RF AMPLIFIER MODEL QBH-4009

Available as: QBH-4009, 4 Pin TO-8 (080-10114-0001)
QBH-9-4009, SMA Connectorized Housing (H1L)

Features

- High Gain: 10.0 dB Typical
- High Power: +25.5 dBm Typical
- Operating Temp. -55 ºC to +85 ºC
- Environmental Screening Available

Maximum (NO DAMAGE) Ratings

Ambient Operating Temperature ..... -55ºC to +85 ºC
Storage Temperature ..... -65ºC to +150 ºC
Case Temperature ..... +125 ºC
DC Voltage ..... +17 Volts
Continuous RF Input Power ..... +17 dBm
Short Term RF Input Power ..... 50 Milliwatts (1 Minute Max.)
Maximum Peak Power ..... 0.5 Watt (3 µsec Max.)

Specifications

CHARACTERISTIC	TYPICAL Ta= 25 ºC	MIN/MAX Ta = -55 ºC to +85 ºC
Frequency	10 - 2000 MHz	10 - 2000 MHz
Gain (dB)	10.0 ± 1.0	---
Gain vs. Temperature	+1.0/-1.0	
Gain Flatness	1.0	1.4 Max.
Reverse Isolation (dB)	-16	---
VSWR In	2.0:1	2.0:1 Max.
VSWR Out	2.0:1	2.0:1 Max.
1 dB Compression (dBm)	+25.5	+25.5 Min.
Output Intercept point		
3rd Order	+35	---
2nd Order	+45	---
Noise Figure* (dB)	4.5	5.5 Max.
Power Vdc	+15	+15
mA	195	205 Max.

Specifications are guaranteed when tested in a 50 Ohm system. Specifications indicated as typical are not guaranteed.

*Noise Figure not measured or guaranteed below 500 MHz

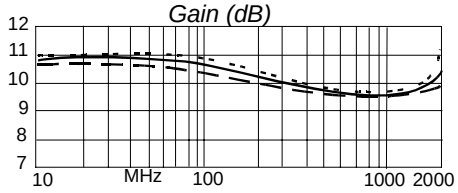
ECN: 7-28-2020
SMA Connectorized Housing will be the H1L Housing, see page two for reference drawing.

ECN: 1-16-2025
RI 16 dB Typical, Gain vs Temp Typical Only

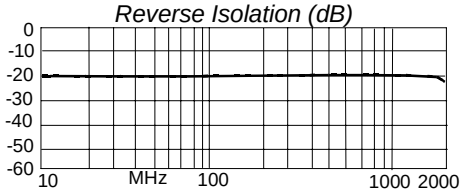
Revision: 10-20-2022

Typical Performance Data

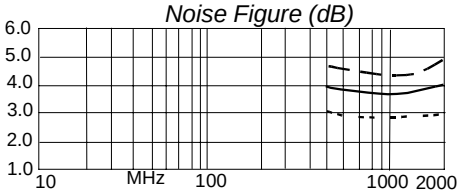
Gain (dB)



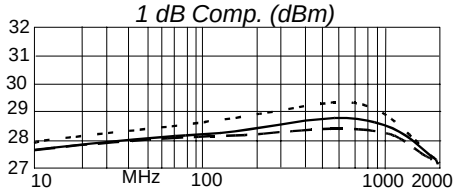
Reverse Isolation (dB)



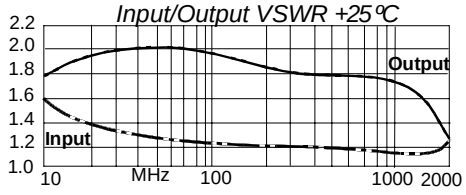
Noise Figure (dB)



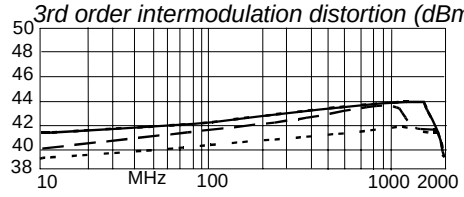
1 dB Comp. (dBm)



Input/Output VSWR +25ºC



3rd order intermodulation distortion (dBm)



Legend ——— *+25 ºC* – – – *+85 ºC* - - - - - - *-55 ºC*

Linear S-Parameters Data

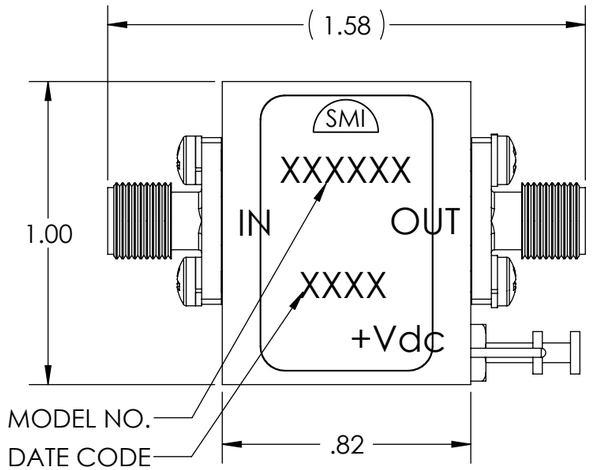
FREQ. MHz	S11 dB	S11 Ang	S21 dB	S21 Ang	S12 dB	S12 Ang	S22 dB	S22 Ang
10	-13.2	-114.1	10.8	-160.1	-18.7	4.7	-10.8	173.3
50	-17.8	-168.2	10.8	174.5	-19.3	-5.0	-9.6	169.5
90	-18.1	177.9	10.7	164.9	-19.3	-9.7	-9.7	160.3
300	-20.1	150.9	10.2	126.5	-19.0	-35.4	-10.9	119.3
700	-20.5	111.7	10.1	58.2	-19.4	-86.4	-11.2	51.0
1000	-21.6	75.5	10.1	6.2	-19.9	-124.1	-11.6	-0.8
1400	-24.2	18.1	10.1	-63.4	-20.8	-172.9	-12.8	-65.7
1700	-21.9	-25.0	10.4	-118.4	-21.5	146.9	-14.6	-102.3
2000	-18.4	-51.7	10.6	-177.5	-23.3	107.3	-20.0	-116.6

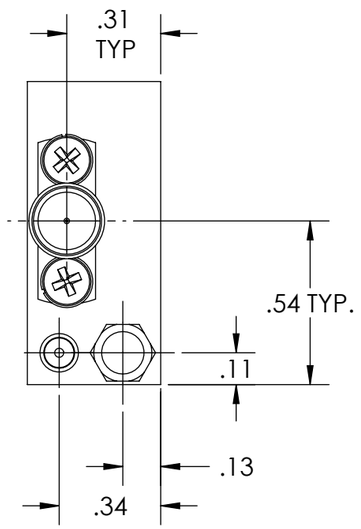
SPECTRUM CONTROL

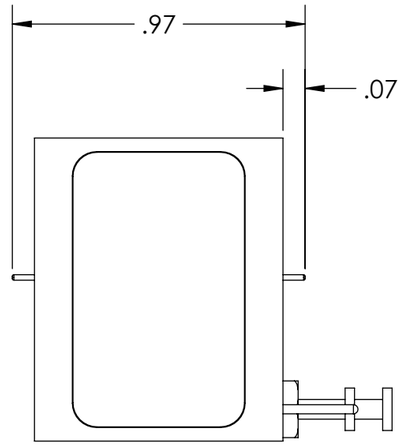
REVISIONS				
ECN	REV.	DESCRIPTION	CHNG/DATE	APPVD/DATE
XXXX	P1	PRELIMINARY RELEASE	2013/06/24	-

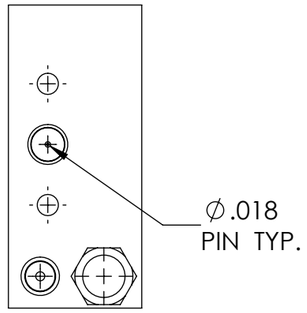
NOTES:

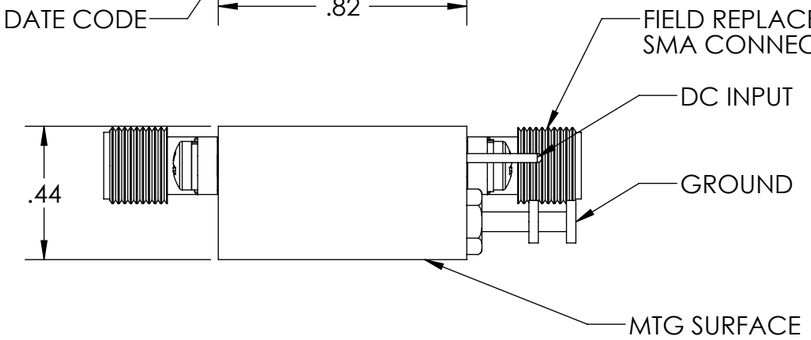
1. HOUSING: 70/30 CN/NI
   ELECTRONIC GRADE

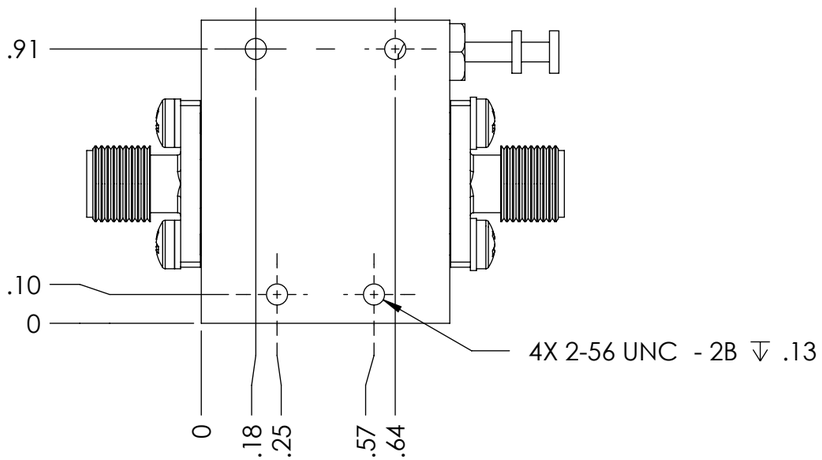












WITHOUT SMA CONNECTORS

CAUTION

THIS ASSEMBLY CONTAINS PARTS SENSITIVE TO DAMAGE BY ELECTROSTATIC DISCHARGE (ESD). USE ESD PRECAUTIONARY PROCEDURES WHEN TOUCHING, REMOVING OR INSERTING

SEE SEPARATE PARTS LIST IN ELECTRONIC STORAGE

UNLESS OTHERWISE SPECIFIED

* INTERPRET DRAWING IAW ASME Y14.100-2004
* DIMENSIONING AND TOLERANCING IAW ASME Y14.5-1994
* PARENTHETICAL INFORMATION FOR REFERENCE ONLY
* DIMENSIONAL LIMITS APPLY BEFORE PROCESSES
* DIMENSIONS ARE IN INCHES
* TOLERANCES ARE: ANGLES ±1.0° 2 PLACE DECIMAL ±.02 3 PLACE DECIMAL ±.005
* SURFACE FINISH 63
* REMOVE ALL BURRS AND SHARP EDGES .010 RAD MAX.
* CONCENTRICITY MACHINED DIA: .002 FIM
* MACHINED TOOL MISMATCH: .002 MAX.

DO NOT SCALE DRAWING

3rd ANGLE PROJECTION
ANSI

DRAWN	WAR	2013/06/24
CHECKED		
ENGRG	PH	2013/06/24
MFG		
QA		

SPECTRUM MICROWAVE, INC
2707 Black Lake Place
Philadelphia, PA 19154-1008 (USA)

TITLE
OUTLINE, H1L

SIZE	CAGE CODE	DWG NO.	REV
B	60979	088-00386	P1

SCALE: 2:1 SHEET 1 OF 1

COMPUTER ASSISTED DRAWING
GENERATED USING SOLIDWORKS 2007

FORM NO. 1054 SIZE B1