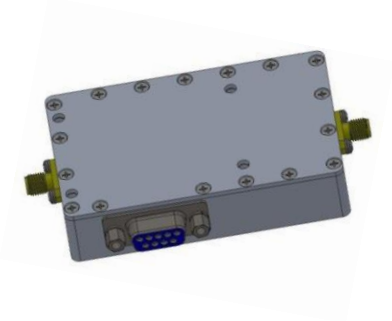
Part Number: QB-865

2 Watt Broadband Driver Amplifier

800 to 2200 MHz Class A Linear Design



Features

- High Output Power: +33 dBm Typical
- Flat Gain
- Balanced Configuration
- Excellent Intermodulation Performance
  3rd Order Intercept: +48 dBm Typical
  2nd Order Intercept: +65 dBm Typical

API Technologies' model QB-865 is a single stage, high dynamic range driver amplifier with extended performance from 800 to 2200 MHz to cover major telecommunication bands. Using a high reliability GaAs MESFET technology in a balanced configuration, the module is able to achieve 2W of output power at 1dB compression with exceptional linearity, gain flatness, and VSWR at the In/Out ports across the entire frequency range. The discrete design is supplied in an aluminum package with SMA-F connectors for the RF ports and a 9 pin D-Sub for DC power to facilitate system integration. Operating from a nominal +12V power supply, the QB-865 draws approximately 650 mA with a small signal gain of 14 dB and a typical noise figure of 5.0 dB. Optional services include over temperature testing, environmental screening, and(or) alternate package configurations.

Technical Specifications (1)

Parameter	Unit	Typical 25°C	Min/Max 25°C
Frequency Range	MHz	800 – 2200	900 – 2200
Small Signal Gain	dB	14.0	13.0 min.
Gain Flatness	dB	+/- 0.25	+/- 0.60 max.
Reverse Isolation	dB	25	22 min.
Input VSWR	—	1.2 :1	1.5 :1 max.
Output VSWR	—	1.2 :1	1.5 :1 max.
Noise Figure	dB	5.0	6.0 max.
P_{OUT} @ 1dB Compression	dBm	+33	+32 min.
3rd Order Output IP	dBm	+48	+45 min.
2nd Order Output IP	dBm	+65	+55 min.
DC Voltage	Vdc	+12	+12
Operating DC Current	mA	650	800 max.

Mechanical Specifications

Parameter	Specification	Comments
Package (non-hermetic)	API Dwg: 080-23135	6061-T6 Al Alloy
Finish	Clear Iridite	MIL-DTL-5541F, Class 3
RF In/Out Connectors	Captivated SMA Female	2-Hole Flange Mount
DC Interface	9 Pin D-Sub (Female)	Standard Density
Cooling	Adequate Heat Sink Required	Note 4

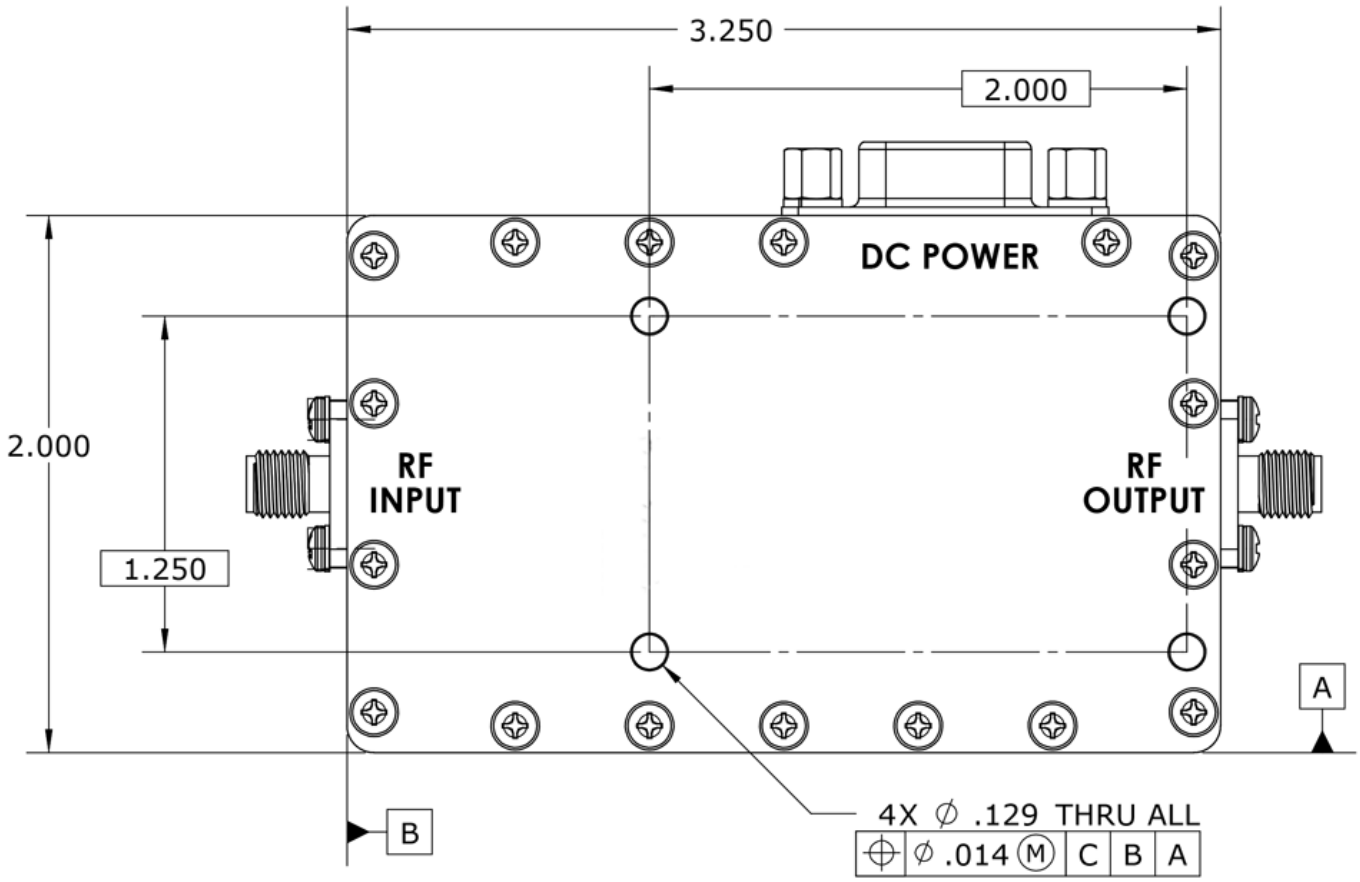
Absolute Maximum Ratings

Parameter	Specification
DC Voltage	+13.0 Vdc
RF Input Power (2)	+23 dBm
Operating Case Temperature (3)	-40°C to +75°C
Storage Temperature	-55°C to +125°C

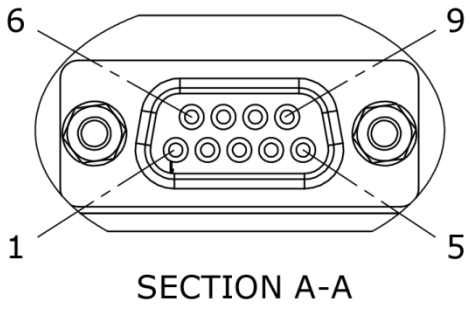
Notes:

1. Specification ratings are based on measurements in a 50 ohm system with a DC supply voltage tolerance of ± 2%.
2. With RF output port terminated into 50 ohms (Load VSWR ≤ 2.0 :1)
3. Maximum Operating Case Temperature is defined as the baseplate temperature which, if exceeded for extended periods, could result in premature unit failure. This data is provided for user reliability information. This may or may not represent the maximum temperature for electrical parameter specifications.

Outline Drawing



Pin Designations	
Pin #	Signal
1	+12V
2	N/C
3	N/C
4	N/C
5	N/C
6	N/C
7	N/C
8	Ground
9	N/C



SECTION A-A