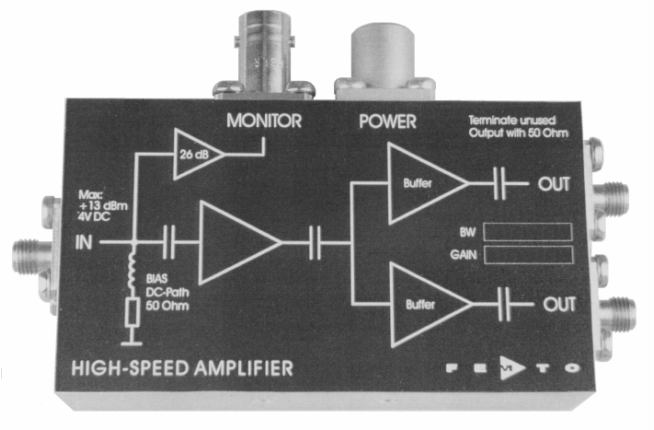
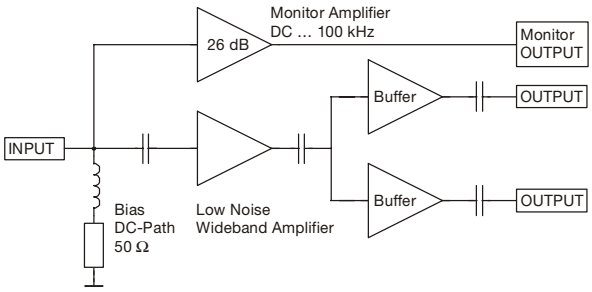
1 GHz High-Speed Amplifier



Features	• **Bandwidth 10 kHz ... 1.1 GHz** • **Rise Time 320 ps** • **Gain 60 dB (50 kV/A)** • **Noise Figure 1.9 dB** • **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 — *Vs = ± 15 V, Ta = 25°C, System Impedance = 50 Ω*

Gain	Gain	60 dB (50 kV/A)	
	Gain Accuracy	± 1 dB	
	Gain Flatness	± 0.2 dB	
Frequency Response	Lower Cut-Off Frequency	10 kHz	
	Upper Cut-Off Frequency	1.1 GHz	
Time Response	Rise / Fall Time (10% - 90%)	320 ps	
Input	DC Input Impedance	50 Ω	
	RF Input Impedance	50 Ω	
	50 Ω Noise Figure	1.9 dB	(@ f < 700 MHz)
	Equivalent Input Voltage Noise	330 pV/√Hz	(@ f < 700 MHz)
	Equivalent Input Current Noise	6.6 pA/√Hz	(@ f < 700 MHz)
	Input VSWR	1 : 1.4	(@ f < 1.5 GHz)
	Maximum Input VSWR	1 : 1.4	(@ f < 3 GHz)

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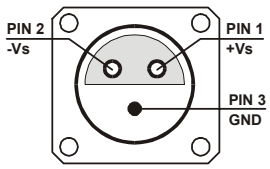
Output	Two identical Signal Outputs:		
	Output Impedance	50 Ω	
	Maximum Output VSWR	1 : 1.4	(@ f < 3 GHz)
	Output Power P_{1dB}	+ 13 dBm	(@ f < 500 MHz)
	Output Peak-Peak Voltage	2.3 Vpp	(@ f < 500 MHz, for linear Amplification)
	Isolation between Outputs	16 dB	(@ f < 3 GHz)
Monitor Amplifier	Gain	26 dB (1 kV/A)	
	Lower Cut-Off Frequency	DC	
	Upper Cut-Off Frequency	100 kHz	
	Output Voltage	± 10 V	(@ 10kΩ load)
Power Supply	Supply Voltage	± 15 V	
	Supply Current	+ 180 / -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	39 °C	(@ Ta = 25 °C)
Absolute Maximum Ratings	Power Supply Voltage	± 20 V	
	DC and LF Input Voltage	± 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	



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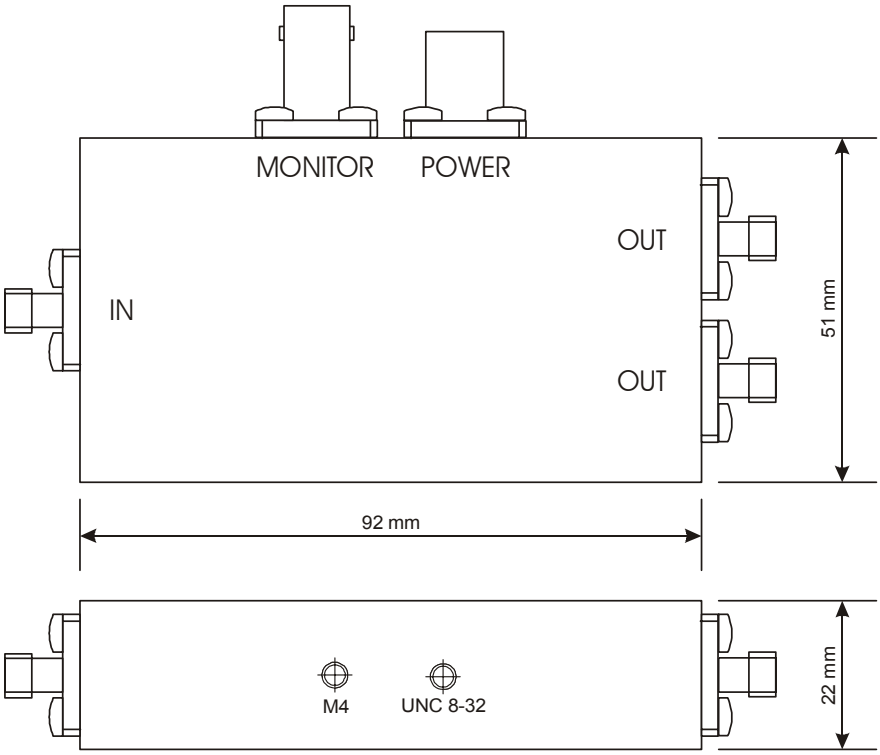
Dimensions



DZ01-0611-10

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