Rochester Electronics

Datasheet

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 recreations are done with the approval of the OCM.

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

Quality Overview

- ISO-9001
- AS9120 certification
- Qualified Manufacturers List (QML) MIL-PRF-35835
  - 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 OEM 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

Dual, High Speed, Current Feedback Operational Amplifier

OP-260

1.1 Scope.

This specification covers the detail requirement for a dual, high speed, current feedback operational amplifier. It is highly recommended that this data sheet be used as a baseline for new military or aerospace specification control drawings.

1.2 Part Number.

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

Device	Part Number	Package
−1	OP-260AJ/883	J
−1	OP-260ARC/883	RC
−1	OP-260AZ/883	Z

1.2.3 Case Outline.

Letter	Case Outline (Lead Finish Per MIL-M-38510)
J	8-Lead Metal Can (TO-99)
RC	20-Pin Leadless Chip Carrier (LCC)
Z	8-Lead Ceramic Dual-In-Line Package (Cerdip)

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

Supply Voltage . . . . ±18 V
Input Voltage . . . . Supply Voltage
Differential Input Voltage . . . . ±1 V
Inverting Input Current . . . . ±7 mA Continuous ±20 mA Peak
Output Short-Circuit Duration . . . . 10 Seconds
Storage Temperature Range . . . . −65°C to +150°C
Operating Temperature Range . . . . $-55°C \leq T_A \leq +125°C$
Lead Temperature Range (Soldering 60 sec) . . . . +300°C
Maximum Junction Temperature (T_J) . . . . +175°C

1.5 Thermal Characteristics.

Thermal Resistance, TO-99 (J) Package:
Junction-to-Case (θ_{JC}) = 16°C/W max
Junction-to-Ambient (θ_{JA}) = 145°C/W max

Thermal Resistance, LCC (RC) Package:
Junction-to-Case (θ_{JC}) = 33°C/W max
Junction-to-Ambient (θ_{JA}) = 88°C/W max

Thermal Resistance Cerdip (Z) Package:
Junction-to-Case (θ_{JC}) = 12°C/W max
Junction-to-Ambient (θ_{JA}) = 134°C/W max

OP-260—SPECIFICATIONS

Table 1.

Characteristics	Symbol	Limits A Min	Max	Group A Subgroup	Test Condition[1]	Units
Input Offset Voltage	V_{IOS}		3.5	1	$T_A = +25°C$	mV
			6.0	2, 3	$T_A = -55°C, +125°C$	
Input Bias Current	I_{B+}		1.0	1	$T_A = +25°C$	μA
			2.0	2, 3	$T_A = -55°C, +125°C$	
	I_{B-}		8.0	1	$T_A = +25°C$	μA
			12.0	2, 3	$T_A = -55°C, +125°C$	
Input Bias Current Common-Mode Rejection Ratio	$CMRRI_{B-}$		0.1	1	$V_{CM} = \pm 11$ V; $T_A = +25°C$	μA/V
			0.2	2, 3	$V_{CM} = \pm 11$ V; $T_A = -55°C, +125°C$	
Input Bias Current Power Supply Rejection Ratio	$PSRRI_{B-}$		0.1	1	$V_S = \pm 9$ V, ± 18 V; $T_A = +25°C$	μA/V
			0.2	2, 3	$V_S = \pm 9$ V, ± 18 V; $T_A = -55°C, +125°C$	
	$PSRRI_{B+}$		0.02	1	$V_S = \pm 9$ V, ± 18 V; $T_A = +25°C$	μA/V
			0.05	2, 3	$V_S = \pm 9$ V, ± 18 V; $T_A = -55°C, +125°C$	
Common-Mode Rejection	CMR	56		1	$V_{CM} = \pm 11$ V; $T_A = +25°C$	dB
		52		2, 3	$V_{CM} = \pm 11$ V; $T_A = -55°C, +125°C$	
Power Supply Rejection	PSR	66		1	$V_S = \pm 9$ V, ± 18 V; $T_A = +25°C$	dB
		62		2, 3	$V_S = \pm 9$ V, ± 18 V; $T_A = -55°C, +125°C$	
Input Voltage Range[2]	IVR	±11		1	$T_A = +25°C$	V
		±10		2, 3	$T_A = -55°C, +125°C$	
Output Voltage Swing	V_O	±12		4	$R_L = 1$ kΩ; $T_A = +25°C$	V
		±11.5		5, 6	$R_L = 1$ kΩ; $T_A = -55°C, +125°C$	
		±11		4	$I_{OUT} = \pm 20$ mA; $T_A = +25°C$	V
		±10.5		5, 6	$I_{OUT} = \pm 20$ mA, $T_A = -55°C, +125°C$	
Open-Loop Transimpedance	R_T	5		4	$V_O = \pm 10$ V; $R_L = 1$ kΩ; $T_A = +25°C$	MΩ
		3		5, 6	$V_O = \pm 10$ V; $R_L = 1$ kΩ $T_A = -55°C, +125°C$	
Slew Rate (J & RC) Package	SR	375		7	$A_{VCL} = +10$, $R_L = 1$ kΩ; $T_A = +25°C$ $V_O = \pm 10$ V, Test at $V_O = \pm 5$ V	V/μs
(Z) Package		300				
Supply Current[3]	I_{SY}		10.5	1	No Load; $T_A = +25°C$	mA
			11.5	2, 3	No Load; $T_A = -55°C, +125°C$	

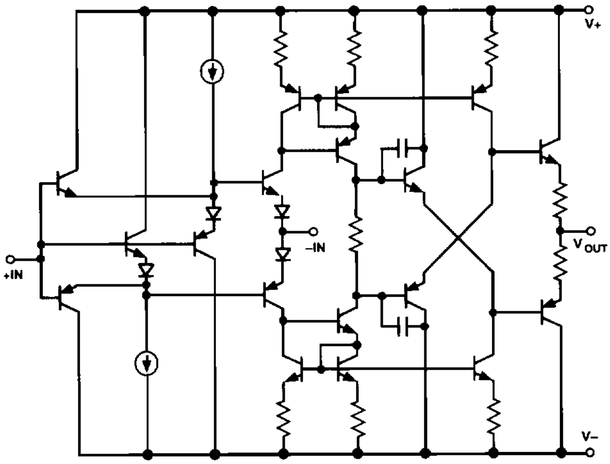
NOTES
[1] $V_S = \pm 15$ V, $V_{CM} = 0$ V, $R_F = 2.5$ kΩ, $R_S = 50$ Ω unless otherwise specified.
[2] Input Voltage Range is guaranteed by common-mode rejection CMR test.
[3] I_{SY} limit = total for both amplifiers.

Table 2. Electrical Test Requirements for Class B Devices

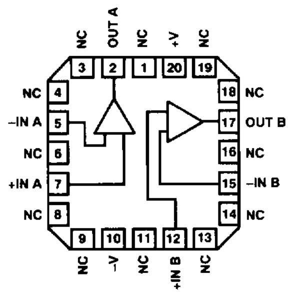
MIL-STD-883 Test Requirements	Subgroups (See Table 1)
Interim Electrical Parameters (Pre-Burn-In)	1
Final Electrical Test Parameters	1,* 2, 3, 4, 5, 6
Group A Test Requirements	1, 2, 3, 4, 5, 6, 7

*PDA applies to Subgroup 1 only. No other subgroups are included in PDA.

3.2.1 Functional Block Diagram and Terminal Assignments.

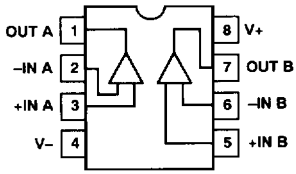


20-Position LCC (RC Suffix)

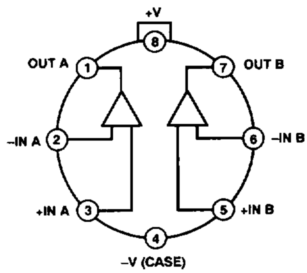


NC = NO CONNECT

Cerdip (Z Suffix)



TO-99 (J Suffix)



3.2.4. Microcircuit Technology Group.

This microcircuit is covered by technology group (49).

4.2. 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).