
Grounding	Chassis
Outline Drawing	080-23035
Connectors	
RF Input	N-Type Female (4-Hole Flange)
RF Output	N-Type Female (4-Hole Flange)
DC Power	9 Pin D-Sub (Male) Standard Density

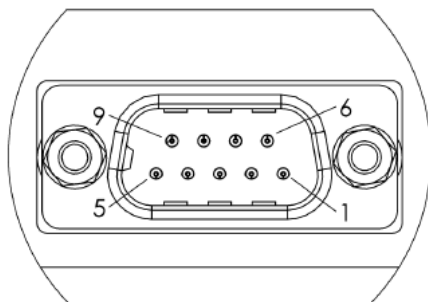
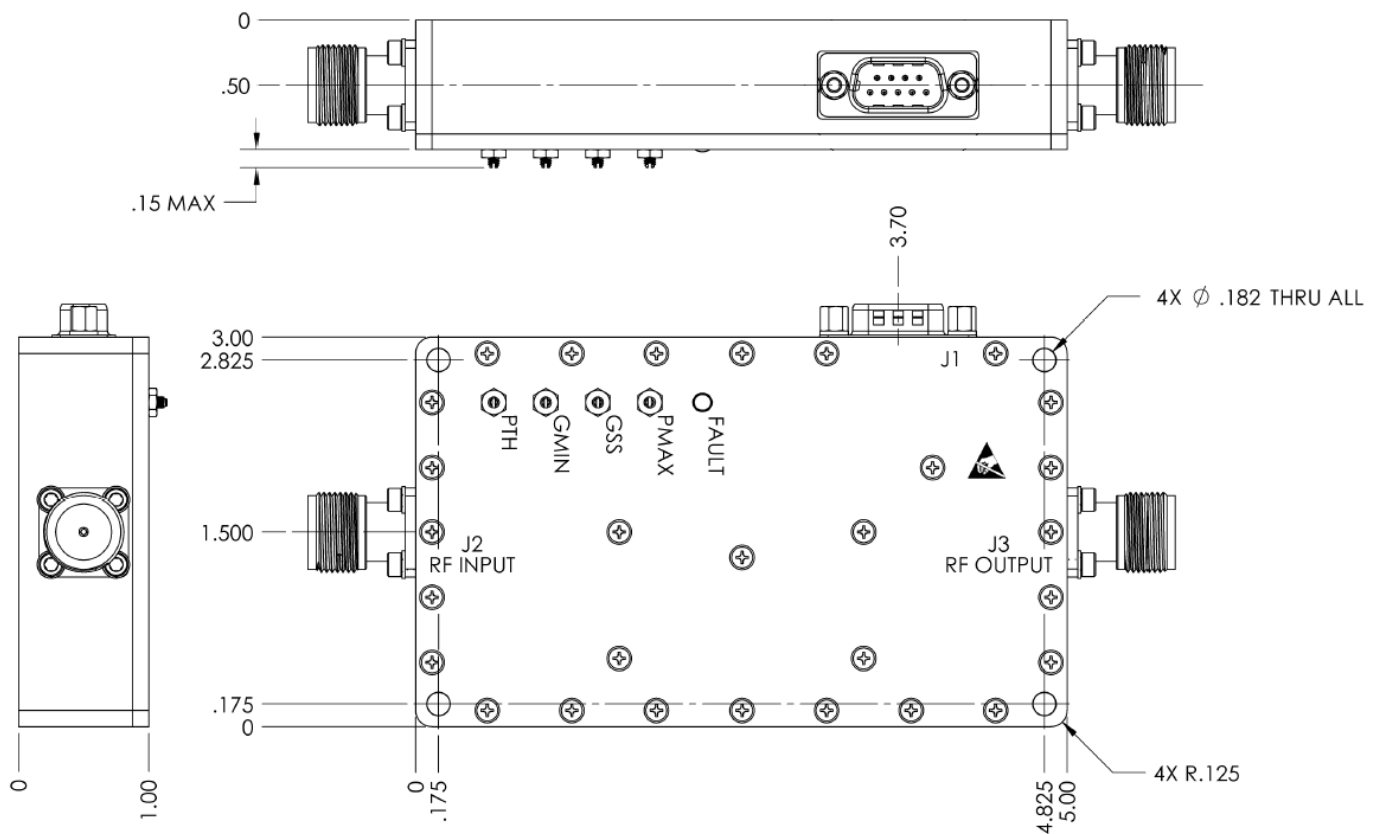
Environmental

Parameter	Specification	Comments
Operating Case Temperature	-40°C to +70°C	-
Absolute Maximum Case Temperature	+90°C	-
Storage Temperature	-55°C to +125°C	-
Cooling	Adequate Heat Sink Required	Conduction
Relative Humidity	0 to 90%	Non-condensing
Altitude	0 to 10,000 ft.	Above Sea Level

Notes

1. Specification ratings are based on measurements in a 50 ohm system.
2. Damage may occur at input levels above +8dBm.
3. Adjustable via external set screw.
4. Valid for output power levels below AGC threshold.
5. Power level measured at RF output connector.
6. Measured with input power level of -20 dBm.
7. Measured across entire frequency band under all gain/output power conditions.
8. Measured across any 120MHz band under all gain/output power conditions.
9. All set screws adjusted to nominal values with power levels up to -13dBm.
10. Alternate DC power supply voltages available as a custom solution.
11. Normal operating state is a low impedance contact (collector) capable of sinking up to 10 mA.

Outline Drawing



DETAIL A

D-SUB Interface (Detail A)	
Pin	Input / Output
1	+28 VDC
2	+28 VDC Return
3 – 5	Spares
6	AGC Bypass
7	AGC Bypass Return
8	Summary Fault Indicator
9	Summary Fault Indicator Return