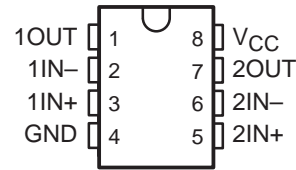


LM158, LM158A, LM258, LM258A LM358, LM358A, LM358Y, LM2904, LM2904Q DUAL OPERATIONAL AMPLIFIERS

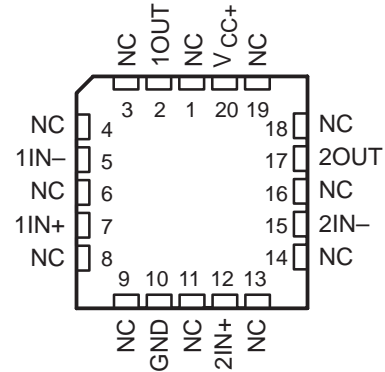
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- **Wide Range of Supply Voltages:**
 - Single Supply . . . 3 V to 30 V (LM2904 and LM2904Q . . . 3 V to 26 V) or
 - Dual Supplies
- **Low Supply-Current Drain Independent of Supply Voltage . . . 0.7 mA Typ**
- **Common-Mode Input Voltage Range Includes Ground, Allowing Direct Sensing Near Ground**
- **Low Input Bias and Offset Parameters:**
 - Input Offset Voltage . . . 3 mV Typ
A Versions . . . 2 mV Typ
 - Input Offset Current . . . 2 nA Typ
 - Input Bias Current . . . 20 nA Typ
A Versions . . . 15 nA Typ
- **Differential Input Voltage Range Equal to Maximum-Rated Supply Voltage . . . ± 32 V (LM2904 and LM2904Q . . . ± 26 V)**
- **Open-Loop Differential Voltage Amplification . . . 100 V/mV Typ**
- **Internal Frequency Compensation**

D, JG, P, OR PW PACKAGE
(TOP VIEW)



LM158, LM158A . . . FK PACKAGE
(TOP VIEW)



NC – No internal connection

description

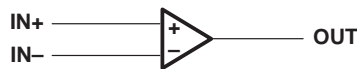
These devices consist of two independent, high-gain, frequency-compensated operational amplifiers designed to operate from a single supply over a wide range of voltages. Operation from split supplies also is possible if the difference between the two supplies is 3 V to 30 V (3 V to 26 V for the LM2904 and LM2904Q), and V_{CC} is at least 1.5 V more positive than the input common-mode voltage. The low supply-current drain is independent of the magnitude of the supply voltage.

Applications include transducer amplifiers, dc amplification blocks, and all the conventional operational amplifier circuits that now can be more easily implemented in single-supply-voltage systems. For example, these devices can be operated directly from the standard 5-V supply used in digital systems and easily provides the required interface electronics without additional ± 5 -V supplies.

The LM2904Q is manufactured to demanding automotive requirements.

The LM158 and LM158A are characterized for operation over the full military temperature range of -55°C to 125°C . The LM258 and LM258A are characterized for operation from -25°C to 85°C , the LM358 and LM358A from 0°C to 70°C , and the LM2904 and LM2904Q from -40°C to 125°C .

logic diagram (each amplifier)



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

 **TEXAS
INSTRUMENTS**

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On products compliant to MIL-PRF-38535, all parameters are tested unless otherwise noted. On all other products, production processing does not necessarily include testing of all parameters.

LM158, LM158A, LM258, LM258A LM358, LM358A, LM358Y, LM2904, LM2904Q DUAL OPERATIONAL AMPLIFIERS

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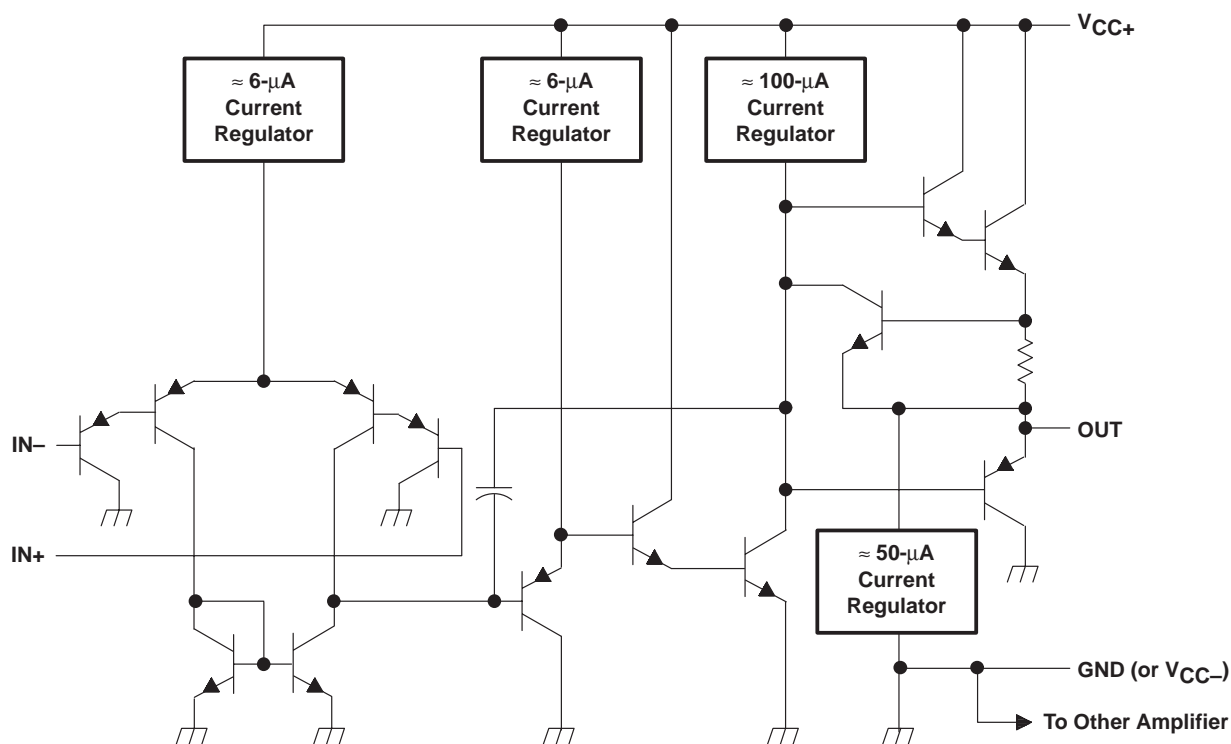
AVAILABLE OPTIONS

| T _A | V _{IO(max)} AT 25°C | PACKAGED DEVICES | | | | | CHIP FORM (Y) |
|----------------|---------------------------------|--------------------------|-------------------------|------------------------|-----------------------|----------------|---------------------|
| | | SMALL OUTLINE (D)† | CHIP CARRIER (FK) | CERAMIC DIP (JG) | PLASTIC DIP (P) | TSSOP (PW)‡ | |
| 0°C to 70°C | 7 mV | LM358D | — | — | LM358P | LM358PW | LM358Y |
| | 3 mV | — | — | — | LM358AP | — | — |
| -25°C to 85°C | 5 mV | LM258D | — | — | LM258P | — | — |
| | 3 mV | — | — | — | LM258AP | — | — |
| -40°C to 125°C | 7 mV | LM2904D | — | — | LM2904P | LM2904PW | — |
| | | LM2904QD | — | — | LM2904QP | — | — |
| -55°C to 125°C | 5 mV | LM158D | LM158FK | LM158JG | LM158P | — | — |
| | 2 mV | — | LM158AFK | LM158AJG | — | — | — |

† The D package is available taped and reeled. Add the suffix R to the device type (e.g., LM358DR).

‡ The PW package is only available left-end taped and reeled.

schematic (each amplifier)



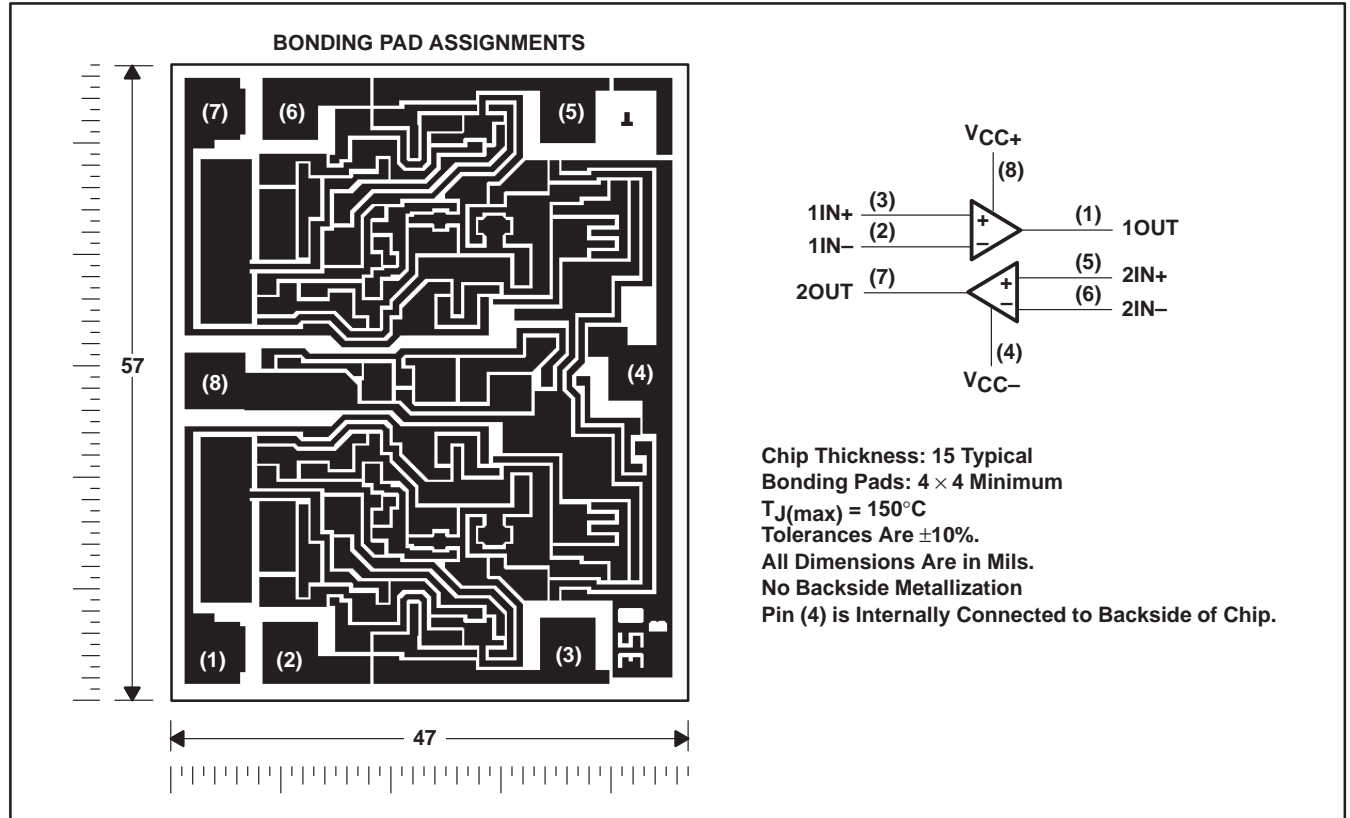
| COMPONENT COUNT | |
|-----------------|----|
| Epi-FET | 1 |
| Diodes | 2 |
| Resistors | 7 |
| Transistors | 51 |
| Capacitors | 2 |

LM158, LM158A, LM258, LM258A
 LM358, LM358A, LM358Y, LM2904, LM2904Q
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LM358Y chip information

These chips, when properly assembled, display characteristics similar to the LM358. Thermal compression or ultrasonic bonding can be used on the doped-aluminum bonding pads. Chips can be mounted with conductive epoxy or a gold-silicon preform.



**LM158, LM158A, LM258, LM258A
LM358, LM358A, LM358Y, LM2904, LM2904Q
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absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

| | | LM158, LM158A LM258, LM258A LM358, LM358A | LM2904 LM2904Q | UNIT |
|---|---------------------|---|-------------------|------|
| Supply voltage, V_{CC} (see Note 1) | | 32 | 26 | V |
| Differential input voltage, V_{ID} (see Note 2) | | ± 32 | ± 26 | V |
| Input voltage, V_I (either input) | | -0.3 to 32 | -0.3 to 26 | V |
| Duration of output short circuit (one amplifier) to ground at (or below) 25°C free-air temperature ($V_{CC} \leq 15$ V) (see Note 3) | | Unlimited | Unlimited | |
| Continuous total power dissipation | | See Dissipation Rating Table | | |
| Operating free-air temperature range, T_A | LM158, LM158A | -55 to 125 | | °C |
| | LM258, LM258A | -25 to 85 | | |
| | LM358, LM358A | 0 to 70 | | |
| | LM2904, LM2904Q | | -40 to 125 | |
| Storage temperature range, T_{stg} | | -65 to 150 | -65 to 150 | °C |
| Case temperature for 60 seconds | FK package | 260 | | °C |
| Lead temperature 1,6 mm (1/16 inch) from case for 60 seconds | JG package | 300 | 300 | °C |
| Lead temperature 1,6 mm (1/16 inch) from case for 10 seconds | D, P, or PW package | 260 | 260 | °C |

- NOTES: 1. All voltage values, except differential voltages and V_{CC} specified for measurement of I_{OS} , are with respect to the network ground terminal.
 2. Differential voltages are at $IN+$ with respect to $IN-$.
 3. Short circuits from outputs to V_{CC} can cause excessive heating and eventual destruction.

DISSIPATION RATING TABLE

| PACKAGE | $T_A \leq 25^\circ\text{C}$ POWER RATING | DERATING FACTOR ABOVE $T_A = 25^\circ\text{C}$ | $T_A = 70^\circ\text{C}$ POWER RATING | $T_A = 85^\circ\text{C}$ POWER RATING | $T_A = 125^\circ\text{C}$ POWER RATING |
|---------|---|---|--|--|---|
| D | 725 mW | 5.8 mW/°C | 464 mW | 377 mW | 145 mW |
| FK | 1375 mW | 11.0 mW/°C | 880 mW | 715 mW | 275 mW |
| JG | 1050 mW | 8.4 mW/°C | 672 mW | 546 mW | 210 mW |
| P | 1000 mW | 8.0 mW/°C | 640 mW | 520 mW | 200 mW |
| PW | 525 mW | 4.2 mW/°C | 336 mW | 273 mW | – |



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LM358, LM358A, LM358Y, LM2904, LM2904Q
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electrical characteristics at specified free-air temperature, $V_{CC} = 5\text{ V}$ (unless otherwise noted)

| PARAMETER | TEST CONDITIONS† | T_A ‡ | LM158 LM258 | | | LM358 | | | UNIT | |
|--|--|------------|--|-------|-------------------|-----------------|-------|------|------------------------------|--|
| | | | MIN | TYP§ | MAX | MIN | TYP§ | MAX | | |
| V_{IO} Input offset voltage | $V_{CC} = 5\text{ V to MAX}$, $V_{IC} = V_{ICR(\text{min})}$, $V_O = 1.4\text{ V}$ | 25°C | 3 | 5 | | 3 | 7 | mV | | |
| | | Full range | | | 7 | | 9 | | | |
| α_{VIO} Average temperature coefficient of input offset voltage | | Full range | 7 | | | 7 | | | $\mu\text{V}/^\circ\text{C}$ | |
| I_{IO} Input offset current | $V_O = 1.4\text{ V}$ | 25°C | 2 | 30 | | 2 | 50 | nA | | |
| | | Full range | | | 100 | | 150 | | | |
| α_{IIO} Average temperature coefficient of input offset current | | Full range | 10 | | | 10 | | | $\text{pA}/^\circ\text{C}$ | |
| I_{IB} Input bias current | $V_O = 1.4\text{ V}$ | 25°C | -20 | -150 | | -20 | -250 | nA | | |
| | | Full range | | | -300 | | -500 | | | |
| V_{ICR} Common-mode input voltage range | $V_{CC} = 5\text{ V to MAX}$ | 25°C | 0 to $V_{CC}-1.5$ | | 0 to $V_{CC}-1.5$ | | | V | | |
| | | Full range | 0 to $V_{CC}-2$ | | 0 to $V_{CC}-2$ | | | | | |
| V_{OH} High-level output voltage | $R_L \geq 2\text{ k}\Omega$ | 25°C | $V_{CC}-1.5$ | | | $V_{CC}-1.5$ | | | V | |
| | | 25°C | | | | | | | | |
| | | Full range | $R_L = 2\text{ k}\Omega$ | 26 | | | 26 | | | |
| | | | $R_L \geq 10\text{ k}\Omega$ | 27 28 | | | 27 28 | | | |
| V_{OL} Low-level output voltage | $R_L \leq 10\text{ k}\Omega$ | Full range | 5 20 | | | 5 20 | | | mV | |
| A_{VD} Large-signal differential voltage amplification | $V_{CC} = 15\text{ V}$, $V_O = 1\text{ V to }11\text{ V}$, $R_L = \geq 2\text{ k}\Omega$ | 25°C | 50 | 100 | | 25 | 100 | V/mV | | |
| | | Full range | 25 | | | 15 | | | | |
| CMRR Common-mode rejection ratio | $V_{CC} = 5\text{ V to MAX}$, $V_{IC} = V_{ICR(\text{min})}$ | 25°C | 70 | 80 | | 65 | 80 | dB | | |
| k_{SVR} Supply-voltage rejection ratio ($\Delta V_{DD}/\Delta V_{IO}$) | $V_{CC} = 5\text{ V to MAX}$ | 25°C | 65 | 100 | | 65 | 100 | dB | | |
| V_{O1}/V_{O2} Crosstalk attenuation | $f = 1\text{ kHz to }20\text{ kHz}$ | 25°C | 120 | | | 120 | | | dB | |
| I_O Output current | $V_{CC} = 15\text{ V}$, $V_{ID} = 1\text{ V}$, $V_O = 0$ | 25°C | -20 | -30 | | -20 | -30 | mA | | |
| | | Full range | -10 | | | -10 | | | | |
| | | Full range | $V_{CC} = 15\text{ V}$, $V_{ID} = -1\text{ V}$, $V_O = 15\text{ V}$ | 10 20 | | | 10 20 | | | |
| | | | $V_{ID} = -1\text{ V}$, $V_O = 200\text{ mV}$ | 5 | | | 5 | | | |
| I_{OS} Short-circuit output current | V_{CC} at 5 V, GND at -5 V, $V_O = 0$ | 25°C | $\pm 40 \pm 60$ | | | $\pm 40 \pm 60$ | | | mA | |
| I_{CC} Supply current (two amplifiers) | $V_O = 2.5\text{ V}$, No load | Full range | 0.7 1.2 | | | 0.7 1.2 | | | mA | |
| | $V_{CC} = \text{MAX}$, $V_O = 0.5\text{ V}$, No load | Full range | 1 2 | | | 1 2 | | | | |

† All characteristics are measured under open-loop conditions with zero common-mode input voltage, unless otherwise specified. MAX V_{CC} for testing purposes is 26 V for LM 2904 and 30 V for others.

‡ Full range is -55°C to 125°C for LM158, -25°C to 85°C for LM258, 0°C to 70°C for LM358, and -40°C to 125°C for LM2904 and LM2904Q.

§ All typical values are at $T_A = 25^\circ\text{C}$.



**LM158, LM158A, LM258, LM258A
LM358, LM358A, LM358Y, LM2904, LM2904Q
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electrical characteristics at specified free-air temperature, $V_{CC} = 5\text{ V}$ (unless otherwise noted)

| PARAMETER | TEST CONDITIONS† | T_A ‡ | LM2904 LM2904Q | | | UNIT | |
|--|---|------------------------------|-------------------|----------|---------------|------------------------------|--|
| | | | MIN | TYP§ | MAX | | |
| V_{IO} Input offset voltage | $V_{CC} = 5\text{ V to MAX}$, $V_{IC} = V_{ICR(\min)}$, $V_O = 1.4\text{ V}$ | 25°C | 3 | 7 | | mV | |
| | | Full range | | | 10 | | |
| α_{VIO} Average temperature coefficient of input offset voltage | | Full range | 7 | | | $\mu\text{V}/^\circ\text{C}$ | |
| I_{IO} Input offset current | $V_O = 1.4\text{ V}$ | 25°C | 2 | 50 | | nA | |
| | | Full range | | | 300 | | |
| α_{IIO} Average temperature coefficient of input offset current | | Full range | 10 | | | $\text{pA}/^\circ\text{C}$ | |
| I_{IB} Input bias current | $V_O = 1.4\text{ V}$ | 25°C | -20 | -250 | | nA | |
| | | Full range | | | -500 | | |
| V_{ICR} Common-mode input voltage range | $V_{CC} = 5\text{ V to MAX}$ | 25°C | 0 to $V_{CC}-1.5$ | | | V | |
| | | Full range | 0 to $V_{CC}-2$ | | | | |
| V_{OH} High-level output voltage | $R_L \geq 2\text{ k}\Omega$ | 25°C | | | | V | |
| | $R_L \geq 10\text{ k}\Omega$ | 25°C | $V_{CC}-1.5$ | | | | |
| | $V_{CC} = \text{MAX}$ | $R_L = 2\text{ k}\Omega$ | Full range | 26 | | | |
| | | $R_L \geq 10\text{ k}\Omega$ | Full range | 23 | 24 | | |
| V_{OL} Low-level output voltage | $R_L \leq 10\text{ k}\Omega$ | Full range | 5 | 20 | | mV | |
| A_{VD} Large-signal differential voltage amplification | $V_{CC} = 15\text{ V}$, $V_O = 1\text{ V to }11\text{ V}$, $R_L \geq 2\text{ k}\Omega$ | 25°C | 25 | 100 | | V/mV | |
| | | Full range | 15 | | | | |
| CMRR Common-mode rejection ratio | $V_{CC} = 5\text{ V to MAX}$, $V_{IC} = V_{ICR(\min)}$ | 25°C | 50 | 80 | | dB | |
| k_{SVR} Supply-voltage rejection ratio ($\Delta V_{DD}/\Delta V_{IO}$) | $V_{CC} = 5\text{ V to MAX}$ | 25°C | 65 | 100 | | dB | |
| V_{O1}/V_{O2} Crosstalk attenuation | $f = 1\text{ kHz to }20\text{ kHz}$ | 25°C | | 120 | | dB | |
| I_O Output current | $V_{CC} = 15\text{ V}$, $V_{ID} = 1\text{ V}$, $V_O = 0$ | 25°C | -20 | -30 | | mA | |
| | | Full range | -10 | | | | |
| | $V_{CC} = 15\text{ V}$, $V_{ID} = -1\text{ V}$, $V_O = 15\text{ V}$ | 25°C | 10 | 20 | | | |
| | | Full range | 5 | | | | |
| $V_{ID} = -1\text{ V}$, $V_O = 200\text{ mV}$ | 25°C | | 30 | | μA | | |
| I_{OS} Short-circuit output current | V_{CC} at 5 V, GND at -5 V, $V_O = 0$ | 25°C | ± 40 | ± 60 | | mA | |
| I_{CC} Supply current (two amplifiers) | $V_O = 2.5\text{ V}$, No load | Full range | 0.7 | 1.2 | | mA | |
| | $V_{CC} = \text{MAX}$, $V_O = 0.5\text{ V}$, No load | Full range | 1 | 2 | | | |

† All characteristics are measured under open-loop conditions with zero common-mode input voltage, unless otherwise specified. MAX V_{CC} for testing purposes is 26 V for LM 2904 and 30 V for others.

‡ Full range is -55°C to 125°C for LM158, -25°C to 85°C for LM258, 0°C to 70°C for LM358, and -40°C to 125°C for LM2904 and LM2904Q.

§ All typical values are at $T_A = 25^\circ\text{C}$.



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electrical characteristics at specified free-air temperature, $V_{CC} = 5\text{ V}$ (unless otherwise noted)

| PARAMETER | TEST CONDITIONS† | T_A ‡ | LM158A | | | LM258A | | | UNIT |
|--|--|------------|------------------------------|-------------------|--------------|-------------------|--------------|------|------------------------------|
| | | | MIN | TYP§ | MAX | MIN | TYP§ | MAX | |
| V_{IO} Input offset voltage | $V_{CC} = 5\text{ V to }30\text{ V}$, $V_{IC} = V_{ICR}(\text{min})$, $V_O = 1.4\text{ V}$ | 25°C | | | 2 | | 2 | 3 | mV |
| | | Full range | | | 4 | | | 4 | |
| α_{VIO} Average temperature coefficient of input offset voltage | | Full range | | 7 | 15* | | 7 | 15 | $\mu\text{V}/^\circ\text{C}$ |
| I_{IO} Input offset current | $V_O = 1.4\text{ V}$ | 25°C | | | 2 | | 2 | 15 | nA |
| | | Full range | | | | | | 30 | |
| α_{IIO} Average temperature coefficient of input offset current | | Full range | | 10 | 200 | | 10 | 200 | $\text{pA}/^\circ\text{C}$ |
| I_{IB} Input bias current | $V_O = 1.4\text{ V}$ | 25°C | | | -15 | | -15 | -80 | nA |
| | | Full range | | | | | | -100 | |
| V_{ICR} Common-mode input voltage range | $V_{CC} = 30\text{ V}$ | 25°C | | 0 to $V_{CC}-1.5$ | | 0 to $V_{CC}-1.5$ | | | V |
| | | Full range | | 0 to $V_{CC}-2$ | | 0 to $V_{CC}-2$ | | | |
| V_{OH} High-level output voltage | $R_L \geq 2\text{ k}\Omega$ $V_{CC} = 30\text{ V}$ | 25°C | | | $V_{CC}-1.5$ | | $V_{CC}-1.5$ | | V |
| | | Full range | $R_L = 2\text{ k}\Omega$ | | 26 | | 26 | | |
| | | | $R_L \geq 10\text{ k}\Omega$ | | 27 | 28 | | 27 | |
| V_{OL} Low-level output voltage | $R_L \leq 10\text{ k}\Omega$ | Full range | | | 5 | | 5 | 20 | mV |
| A_{VD} Large-signal differential voltage amplification | $V_{CC} = 15\text{ V}$, $V_O = 1\text{ V to }11\text{ V}$, $R_L \geq 2\text{ k}\Omega$ | 25°C | | 50 | 100 | | 50 | 100 | V/mV |
| | | Full range | | 25 | | | 25 | | |
| CMRR Common-mode rejection ratio | | 25°C | | 70 | 80 | | 70 | 80 | dB |
| k_{SVR} Supply-voltage rejection ratio ($\Delta V_{DD}/\Delta V_{IO}$) | | 25°C | | 65 | 100 | | 65 | 100 | dB |
| V_{O1}/V_{O2} Crosstalk attenuation | $f = 1\text{ kHz to }20\text{ kHz}$ | 25°C | | | 120 | | | 120 | dB |

*On products compliant to MIL-PRF-38535, this parameter is not production tested.

† All characteristics are measured under open-loop conditions with zero common-mode input voltage, unless otherwise specified.

‡ Full range is -55°C to 125°C for LM158A, -25°C to 85°C for LM258A, and 0°C to 70°C for LM358A.

§ All typical values are at $T_A = 25^\circ\text{C}$.



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 LM358, LM358A, LM358Y, LM2904, LM2904Q
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electrical characteristics at specified free-air temperature, $V_{CC} = 5\text{ V}$ (unless otherwise noted)

| PARAMETER | TEST CONDITIONS† | T_A ‡ | LM358A | | | UNIT |
|--|---|------------|------------------------------|------|------|------------------------------|
| | | | MIN | TYP§ | MAX | |
| V_{IO} Input offset voltage | $V_{CC} = 5\text{ V to }30\text{ V}$, $V_{IC} = V_{ICR}(\text{min})$, $V_O = 1.4\text{ V}$ | 25°C | 2 | 3 | | mV |
| | | Full range | | | 5 | |
| α_{VIO} Average temperature coefficient of input offset voltage | | Full range | 7 | 20 | | $\mu\text{V}/^\circ\text{C}$ |
| I_{IO} Input offset current | $V_O = 1.4\text{ V}$ | 25°C | 2 | 30 | | nA |
| | | Full range | | | 75 | |
| α_{IIO} Average temperature coefficient of input offset current | | Full range | 10 | 300 | | $\text{pA}/^\circ\text{C}$ |
| I_{IB} Input bias current | $V_O = 1.4\text{ V}$ | 25°C | -15 | -100 | | nA |
| | | Full range | | | -200 | |
| V_{ICR} Common-mode input voltage range | $V_{CC} = 30\text{ V}$ | 25°C | 0 to $V_{CC}-1.5$ | | | V |
| | | Full range | 0 to $V_{CC}-2$ | | | |
| V_{OH} High-level output voltage | $R_L \geq 2\text{ k}\Omega$ $V_{CC} = 30\text{ V}$ | 25°C | $V_{CC}-1.5$ | | | V |
| | | Full range | $R_L = 2\text{ k}\Omega$ | 26 | | |
| | | | $R_L \geq 10\text{ k}\Omega$ | 27 | 28 | |
| V_{OL} Low-level output voltage | $R_L \leq 10\text{ k}\Omega$ | Full range | 5 | 20 | | mV |
| A_{VD} Large-signal differential voltage amplification | $V_{CC} = 15\text{ V}$, $V_O = 1\text{ V to }11\text{ V}$, $R_L = \geq 2\text{ k}\Omega$ | 25°C | 25 | 100 | | V/mV |
| | | Full range | 15 | | | |
| CMRR Common-mode rejection ratio | | 25°C | 65 | 80 | | dB |
| k_{SVR} Supply-voltage rejection ratio ($\Delta V_{DD}/\Delta V_{IO}$) | | 25°C | 65 | 100 | | dB |
| V_{O1}/V_{O2} Crosstalk attenuation | $f = 1\text{ kHz to }20\text{ kHz}$ | 25°C | 120 | | | dB |

† All characteristics are measured under open-loop conditions with zero common-mode input voltage, unless otherwise specified.

‡ Full range is -55°C to 125°C for LM158A, -25°C to 85°C for LM258A, and 0°C to 70°C for LM358A.

§ All typical values are at $T_A = 25^\circ\text{C}$.

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electrical characteristics $V_{CC} = 5\text{ V}$, $T_A = 25^\circ\text{C}$ (unless otherwise noted)

| PARAMETER | TEST CONDITIONS† | LM358Y | | | UNIT | |
|---|--|--|----------|----------|------|----|
| | | MIN | TYP | MAX | | |
| V_{IO} Input offset voltage | $V_{CC} = 5\text{ V to MAX}$, $V_{IC} = V_{ICR(\text{min})}$, $V_O = 1.4\text{ V}$ | | 3 | 7 | mV | |
| I_{IO} Input offset current | | | 2 | 50 | nA | |
| I_{IB} Input bias current | | | -20 | -250 | nA | |
| V_{ICR} Common-mode input voltage range | $V_{CC} = 5\text{ V to MAX}$ | 0 to $V_{CC}-1.5$ | | | V | |
| V_{OH+} High-level output voltage | $R_L \geq 10\text{ k}\Omega$ | $V_{CC}-1.5$ | | | V | |
| A_{VD} Large-signal differential voltage amplification | $V_{CC} = 15\text{ V}$, $V_O = 1\text{ V to }11\text{ V}$, $R_L = \geq 2\text{ k}\Omega$ | 15 | 100 | | V/mV | |
| CMRR Common-mode rejection ratio | $V_{IC} = V_{ICR(\text{min})}$ | 65 | 80 | | dB | |
| k_{SVR} Supply-voltage rejection ratio ($\Delta V_{CC\pm}/\Delta V_{IO}$) | | 65 | 100 | | dB | |
| I_O Output current | $V_{CC} = 15\text{ V}$ | $V_{ID} = 1\text{ V}$, $V_O = 0$ | -20 | -30 | -60 | mA |
| | | $V_{ID} = -1\text{ V}$, $V_O = 15\text{ V}$ | 10 | 20 | | |
| | $V_{ID} = 1\text{ V}$, $V_O = 200\text{ mV}$ | 12 | 30 | | | |
| I_{OS} Short-circuit output current | V_{CC} at 5 V, GND at -5 V, $V_O = 0$ | | ± 40 | ± 60 | | mA |
| I_{CC} Supply current (four amplifiers) | $V_O = 2.5\text{ V}$, No load | | 0.7 | 1.2 | | mA |
| | $V_{CC} = \text{MAX}$, $V_O = 0.5\text{ V}$, No load | | 1 | 2 | | |

† All characteristics are measured under open-loop conditions with zero common-mode input voltage, unless otherwise specified. MAX V_{CC} for testing purposes is 30 V.

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