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Intronics

High Voltage Differential FET Amplifier

Model 171

FEATURES

High Output Voltage: ±140V
High CMR: 100dB min
Operates With a Wide Range of Power Supplies High CMV: ± (|V_S| - 10V)

APPLICATIONS

High Voltage Compliance Current Source High Voltage Follower With Gain
High Voltage Integrator
Differential Amp for High CMV Bridge Applications
Reference Power Supply

GENERAL DESCRIPTION

Model 171 is a high performance FET input op amp designed for operation over a wide range of supply voltages. This module features an output range of ±15V to ±140V at l0mA, a minimum CMRR of l00dB and a high common mode voltage rating of ±(V_S - 10V) min. DC offset is less than ±1mV, and maximum drift of either ±50 or ±l5µV/°C is available in the J or K versions. Bias current is less than 50pA (171J) or 20pA (171K), doubling per +10°C increase of temperature. The model 171 also features small signal bandwidth of 3MHz for unity gain, full-power bandwidth of 15kHz, and slew rate of I0V/µs. These operating characteristics make model 171 an excellent choice for high voltage buffer applications, followers with gain, off-ground signal measurements and reference power supplies.

Excellent power supply rejection of 7µV/V enables model 171 to be powered by inexpensive, low regulation supplies, without sacrificing any of the 171's inherent high performance. The supplies also need not be symmetrical. Any combination of power supply voltages between the limits of 15 to +300V for the positive side and 15 to -300V for negative side is acceptable provided the total voltage across the amplifier is within the range of 30 to 300V.

Model 171's output is completely short circuit protected by the use of a current limit scheme. This type of protection provides a short circuit output that is only slightly greater than the rated output current for normal operation. With this design the module and external circuitry are protected, internal heat dissipation and the associated high temperature rise are limited, and added reliability is built in.

POWER SUPPLY VOLTAGES

Model 171 offers the flexibility of operating with an extensive range and combination of power supply voltages. Figure 1 shows a chart of permissible combinations of supply voltages for the 171. The model 171 maintains its normal operating characteristics when using asymmetrical power supply configurations.

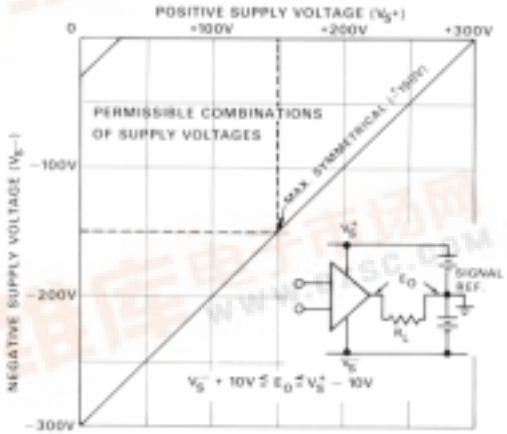

Figure 1. Power Supply Voltage Combinations

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Intronics
1400 Providence Highway, Building #2
Norwood, MA 02062
Phone (781) 551-5500
FAX (781) 551-5555
www.intronicspower.com