

PART NUMBER**55234JB-ROCV****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.

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FULL MILITARY TEMPERATURE RANGE HIGH-SPEED SENSE AMPLIFIERS FOR CONVERSION OF COINCIDENT-CURRENT MEMORY READOUT TO SATURATED DIGITAL-LOGIC LEVELS

performance features

- high speed and fast recovery time
- time and amplitude signal discrimination
- adjustable input threshold voltage levels
- narrow region of threshold voltage uncertainty
- multiple differential-input preamplifiers
- high d-c noise margin—typically one volt
- good fan-out capability

ease-of-design features

- choice of output circuit function
- TTL or DTL drive capability
- standard logic supply voltages
- plug-in configuration ideal for flow-soldering techniques
- pins on 100-mil grid spacings for industrial-type circuit boards

description

Series 5520 monolithic sense amplifiers are designed for use with high-speed memory systems. These sense amplifiers detect bipolar differential-input signals from the memory and provide the interface circuitry between the memory and the logic section. Low-level pulses originating in the memory are transformed into logic levels compatible with standard transistor-transistor-logic (TTL) and diode-transistor-logic (DTL) circuits.

These sense amplifiers feature multiple differential-input preamplifiers and versatile gating and output circuits, permitting a significant reduction in the circuitry required to accomplish the sensing function. A unique circuit design provides inherent stability of the input threshold level over a wide range of power-supply voltage levels and temperature ranges. Independent strobing of each of the dual sense-input channels ensures maximum versatility and permits detection to occur when the signal-to-noise ratio is at a maximum. The gate and strobe inputs and the outputs are compatible with standard TTL and DTL digital logic circuits.

The SN5520 and SN5521 circuits may be used to perform the functions of a flip-flop or register which responds to the sense and strobe input conditions.

The SN5522 and SN5523 circuits feature a high-fan-out, single-ended, open-collector output stage. In addition, they may be used to expand the inputs to an SN5520 or SN5521 circuit, or to perform the wired-AND function.

The SN5524 and SN5525 circuits provide for independent, dual-channel sensing with separate outputs. SN55234 and SN55235 are similar but have inverted outputs and internal compensation. SN55232 and SN55233 are identical to the SN55234 and SN55235, respectively, except that their output gates each feature an open-collector output.

The SN5528 and SN5529 circuits are identical to the SN5524 and SN5525, respectively, except that the output of each preamplifier is available as a test point. SN55238 and SN55239 are similar to SN5528 and SN5529, respectively, but have inverted outputs and internal compensation.

Series 5520 sense amplifiers are available in the J ceramic dual-in-line package and are characterized for operation over the full military temperature range of -55°C to 125°C . Terminal assignments and functions are identical to the corresponding Series 7520 circuits.

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SERIES 5520

SENSE AMPLIFIERS

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Supply voltages (see Note 1)	
V_{CC+}	7 V
V_{CC-}	-7 V
Differential input voltage, V_{ID} or V_{ref}	± 5 V
Voltage from any input to ground (see Note 2)	5.5 V
Off-state voltage applied to open-collector outputs	5.5 V
Operating free-air temperature range	-55°C to 125°C
Storage temperature range	-65°C to 150°C

recommended operating conditions

	MIN	NOM	MAX	UNIT
V_{CC+} (see Note 1)	4.75	5	5.25	V
V_{CC-} (see Note 1)	-4.75	-5	-5.25	V
V_{ref}	15		40	mV

NOTES: 1. These voltage values are with respect to network ground terminal.
2. Strobe and gate input voltages must be zero or positive with respect to network ground terminal.

electrical characteristics (unless otherwise noted $V_{CC+} = 5$ V, $V_{CC-} = -5$ V, $T_A = -55^\circ\text{C}$ to 125°C)

All electrical characteristics and test conditions are identical to those of the corresponding Series 7520 types with the exception of the items shown below. Limits which apply to Series 7520 circuits over the temperature range 0°C to 70°C apply to Series 5520 circuits over the range -55°C to 125°C .

PARAMETER	TEST CONDITIONS		SN5520 SN5522 SN5524 SN5528 SN55232 SN55234 SN55238			SN5521 SN5523 SN5525 SN5529 SN55233 SN55235 SN55239			UNIT
			MIN	TYP [‡]	MAX	MIN	TYP [‡]	MAX	
V _T Differential input threshold voltage [†]	V _{ref} = 15 mV	T _A = -55°C to 0°C and 70°C to 125°C	10	15	20	8	15	22	mV
		T _A = 0°C to 70°C	11	15	19	8	15	22	
	V _{ref} = 40 mV	T _A = -55°C to 0°C and 70°C to 125°C	35	40	45	33	40	47	
		T _A = 0°C to 70°C	36	40	44	33	40	47	
I _{IB} Differential input bias current	V _{CC+} = 5.25 V, V _{CC-} = -5.25 V, V _{ID} = 0	T _A = -55°C to 0°C	100			100			μA
		T _A = 0°C to 125°C	30			75			

[†] The differential input threshold voltage (V_T) is defined as the d-c differential input voltage (V_{ID}) required to force the output of the sense amplifier to the logic-gate threshold voltage level.

[‡] All typical values are at $V_{CC+} = 5$ V, $V_{CC-} = -5$ V, $T_A = 25^\circ\text{C}$.

switching characteristics and typical recovery and cycle times, $V_{CC+} = 5$ V, $V_{CC-} = -5$ V, $T_A = 25^\circ\text{C}$

These characteristics are identical to those of the corresponding Series 7520 types.