RF AMPLIFIER
MODEL QBH-2832-04

Available as: QBH-2832-04, 080-22567-0001
QBH-2832-04LF (RoHS Compliant)

Features

- High Gain: 35.5 dB Typical
- High Power: +33 dBm Typical
- **Replaces Old Motorola "2832" Design**

Specifications[2]

CHARACTERISTIC	TYPICAL Ta= 25 ºC	MIN/MAX Ta=+25 ºC
Frequency	1 - 200 MHz	1 - 200 MHz
Gain (dB)	35.5	34 Min/ 37 Max.
Gain vs. Temperature	—	—
Gain Flatness	±0.5	± 1.0 Max.
Reverse Isolation (dB)	45	—
VSWR In Out	1.5:1 1.5:1	2.0:1 Max. 2.0:1 Max.
1 dB Compression (dBm)	+33	+31 Min.
3rd Order Intercept (dBm) (Measured at 100 MHz)*	+44	+43 Min.
Noise Figure (dB)	4.5	6.0 Max.
Power Vdc mA	+28 435	+28 470 Max.

Notes:

1. Maximum operating temperature is defined as that 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.

2. Min/Max specifications are guaranteed when tested in a 50 Ohm system.

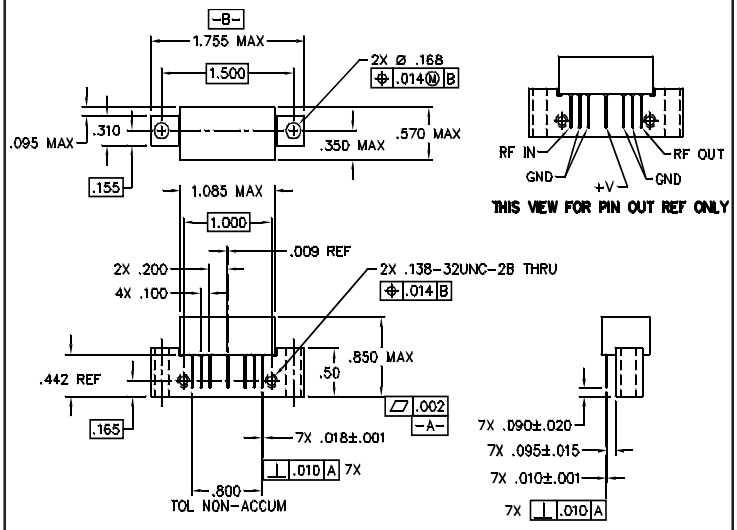
3. *IP3 performance at 200 MHz, 4 dB lower.

ECN July 12, 2023
ECN: IP3 performance revision.
(Was +45 dBm Min. over the band, now measured only at 100 MHz with a +43 dBm Min guarantee.

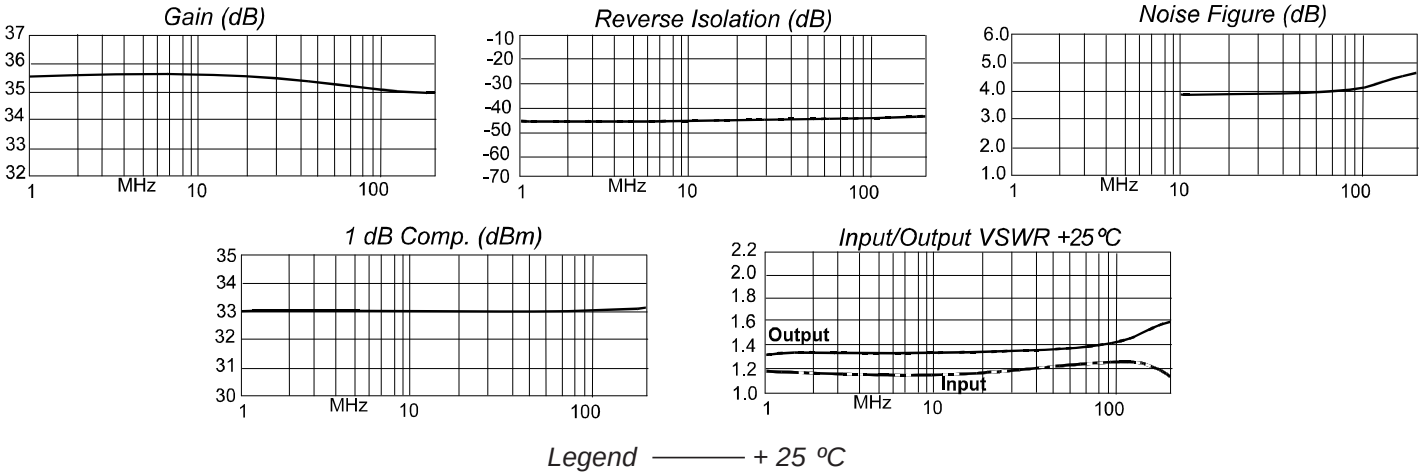
Absolute Maximum (No Damage) Ratings

Operating Temperature[1] ..... -20 ºC to +90 ºC
Storage Temperature ..... -40 ºC to + 100 ºC
DC Voltage ..... + 29 Volts
Continuous RF Input Power ..... + 0 dBm
No damage when operated in a true 50 Ohm system.

Outline Drawing: 080-22567-0001



Typical Performance Data



SPECTRUM CONTROL

Spectrum Control · 2707 Black Lake Place · Philadelphia, Pennsylvania 19154 · PH (215) 464-4000 · Fax (215) 464-4001

SPECTRUM CONTROL

Philadelphia Operations
2707 Black Lake Place
Philadelphia, PA 19154 (USA)

Phone: (215) 464-4000
Fax: (215) 464-4001

Date: April 3, 2023

Letter of Compliance

Subject: QBH-2832-04LF

This note is intended to add some clarity to your RoHS compliant request and further explains the process we use to define RoHS compliance.

Regarding strict RoHS compliance measures, the design of the product number(s) noted as a reply to this request are in compliance with restrictions of certain hazardous substances under the Restriction on Hazardous Substances (RoHS) Directive 2015/863. By design, the product(s) referenced should not contain the substances noted below or their compounds. Lead and lead compounds typically found in solder, plated surfaces, passive component terminations, etc., should be either under the Directive limit, or not present at all.

Status	Substances and Limits
Current Restrictions	• Cadmium(Cd): 0.01% • Mercury: 0.1% • Lead(Pb) : 0.1% • Hexavalent chromium (Cr6+) : 0.1% • Polybrominated biphenyls (PBB): 0.1 %; • Polybrominated diphenyl ethers (PBDE): 0.1 % • Bis(2-Ethylhexyl) phthalate (DEHP): 0.1% (added in 2015); • Benzyl butyl phthalate (BBP): 0.1% (added in 2015); • Dibutyl phthalate (DBP): 0.1% (added in 2015); • Diisobutyl phthalate (DIBP): 0.1% (added in 2015).

Please note that the design is RoHS compliant. Although we believe that the part itself will therefore also be compliant, we perform no testing to assure that contamination, erroneous piece parts or other material that might cause non-compliance of the product(s) noted, do not exist.

Spectrum hopes this letter will be helpful in our mutual understanding and mutual pursuit of RoHS compliance. Please do not hesitate to contact us if you have any questions or comments about how we can provide further assistance.

Sincerely,

Walter Witt
Product Line Manager
Spectrum Control, Philadelphia Operations

Walter Witt
Product Line Manager

Spectrum Control
(API Technologies)
RF/Microwave
2707 Black Lake Place Philadelphia, PA 19154-1008

Phone: (215) 618-3719
Walter.Witt@SpectrumControl.com
www.SpectrumControl.com

Issue Control Date
May 17, *2023*

SPECTRUM CONTROL - PHILADELPHIA LETTER OF COMPLIANCE
European Union REACH Declaration

QBH-2832-04 & QBH-2832-04LF

Greetings,

The European Union (EU) legislation titled ***Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)*** was initiated on June 1, 2007. The aim of REACH is to ensure a high level of protection for human health and the environment by monitoring the 233 chemicals and substances specified on the candidate list that was updated on January, 2023. The REACH regulation requires registration of those chemicals or substances when they are intended for use within the European Economic Area (EEA) and their individual weight will exceed the annual cumulative threshold. The obligation to register the chemicals or substances is on the individual or entity that manufactures the applicable product. As summarized below, Spectrum has evaluated the product designs that are offered by our Philadelphia, Pennsylvania facility.

Section 2.2 of the European Chemicals Agency (ECHA) guidance document titled ***Requirements for Substances in Articles*** defines an article as "an object which during production is given a special shape, surface, or design which determines its function to a greater degree than its chemical composition." The products manufactured at Spectrum's Philadelphia facility are considered articles under this definition and Spectrum does not believe they contain any of the 233 Substances of Very High Concern (SVHC) in concentrations that exceed the 0.1% (weight by weight) threshold. Additionally, Section 4.0 of the ECHA guidance document covers substances in articles that are (1) intended to be released during normal conditions of use, and (2) the total amount of the substance produced or imported in all articles exceeds 1 metric ton per year (equivalent to 1,000 kg per year). The products manufactured at Spectrum's Philadelphia facility are also considered articles per this definition, and under normal and reasonable conditions of use they do not have the intended release of any chemicals or substances.

As outlined in the ECHA guidance document, and because the Spectrum Philadelphia products meet the above criteria for an article, REACH regulations do not require Spectrum to register, notify, or communicate internal chemical or substance information. It should also be noted that Spectrum's Philadelphia facility has not performed any physical analysis on our products for the presence of any of the SVHCs specified in the current REACH 233 candidate list.

The REACH SVHC List is dynamic and should not be assumed as the final REACH candidate list. Spectrum's Philadelphia facility will continue to monitor the progress of the REACH directive with regard to its applicability to our product designs. Spectrum hopes this letter will be helpful in our mutual pursuit of REACH compliance, and please do not hesitate to contact your local Spectrum Sales Representative if you have any questions or comments about how we can provide further assistance.

Sincerely,

Walter Witt
Product Line Manager, Spectrum Philadelphia