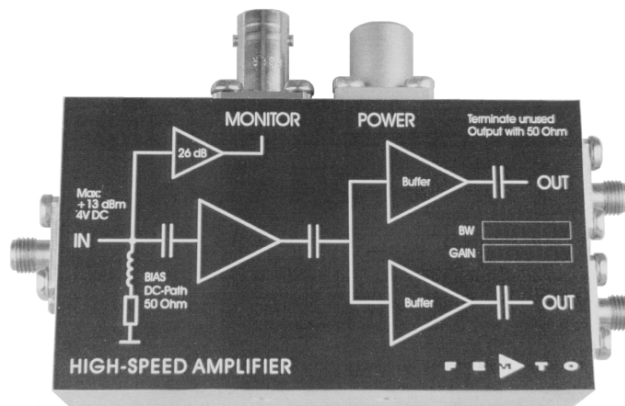




# Datasheet

# HSA-Y-2-20

## 2 GHz High-Speed Amplifier



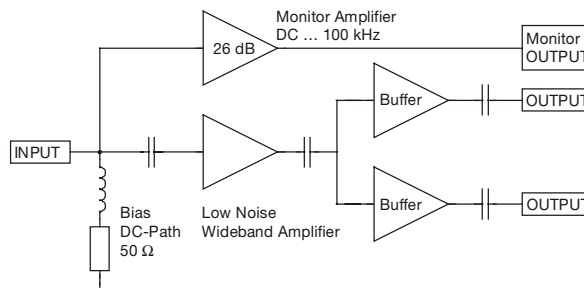
### Features

- **Bandwidth 10 kHz ... 2 GHz**
- **Rise Time 175 ps**
- **Gain 20 dB (500 V/A)**
- **Input VSWR 1 : 1.15**
- **Integrated Bias Circuit**
- **Monitor Output**
- **Two identical Signal Outputs**

### Applications

- **Preamplifier for ultra-fast Detectors (Microchannel-Plates, Photomultipliers, Avalanche-Photodiodes, PIN-Photodiodes etc.)**
- **Oscilloscope and Transient-Recorder Preamplifier**
- **Time-Resolved Pulse and Transient Measurements**

### Block Diagram



### Specifications

**Test Conditions**  $V_s = \pm 15 \text{ V}$ ,  $T_a = 25^\circ\text{C}$ , System Impedance =  $50 \Omega$

#### Gain

Gain 20 dB (500 V/A)  
 Gain Accuracy  $\pm 1 \text{ dB}$   
 Gain Flatness  $\pm 0.2 \text{ dB}$

#### Frequency Response

Lower Cut-Off Frequency 10 kHz  
 Upper Cut-Off Frequency 2 GHz

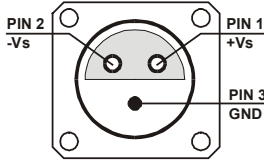
#### Time Response

Rise / Fall Time (10% - 90%) 175 ps

#### Input

DC Input Impedance  $50 \Omega$   
 RF Input Impedance  $50 \Omega$   
 $50 \Omega$  Noise Figure 5.2 dB (@  $f < 1 \text{ GHz}$ )  
 Equivalent Input Voltage Noise 680 pV/ $\sqrt{\text{Hz}}$  (@  $f < 1 \text{ GHz}$ )  
 Equivalent Input Current Noise 13.6 pA/ $\sqrt{\text{Hz}}$  (@  $f < 1 \text{ GHz}$ )  
 Input VSWR 1 : 1.15 (@  $f < 1.5 \text{ GHz}$ )  
 Maximum Input VSWR 1 : 1.35 (@  $f < 3 \text{ GHz}$ )

**Datasheet****HSA-Y-2-20****2 GHz High-Speed Amplifier**

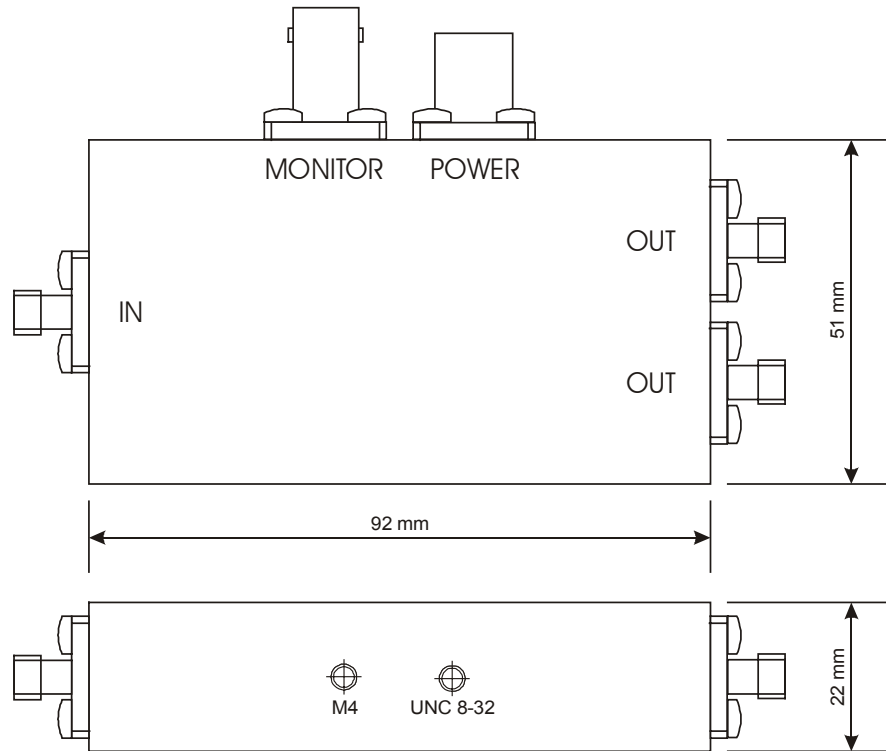
Output	Two identical Signal Outputs: Output Impedance 50 $\Omega$ Maximum Output VSWR 1 : 2.5 (@ f < 3 GHz) Output Power P <sub>1dB</sub> + 12.5 dBm (@ f < 1 GHz) Output Peak-Peak Voltage 2.5 Vpp (@ f < 500 MHz, for linear Amplification) Isolation between Outputs 15 dB (@ f < 3 GHz)
Monitor Amplifier	Gain 26 dB (1 kV/A) Lower Cut-Off Frequency DC Upper Cut-Off Frequency 100 kHz Output Voltage $\pm 10$ V (@ 10k $\Omega$ load)
Power Supply	Supply Voltage $\pm 15$ V Supply Current + 160 / -10 mA
Case	Weight 180 gr. (0.41 lbs) Material AlMg4.5Mn, nickel-plated
Temperature Range	Storage Temperature - 40 ... + 100 °C Operating Ambient Temperature 0 ... + 60 °C Operating Case Temperature 37 °C (@ Ta = 25 °C)
Absolute Maximum Ratings	Power Supply Voltage $\pm 20$ V DC and LF Input Voltage $\pm 4$ V RF Input Power + 13 dBm
Connectors	Input SMA Signal Outputs SMA Monitor Output BNC Power Supply LEMO Series 1S, 3-pin fixed Socket Pin 1: + 15 V Pin 2: - 15 V Pin 3: GND 

# Datasheet

# HSA-Y-2-20

## 2 GHz High-Speed Amplifier

Dimensions



DZ01-0611-10

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SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

