

# LF353

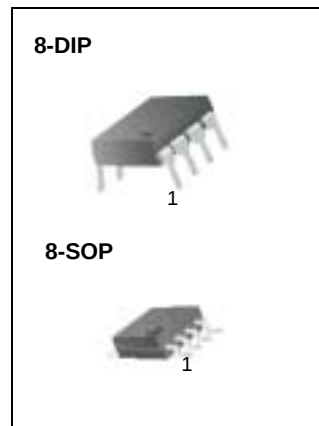
## Dual Operational Amplifier (JFET)

### Features

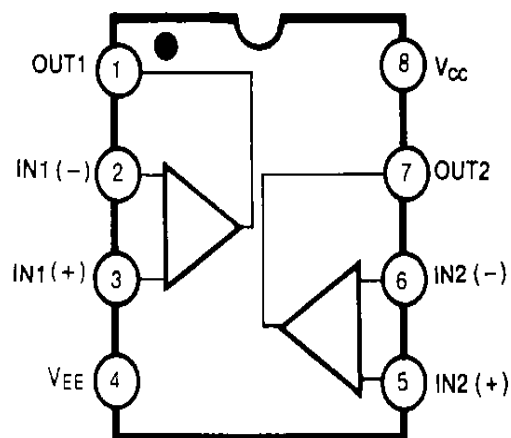
- Internally trimmed offset voltage: 10mV
- Low input bias current: 50pA
- Wide gain bandwidth: 4MHz
- High slew rate: 13V/μs
- High Input impedance:  $10^{12}\Omega$

### Description

The LF353 is a JFET input operational amplifier with an internally compensated input offset voltage. The JFET input device provides wide bandwidth, low input bias currents and offset currents.

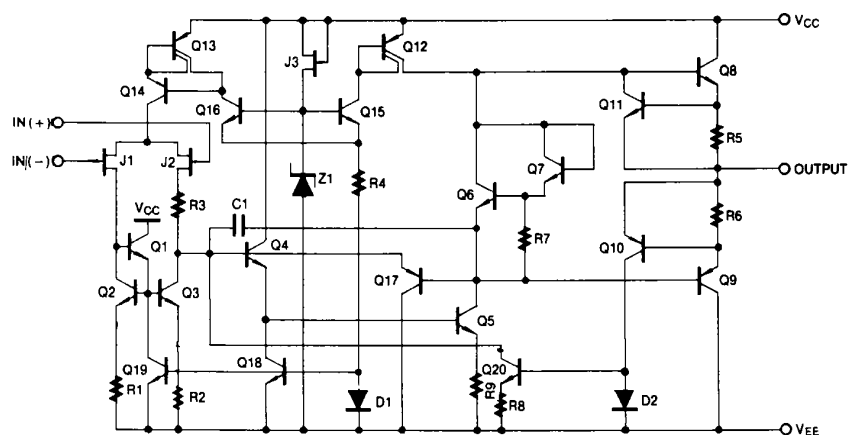


### Internal Block Diagram



## Schematic Diagram

(One Section Only)



## Absolute Maximum Ratings

| Parameter                     | Symbol   | Value      | Unit |
|-------------------------------|----------|------------|------|
| Power Supply Voltage          | VCC      | ±18        | V    |
| Differential Input Voltage    | VI(DIFF) | 30         | V    |
| Input Voltage Range           | VI       | ±15        | V    |
| Output Short Circuit Duration | -        | Continuous | -    |
| Power Dissipation             | PD       | 500        | mW   |
| Operating Temperature Range   | TOPR     | 0 ~ +70    | °C   |
| Storage Temperature Range     | TSTG     | -65 ~ +150 | °C   |

## Electrical Characteristics

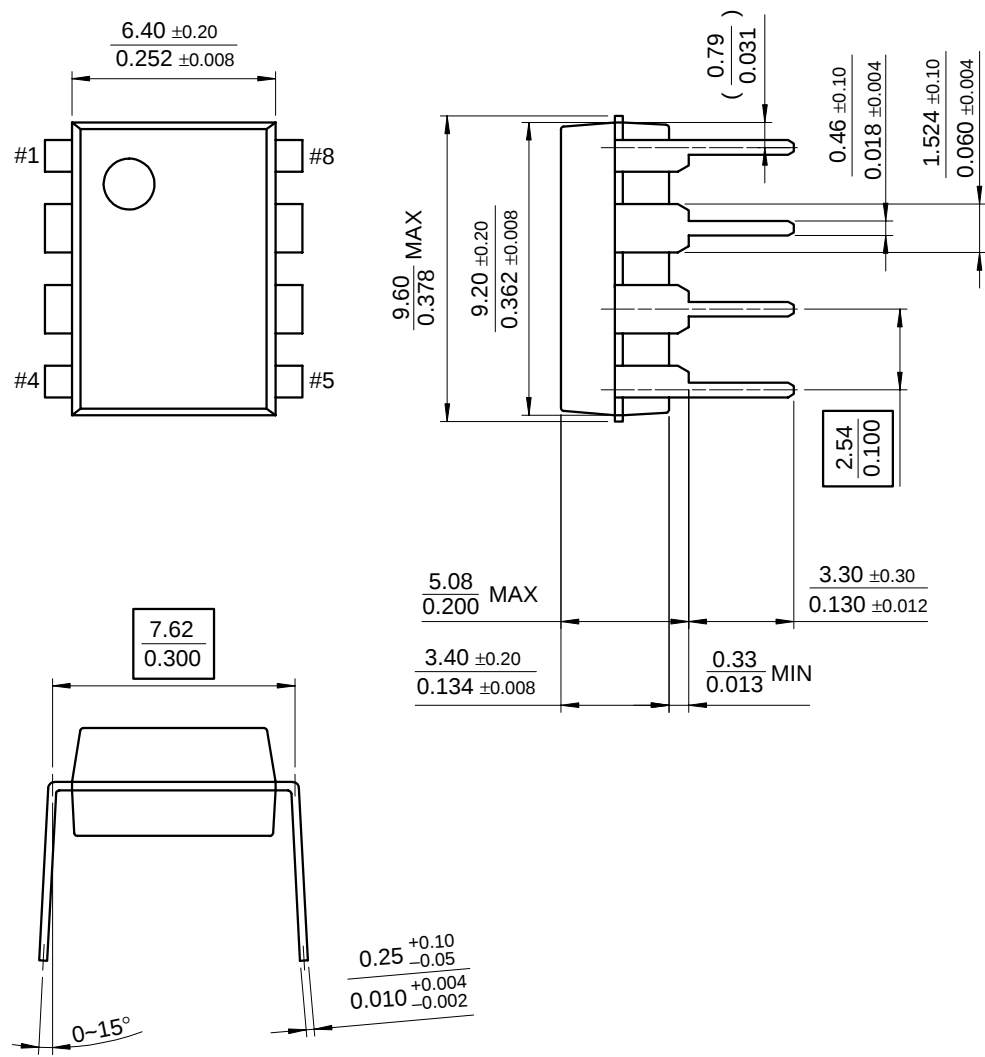
(VCC = +15V, VEE = -15V, TA = 25 °C, unless otherwise specified)

| Parameter                      | Symbol               | Conditions                            | Min. | Typ.             | Max. | Unit       |
|--------------------------------|----------------------|---------------------------------------|------|------------------|------|------------|
| Input Offset Voltage           | V <sub>IO</sub>      | R <sub>S</sub> = 10KΩ                 | -    | 5.0              | 10   | mV         |
|                                |                      | 0 °C ≤ T <sub>A</sub> ≤ +70 °C        | -    | -                | -    | -          |
| Input Offset Voltage Drift     | ΔV <sub>IO</sub> /ΔT | R <sub>S</sub> = 10KΩ                 | -    | 10               | -    | μV/°C      |
| Input Offset Current           | I <sub>IO</sub>      |                                       | -    | 25               | 100  | pA         |
|                                |                      | 0 °C ≤ T <sub>A</sub> ≤ +70 °C        | -    | -                | 4    | nA         |
| Input Bias Current             | I <sub>BIAS</sub>    |                                       | -    | 50               | 200  | pA         |
|                                |                      | 0 °C ≤ T <sub>A</sub> ≤ +70 °C        | -    | -                | 8    | nA         |
| Input Resistance               | R <sub>I</sub>       | -                                     | -    | 10 <sup>12</sup> | -    | Ω          |
| Large Signal Voltage Gain      | G <sub>V</sub>       | V <sub>O</sub> (P-P) = ±10V           | 25   | 100              | -    | V/mV       |
|                                |                      | R <sub>L</sub> = 2KΩ                  | 15   | -                | -    | -          |
|                                |                      | 0 °C ≤ T <sub>A</sub> ≤ +70 °C        |      |                  |      |            |
| Output Voltage Swing           | V <sub>O</sub> (P-P) | R <sub>L</sub> = 10KΩ                 | ±12  | ±13.5            | -    | V          |
| Input Voltage Range            | V <sub>I</sub> (R)   | -                                     | ±11  | ±15/-12          | -    | V          |
| Common Mode Rejection Ratio    | CMRR                 | R <sub>S</sub> ≤ 10KΩ                 | 70   | 100              | -    | dB         |
| Power Supply Rejection Ratio   | PSRR                 | R <sub>S</sub> ≤ 10KΩ                 | 70   | 100              | -    | dB         |
| Power Supply Current           | I <sub>CC</sub>      | -                                     | -    | 3.6              | 6.5  | mA         |
| Slew Rate                      | SR                   | G <sub>V</sub> = 1                    | -    | 13               | -    | V/μS       |
| Gain-Bandwidth Product         | GBW                  | -                                     | -    | 4                | -    | MHz        |
| Channel Separation             | CS                   | f = 1Hz ~ 20KHz<br>(Input referenced) | -    | 120              | -    | dB         |
| Equivalent Input Noise Voltage | V <sub>NI</sub>      | R <sub>S</sub> = 100Ω<br>f = 1KHz     | -    | 16               | -    | nV/<br>√Hz |
| Equivalent Input Noise Current | I <sub>NI</sub>      | f = 1KHz                              | -    | 0.01             | -    | pA/<br>√Hz |

Mechanical Dimensions

Package

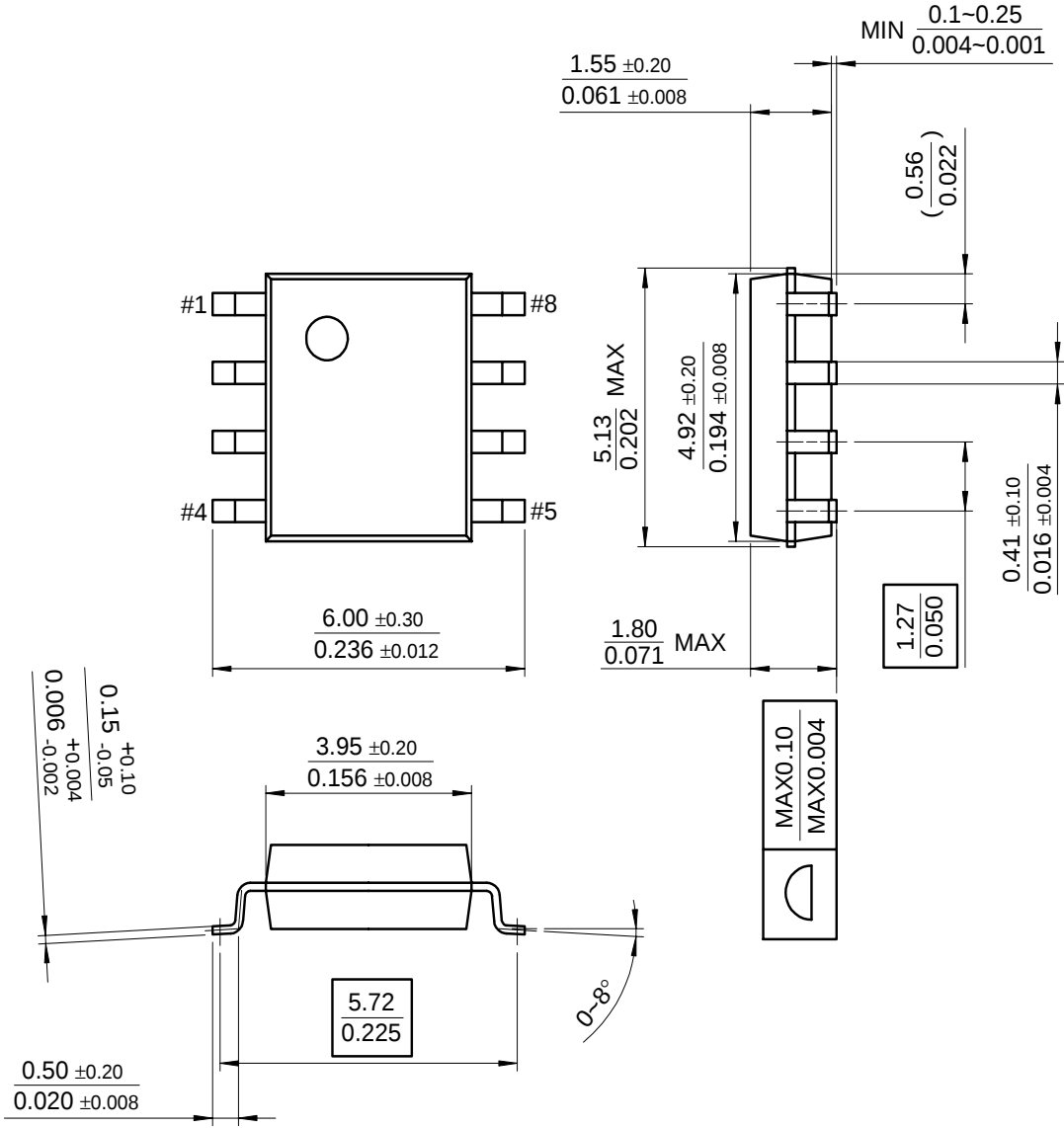
8-DIP



# Mechanical Dimensions

## Package

### 8-SOP



## Ordering Information

| Product Number | Package | Operating Temperature |
|----------------|---------|-----------------------|
| LF353N         | 8-DIP   | 0 ~ + 70°C            |
| LF353M         | 8-SOP   |                       |

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