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High Speed Operational Amplifiers and Buffers

Specs at T<sub>A</sub> = 25°C and V<sub>S</sub> = +5 V

| Mfr.'s Type |        |          | Slew Rate<br>(V/μs)<br>Typ. | GBW<br>(MHz)<br>Typ. | V <sub>os</sub><br>(mV)<br>Max. | I <sub>s</sub><br>(mA)<br>Max. | No. of Leads  | Temperature Range<br>(°C) |
|-------------|--------|----------|-----------------------------|----------------------|---------------------------------|--------------------------------|---------------|---------------------------|
| Metal Can   | SOIC   | PDIP     |                             |                      |                                 |                                |               |                           |
| —           | LF353M | LF353N   | 13                          | 4                    | 10.0                            | 6.5                            | H08, M08, N08 | 0 to +70                  |
| —           | —      | LF411ACN | 15                          | 4                    | 0.5                             | 2.8                            | N08           | 0 to +70                  |
| —           | —      | LF412ACN | 15                          | 4                    | 1.0                             | 5.6                            | N08           | 0 to +70                  |
| LM318H      | —      | LM318N   | 70                          | 15                   | 4.0                             | 7.0                            | H08, N08      | 0 to +70                  |
| —           | —      | LM6361N  | 300                         | 50                   | 7.0                             | 6.8                            | N08           | 0 to +70                  |
| —           | —      | LM6364N  | 300                         | 175                  | 4.0                             | 6.8                            | N08           | 0 to +70                  |
| —           | —      | LM61811N | 2000                        | 100                  | 7.0                             | 10.0                           | N08           | −20 to +85                |
| —           | —      | LM6218N  | 140                         | 17                   | 3.0                             | 3.5                            | N08           | −20 to +85                |
| —           | —      | LM6321N  | 800                         | 50                   | 100.0                           | 20.0                           | N08           | 0 to +70                  |

Package Code Key (Letter = Pkg Type, Number = # of pins).

Low Power Operational Amplifiers

Dual

Specs at T<sub>A</sub> = 25°C and V<sub>S</sub> = +5 V

| Mfr.'s Type | I <sub>s</sub><br>(μA)<br>Typ. | V <sub>os</sub><br>(mV)<br>Max. | I <sub>b</sub><br>(fA)<br>Typ. | CMVR<br>(V)<br>Typ. | Output Swing (V)<br>Typ. With R <sub>L</sub> = 2 kΩ | GBW<br>(MHz)<br>Typ. | Supply Voltage |             | No. of Leads | Temperature Range<br>(°C) |
|-------------|--------------------------------|---------------------------------|--------------------------------|---------------------|-----------------------------------------------------|----------------------|----------------|-------------|--------------|---------------------------|
|             |                                |                                 |                                |                     |                                                     |                      | Min.<br>(V)    | Max.<br>(V) |              |                           |
| LMC662CN    | 750                            | 6                               | 2                              | −0.4 to 3.1         | 0.10 to 4.87                                        | 1.4                  | 5              | 15          | N08          | −20 to +85                |

Quads

|           |      |   |   |             |              |     |   |    |     |            |
|-----------|------|---|---|-------------|--------------|-----|---|----|-----|------------|
| LMC660CM  | 1500 | 6 | 2 | −0.4 to 3.1 | 0.10 to 4.87 | 1.4 | 5 | 15 | M14 | −20 to +85 |
| LMC660CN  | 1500 | 6 | 2 | −0.4 to 3.1 | 0.10 to 4.87 | 1.4 | 5 | 15 | N14 | −20 to +85 |
| LMC660AIM | 1500 | 3 | 2 | −0.4 to 3.1 | 0.10 to 4.87 | 1.4 | 5 | 15 | M14 | −20 to +85 |

General Purpose Operational Amplifiers

Specs at T<sub>A</sub> = 25°C and V<sub>S</sub> = +5V

| Mfr.'s Type |         |          | V <sub>os</sub><br>(mV)<br>Max. | I <sub>b</sub><br>(nA)<br>Max. | GBW<br>(MHz)<br>Typ. | Slew Rate<br>(V/μs)<br>Typ. | Supply Current<br>(mA)<br>Max. | Supply Voltage |             | No. of Leads  | Temperature Range<br>(°C) |
|-------------|---------|----------|---------------------------------|--------------------------------|----------------------|-----------------------------|--------------------------------|----------------|-------------|---------------|---------------------------|
| Metal Can   | SOIC    | PDIP     |                                 |                                |                      |                             |                                | Min.<br>(V)    | Max.<br>(V) |               |                           |
| LF156H      | —       | —        | 5.0                             | 0.100                          | 5.000                | 12.00                       | 7.00                           | ±5.0           | ±22.0       | H08           | −55 to +125               |
| LF356H      | LF356M  | LF356N   | 5.0                             | 0.100                          | 5.000                | 12.00                       | 7.00                           | ±5.0           | ±22.0       | H08, M08, N08 | 0 to +70                  |
| —           | LF347M  | LF347N   | 10.0                            | 0.200                          | 4.000                | 13.00                       | 11.00                          | ±6.0           | ±18.0       | M14, N14      | 0 to +70                  |
| —           | —       | LF367N   | 5.0                             | 0.100                          | 20.000               | 50.00                       | 7.00                           | ±5.0           | ±22.0       | N08           | 0 to +70                  |
| —           | —       | LF411CN  | 2.0                             | 0.200                          | 4.000                | 15.00                       | 3.40                           | ±6.0           | ±18.0       | N08           | 0 to +70                  |
| —           | —       | LF411ACN | 0.5                             | 0.200                          | 4.000                | 15.00                       | 2.80                           | ±6.0           | ±22.0       | N08           | 0 to +70                  |
| —           | —       | LF412CN  | 3.0                             | 0.200                          | 4.000                | 15.00                       | 6.50                           | ±6.0           | ±18.0       | N08           | 0 to +70                  |
| —           | —       | LF412ACN | 1.0                             | 0.200                          | 4.000                | 15.00                       | 5.60                           | ±6.0           | ±22.0       | N08           | 0 to +70                  |
| —           | —       | LF442ACN | 0.5                             | 0.050                          | 1.000                | 1.00                        | 0.20                           | ±6.0           | ±22.0       | N08           | 0 to +70                  |
| —           | —       | LF444ACN | 5.0                             | 50.000                         | 1.000                | 1.00                        | 0.80                           | ±6.0           | ±22.0       | N14           | 0 to +70                  |
| LM10CH      | —       | LM10CN   | 2.0                             | 20.000                         | 0.090                | 0.10                        | 0.40                           | ±0.6           | ±22.5       | H08, N08      | 0 to +70                  |
| —           | —       | LM10CLN  | 2.0                             | 20.000                         | 0.090                | 0.10                        | 0.40                           | ±0.6           | ±3.5        | N08           | 0 to +70                  |
| LM201AH     | —       | —        | 2.0                             | 75.000                         | 1.000                | 0.50                        | 3.00                           | ±3.0           | ±22.0       | H08           | −20 to +85                |
| LM301AH     | —       | LM301AN  | 2.0                             | 75.000                         | 1.000                | 0.50                        | 3.00                           | ±3.0           | ±22.0       | H08, N08      | 0 to +70                  |
| LM108AH     | —       | —        | 0.5                             | 2.000                          | 1.000                | 0.30                        | 0.60                           | ±2.0           | ±20.0       | H08           | −55 to +125               |
| LM308AH     | —       | —        | 0.5                             | 7.000                          | 1.000                | 0.30                        | 0.60                           | ±2.0           | ±18.0       | H08, M08, N08 | 0 to +70                  |
| —           | —       | LM124J*  | 5.0                             | 150.000                        | 1.000                | 0.50                        | 3.00                           | 3.0            | 32.0        | J14           | −55 to +125               |
| —           | —       | LM224J*  | 5.0                             | 150.000                        | 1.000                | 0.50                        | 3.00                           | 3.0            | 32.0        | J14           | −20 to +85                |
| —           | LM324M  | LM324N   | 5.0                             | 150.000                        | 1.000                | 0.50                        | 3.00                           | 3.0            | 32.0        | M14, N14      | 0 to +70                  |
| —           | —       | LM124AJ  | 2.0                             | 50.000                         | 1.000                | 0.50                        | 3.00                           | 3.0            | 32.0        | J14           | −55 to +125               |
| —           | LM324AM | LM324AN  | 2.0                             | 50.000                         | 1.000                | 0.50                        | 3.00                           | 3.0            | 32.0        | M14, N14      | 0 to +70                  |
| —           | —       | LM346N   | 5.0                             | 100.000                        | 1.200                | 0.40                        | 2.20                           | ±1.5           | ±22.0       | N16           | 0 to +70                  |
| —           | —       | LM148J*  | 5.0                             | 100.000                        | 1.000                | 0.50                        | 3.60                           | ±5.0           | ±22.0       | J14           | −55 to +125               |
| —           | —       | LM348N   | 5.0                             | 100.000                        | 1.000                | 0.50                        | 3.60                           | ±5.0           | ±22.0       | N14           | 0 to +70                  |
| LM158H      | —       | —        | 5.0                             | 150.000                        | 1.000                | 0.50                        | 2.00                           | 3.0            | 32.0        | H08           | −55 to +125               |
| —           | LM358M  | LM358N   | 5.0                             | 150.000                        | 1.000                | 0.50                        | 2.00                           | 3.0            | 32.0        | N08           | 0 to +70                  |
| —           | —       | LM358AN  | 2.0                             | 50.000                         | 1.000                | 0.50                        | 2.00                           | 3.0            | 32.0        | N08           | 0 to +70                  |
| LM741CH     | —       | LM741CN  | 5.0                             | 500.000                        | 1.000                | 0.50                        | 2.80                           | ±3.0           | ±22.0       | H08, M08, N08 | 0 to +70                  |
| —           | LM1458M | —        | 5.0                             | 500.000                        | —                    | —                           | 5.00                           | ±3.0           | ±22.0       | M08, N08      | −55 to +125               |
| —           | —       | LM4250CN | 5.0                             | 50.000                         | 0.200                | 0.20                        | 0.10                           | ±1.0           | ±18.0       | M08           | 0 to +70                  |

\*CERDIP Package.

Voltage Comparators

| Mfr.'s Type |         |          | Response Time<br>(ns)<br>Typ. | V <sub>os</sub><br>(mV)<br>Max. | I <sub>s</sub><br>(mA)<br>Max. | I <sub>b</sub><br>(nA)<br>Max. | No. of Leads  | Temperature Range<br>(°C) |
|-------------|---------|----------|-------------------------------|---------------------------------|--------------------------------|--------------------------------|---------------|---------------------------|
| Metal Can   | SOIC    | PDIP     |                               |                                 |                                |                                |               |                           |
| LM111H      | —       | LM111J-8 | 200                           | 7.5                             | 7.500                          | 250.00                         | H08, N08      | −55 to +125               |
| LM311H      | LM311M  | LM311N   | 200                           | 7.5                             | 7.500                          | 250.00                         | H08, M08, N08 | 0 to +70                  |
| —           | LM319M  | LM319N   | 80                            | 8.0                             | 12.500                         | 1000.00                        | J14, N14      | 0 to +70                  |
| —           | —       | LM139J   | 1300                          | 5.0                             | 2.500                          | 250.00                         | J14           | −55 to +125               |
| —           | LM339M  | LM339N   | 1300                          | 5.0                             | 2.500                          | 250.00                         | M14, N14      | 0 to +70                  |
| —           | —       | LM360N   | 14                            | 5.0                             | 32.000                         | 20,000.00                      | N08           | 0 to +70                  |
| —           | —       | LM361N   | 14                            | 5.0                             | 20.000                         | 30,000.00                      | N14           | 0 to +70                  |
| LM193H      | —       | —        | 1300                          | 5.0                             | 2.500                          | 250.00                         | H08           | −55 to +125               |
| —           | LM393M  | LM393N   | 1300                          | 5.0                             | 2.500                          | 250.00                         | H08, N08      | 0 to +70                  |
| —           | LM2901M | LM2901N  | 1300                          | 7.0                             | 2.500                          | 250.00                         | M14, N14      | −20 to +85                |
| —           | LM2903M | LM2903N  | 1500                          | 7.0                             | 2.500                          | 250.00                         | M08, N08      | −20 to +85                |
| —           | LM392M  | LM392N   | 1300                          | 10.0                            | 1.000                          | 400.00                         | M08, N08      | 0 to +70                  |
| —           | LP339M  | LP339N   | 8000                          | 5.0                             | 0.100                          | 25.00                          | M14, N14      | 0 to +70                  |