

MAIN FEATURES

- ❖ Very low noise
- ❖ High reliability
- ❖ Weather-proof housing
- ❖ RS485 control
- ❖ Capable to use in redundant LNA system



DESCRIPTION

This Q-band low noise amplifier is intended for use in modern solid state communication equipment, where high reliability microwave signal amplification, high dynamic range are important factors. Typical applications are in satellite ground station systems. This microwave LNA is constructed using Gallium Arsenide HEMT amplifier stages of high reliability. Due to the weather-proof sealing, it can be used effectively in harsh environmental conditions.

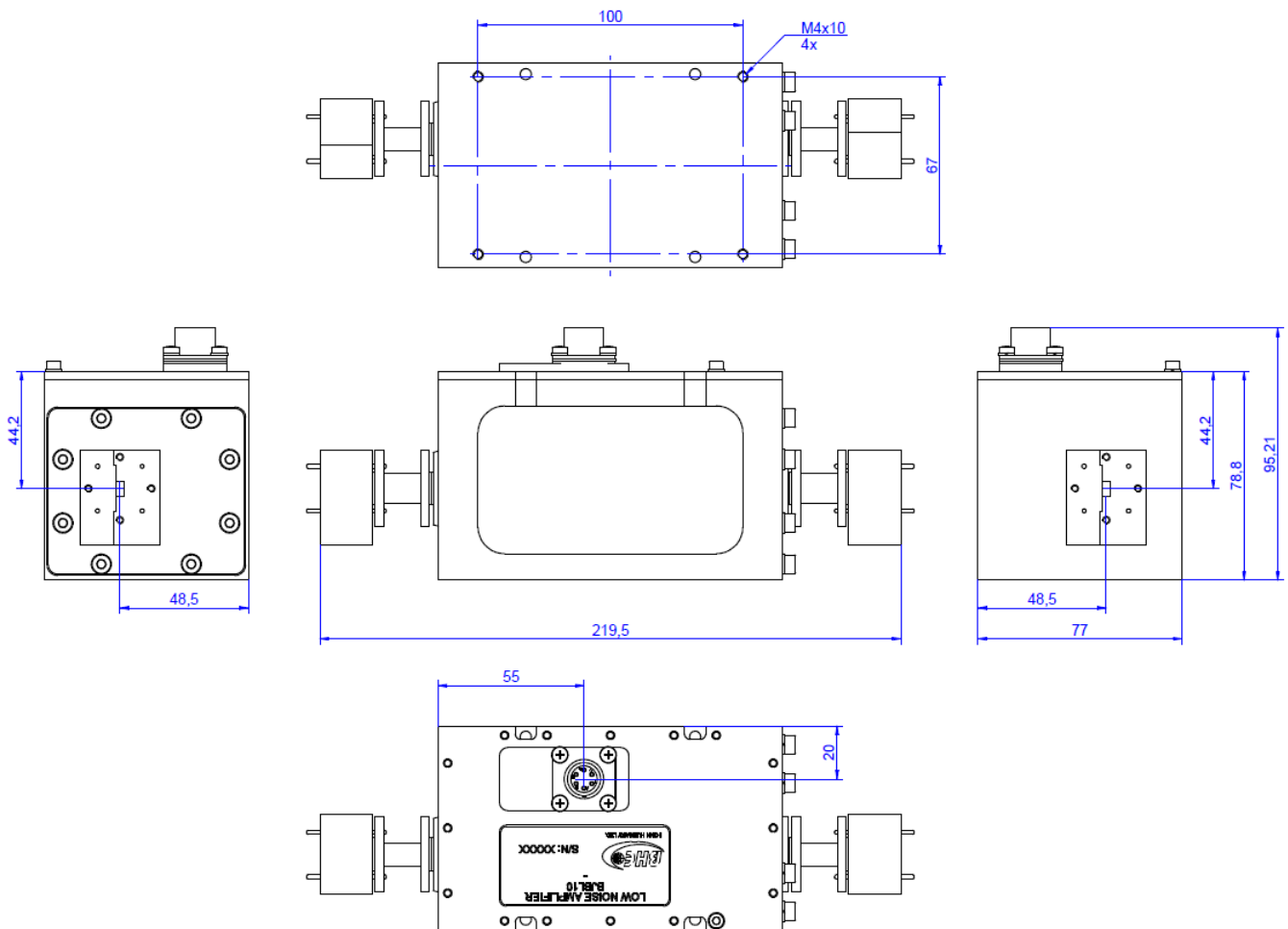
SPECIFICATIONS

GENERAL CHARACTERISTIC	
Frequency Band	37.5 to 42.5 GHz
Linear Gain	53dB typ. (43dB option)
Gain Flatness	2.5dB pk-pk in full band 1.5dB pk-pk in any 500 MHz 0.25dB pk-pk in any 40 MHz
Gain stability @ constant temperature	0.5dB pk-pk / 24hours
Gain variation over operating temperature range	0.12 dB/°C max
Input Noise Temperature (Noise Figure)	230K (2.54dB) @ room temperature with input WG isolator
Noise Temperature variation over temperature	1.5 K/°C typ.
1 dB Compression	+10 dBm min.
Output 3 rd Order Intercept Point	+20 dBm min.
AM/PM Conversion	0.05 °/dB max. @ Pout= -5dBm
Maximum input power (damage level)	-10dBm (in operational frequency band)
Max. input power in 27-31 and 47.2-52.4GHz bandwidth	-45dBm (without degradation of RF performance)
Input VSWR	1.4:1 max. with input WG isolator
Output VSWR	1.3:1 max. with output WG isolator
Air leakage	no air leak with an overpressure of 40mbar
Group delay in full band	2ns pk-pk
Group Delay in any 40MHz	Linear: 0.02 ns/MHz Parabolic: 0.001 ns/MHz ² Ripple: 0.1 ns
RF Input Interface	WR22, UG-383/U flange
RF Output Interface	WR22, UG-383/U flange (option: 2.4mm – Female)
DC & Control Interface	PT02E-10-6P (Miniature cylindrical)
Monitoring and control	via RS485

GENERAL CHARACTERISTIC	
Alarm contact	Open @ Fault Closed @ OK
Supply Voltage	+ 12 ... + 28V DC
Power Consumption	90mA typ. @ +28V DC
Humidity	waterproof (IP67)
Operating Temperature Range	0°C to +50°C (-20°C to +55°C optionally)

Specifications are subject to change without notice.

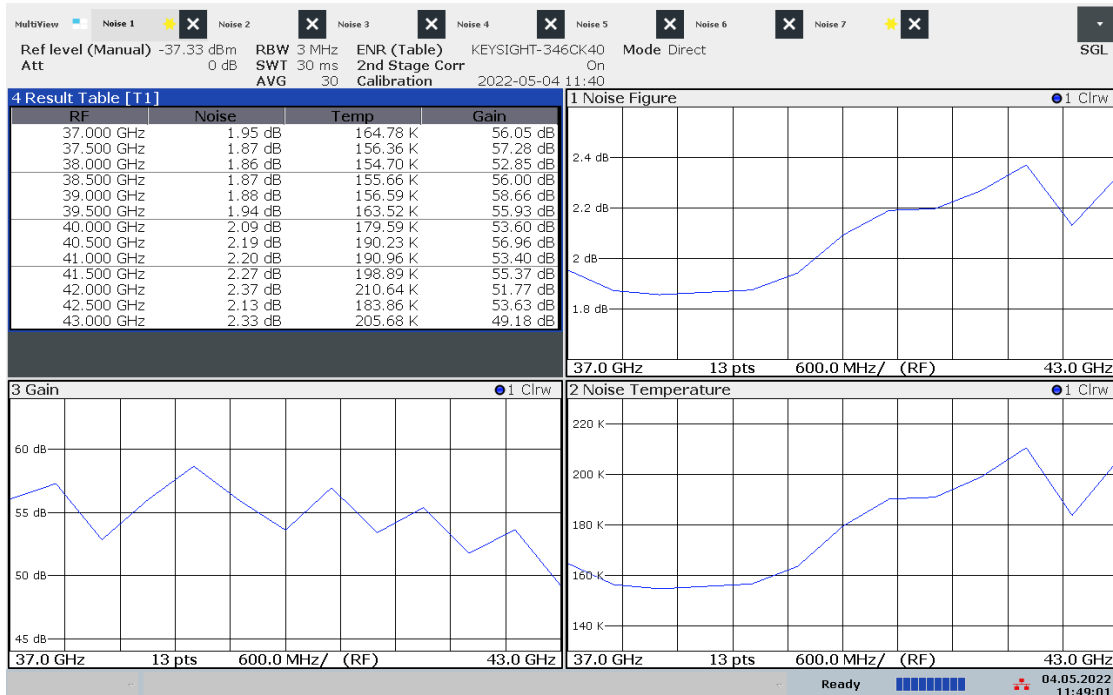
OUTLINE DRAWING (mm)





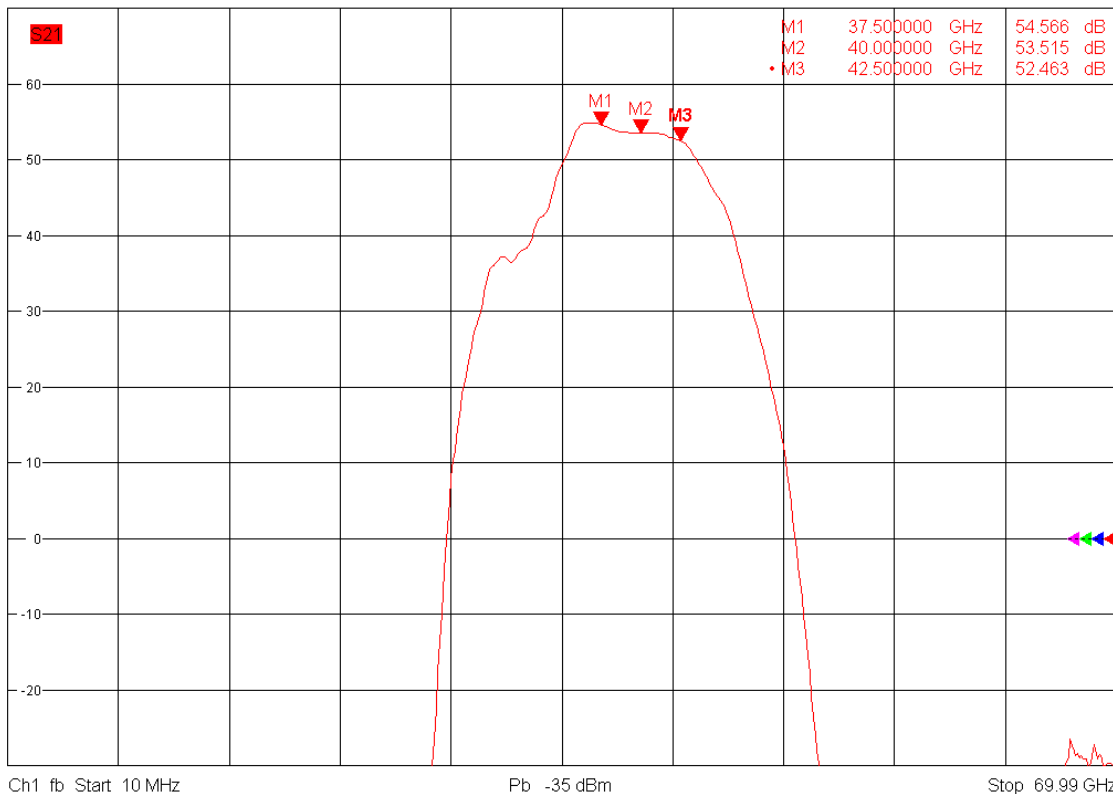
BJEL12 Q-band low noise amplifier

TYPICAL TEST DATA (NF & GAIN)



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Trc1 S21 dB Mag 10 dB / Ref 0 dB Cal Smo Trc2 S11 dB Mag 10 dB / Ref 0 dB Invisible
Trc3 S22 dB Mag 10 dB / Ref 0 dB Invisible Trc4 S21 Delay 2 ns / Ref 0 s Invisible



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BJEL12 Q-band low noise amplifier

ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
BJEL12K11105	Q-band low noise amplifier

DOCUMENT REVISION

DOCUMENT NAME	REVISION	DATE
BJEL12-LM-K11105-V01	V01	24/10/2022