Rochester Electronics

Datasheet

PART NUMBER

AD624BD-G-ROCA

Rochester Electronics Manufactured Components

Rochester branded components are manufactured using either die/wafers purchased from the original suppliers or Rochester wafers recreated from the original IP. All re-creations are done with the approval of the Original Component Manufacturer. (OCM)

Parts are tested using original factory test programs or Rochester developed test solutions to guarantee product meets or exceeds the OCM data sheet.

Quality Overview

- ISO-9001
- AS9120 certification
- Qualified Manufacturers List (QML) MIL-PRF-38535
    - Class Q Military
    - Class V Space Level

Qualified Suppliers List of Distributors (QSLD)

- Rochester is a critical supplier to DLA and meets all industry and DLA standards.

Rochester Electronics, LLC is committed to supplying products that satisfy customer expectations for quality and are equal to those originally supplied by industry manufacturers.

The original manufacturer's datasheet accompanying this document reflects the performance and specifications of the Rochester manufactured version of this device. Rochester Electronics guarantees the performance of its semiconductor products to the original OCM specifications. 'Typical' values are for reference purposes only. Certain minimum or maximum ratings may be based on product characterization, design, simulation, or sample testing.

ANALOG DEVICES

Precision Instrumentation Amplifier

AD624

1.1 Scope.

This specification covers the detail requirements for a programmable gain instrumentation amplifier. The gain equation is $\frac{40{,}000}{R_G} + 1 \pm 20\%$ with external resistor gain programming.

1.2 Part Number.

The complete part number per Table 1 of this specification is as follows:

Device	Part Number
−1	AD624SD/883B

1.2.3 Case Outline.

See Appendix 1 of General Specification ADI-M-1000: package outline: D-16.

1.3 Absolute Maximum Ratings. (T_A = +25°C unless otherwise noted)

Supply Voltage	±18V
Internal Power Dissipation	280mW
Rated Operating Temperature Range	−55°C to +125°C
Storage Temperature Range	−65°C to +150°C
Lead Temperature Range (Soldering 10sec)	+300°C

1.5 Thermal Characteristics.

Thermal Resistance θ_{JC} = 22°C/W
θ_{JA} = 95°C/W

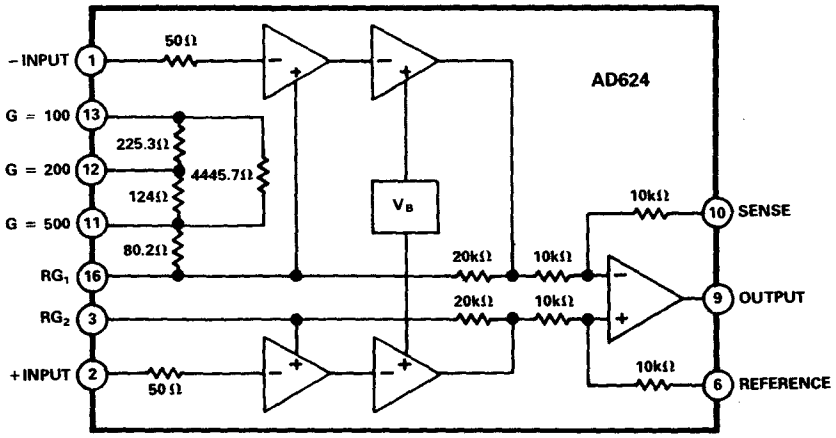
AD624 – SPECIFICATIONS

Test	Symbol	Device	Design Limit @ +25°C	Sub Group 1	Sub Group 2, 3	Sub Group 4	Test Condition[1]	Units
Gain Error 1	GE_1	−1	0.05	0.05			G = 1, V_O = ±10V	±% max
Gain Error 100	GE_{100}	−1	0.25	0.25			G = 100, V_O = ±10V	±% max
Gain Error 200	GE_{200}	−1	0.5	0.5			G = 200, V_O = ±10V	±% max
Gain Error 500	GE_{500}	−1	0.5	0.5			G = 500, V_O = ±10V	±% max
Gain Error Drift 1	$TCGE_1$	−1	5				G = 1, V_O = ±10V	±ppm/°C max
Gain Error Drift 100	$TCGE_{100}$	−1	10				G = 100, V_O = ±10V	±ppm/°C max
Gain Error Drift 200	$TCGE_{200}$	−1	10				G = 200, V_O = ±10V	±ppm/°C max
Gain Error Drift 500	$TCGE_{500}$	−1	15				G = 500, V_O = ±10V	±ppm/°C max
Input Offset Voltage	V_{OSI}	−1	75	75			V_{IN} = 0V	±μV max
Input Offset Voltage Drift	TCV_{OSI}	−1	2		2		G = 500, V_{IN} = 0V	±μV/°C max
Output Offset Voltage	V_{OSO}	−1	3	3			V_{IN} = 0V	±mV max
Output Offset Drift	TCV_{OSO}	−1	50		50		G = 1, V_{IN} = 0V	±μV/°C max
Input Bias Current	I_B	−1	50	50			G = 1	±nA max
Input Offset Current	I_{OS}	−1	35	35			G = 1	±nA max
Common-Mode Rejection	$+CMRR_1$	−1	70	70			G = 1, V_{IN} = 0V to +10V	dB min
Common-Mode Rejection	$-CMRR_1$	−1	70	70			G = 1, V_{IN} = 0V to −10V	dB min
Common-Mode Rejection	$+CMRR_{100}$	−1	100	100			G = 100, V_{IN} = 0V to +10V	dB min
Common-Mode Rejection	$-CMRR_{100}$	−1	100	100			G = 100, V_{IN} = 0V to −10V	dB min
Common-Mode Rejection	$+CMRR_{200}$	−1	100	100			G = 200, V_{IN} = 0V to +10V	dB min
Common-Mode Rejection	$-CMRR_{200}$	−1	100	100			G = 200, V_{IN} = 0V to −10V	dB min
Common-Mode Rejection	$+CMRR_{500}$	−1	110	110			G = 500, V_{IN} = 0V to +10V	dB min
Common-Mode Rejection	$-CMRR_{500}$	−1	110	110			G = 500, V_{IN} = 0V to −10V	dB min
Power Supply Current	I_{CC}	−1	5	5			G = 1	mA max
Power Supply Rejection	$PSRR_1$	−1	75	75			G = 1, V_S = ±12V, ±15V	dB min
Power Supply Rejection	$PSRR_{100}$	−1	105	105			G = 100, V_S = ±12V, ±15V	dB min
Power Supply Rejection	$PSRR_{200}$	−1	105	105			G = 200, V_S = ±12V, ±15V	dB min
Power Supply Rejection	$PSRR_{500}$	−1	110	110			G = 500, V_S = ±12V, ±15V	dB min

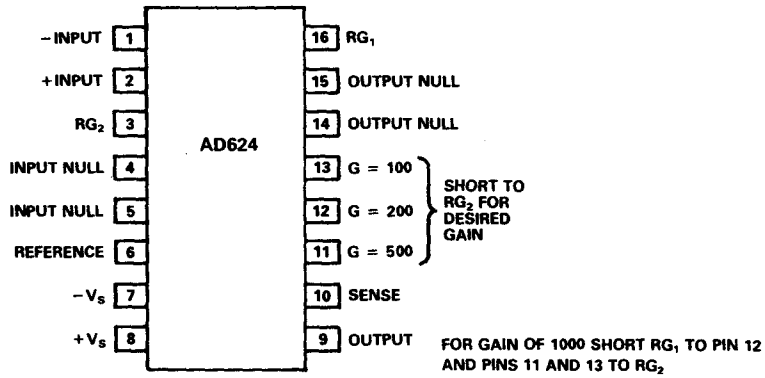
NOTE
[1]V_S = ±15V, R_L = 2kΩ unless otherwise specified.

Table 1.

3.2.1 Functional Block Diagram and Terminal Assignments.



Pin Assignments



3.2.4 Microcircuit Technology Group.

This microcircuit is covered by technology group (49).

4.2.1 Life Test/Burn-In Circuit.

Steady state life test is per MIL-STD-883 Method 1005. Burn-in is per MIL-STD-883 Method 1015 test condition (B).