

LF353

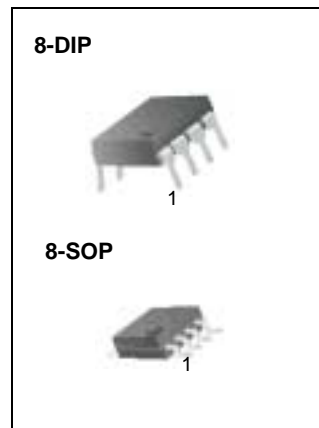
Dual Operational Amplifier (JFET)

Features

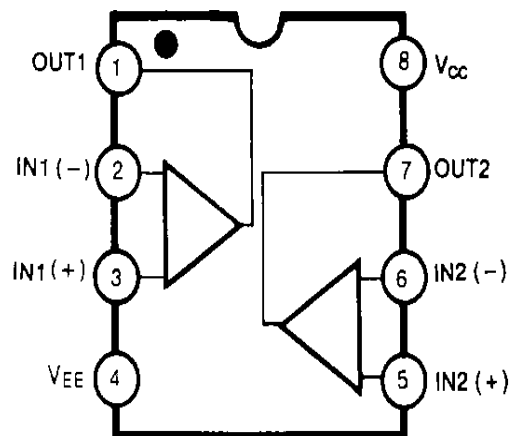
- Internally trimmed offset voltage: 10mV
- Low input bias current: 50pA
- Wide gain bandwidth: 4MHz
- High slew rate: 13V/μs
- High Input impedance: $10^{12}\Omega$

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.

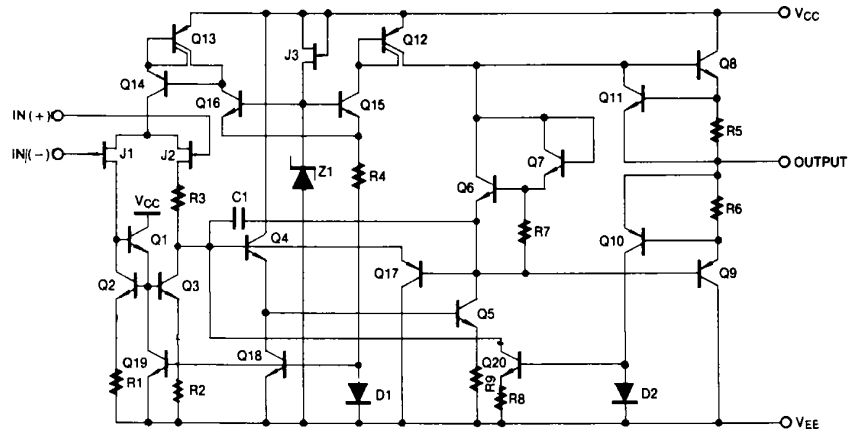


Internal Block Diagram



Schematic Diagram

(One Section Only)



Absolute Maximum Ratings

| Parameter | Symbol | Value | Unit |
|-------------------------------|----------------------|------------|------|
| Power Supply Voltage | VCC | ±18 | V |
| Differential Input Voltage | V _{I(DIFF)} | 30 | V |
| Input Voltage Range | V _I | ±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

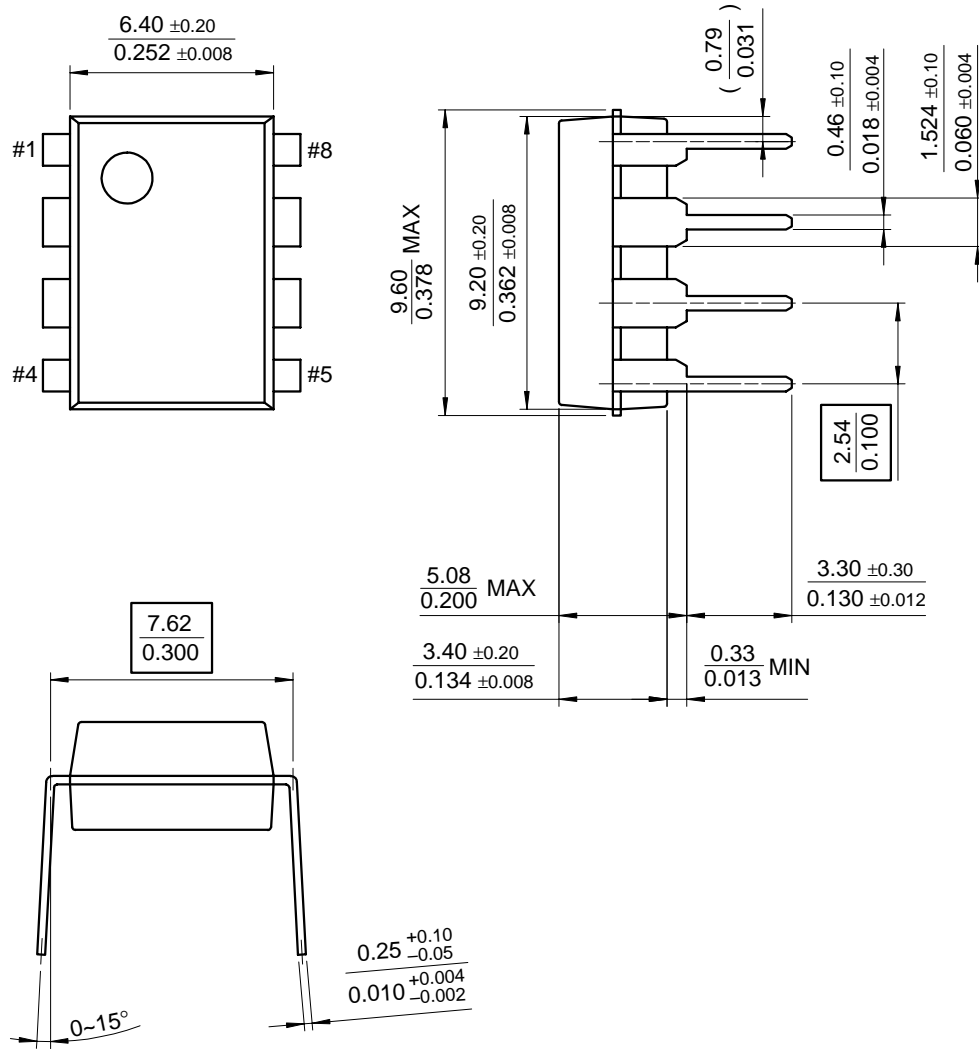
($V_{CC} = +15V$, $V_{EE} = -15V$, $T_A = 25\text{ }^\circ\text{C}$, unless otherwise specified)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|--------------------------------|--------------------------|---|----------|--------------|------|------------------------------|
| Input Offset Voltage | V_{IO} | $R_S = 10K\Omega$ $0\text{ }^\circ\text{C} \leq T_A \leq +70\text{ }^\circ\text{C}$ | - | 5.0 | 10 | mV |
| | | | - | - | - | - |
| Input Offset Voltage Drift | $\Delta V_{IO}/\Delta T$ | $R_S = 10K\Omega$ $0\text{ }^\circ\text{C} \leq T_A \leq +70\text{ }^\circ\text{C}$ | - | 10 | - | $\mu\text{V}/^\circ\text{C}$ |
| Input Offset Current | I_{IO} | $0\text{ }^\circ\text{C} \leq T_A \leq +70\text{ }^\circ\text{C}$ | - | 25 | 100 | pA |
| | | | - | - | 4 | nA |
| Input Bias Current | I_{BIAS} | $0\text{ }^\circ\text{C} \leq T_A \leq +70\text{ }^\circ\text{C}$ | - | 50 | 200 | pA |
| | | | - | - | 8 | nA |
| Input Resistance | R_I | - | - | 10^{12} | - | Ω |
| Large Signal Voltage Gain | G_V | $V_{O(P-P)} = \pm 10V$ $R_L = 2K\Omega$ $0\text{ }^\circ\text{C} \leq T_A \leq +70\text{ }^\circ\text{C}$ | 25 | 100 | - | V/mV |
| | | | 15 | - | - | - |
| Output Voltage Swing | $V_{O(P-P)}$ | $R_L = 10K\Omega$ | ± 12 | ± 13.5 | - | V |
| Input Voltage Range | $V_{I(R)}$ | - | ± 11 | $\pm 15/-12$ | - | V |
| Common Mode Rejection Ratio | CMRR | $R_S \leq 10K\Omega$ | 70 | 100 | - | dB |
| Power Supply Rejection Ratio | PSRR | $R_S \leq 10K\Omega$ | 70 | 100 | - | dB |
| Power Supply Current | I_{CC} | - | - | 3.6 | 6.5 | mA |
| Slew Rate | SR | $G_V = 1$ | - | 13 | - | $\text{V}/\mu\text{S}$ |
| Gain-Bandwidth Product | GBW | - | - | 4 | - | MHz |
| Channel Separation | CS | $f = 1\text{Hz} \sim 20\text{KHz}$ (Input referenced) | - | 120 | - | dB |
| Equivalent Input Noise Voltage | V_{NI} | $R_S = 100\Omega$ $f = 1\text{KHz}$ | - | 16 | - | $\text{nV}/\sqrt{\text{Hz}}$ |
| Equivalent Input Noise Current | I_{NI} | $f = 1\text{KHz}$ | - | 0.01 | - | $\text{pA}/\sqrt{\text{Hz}}$ |

Mechanical Dimensions

Package

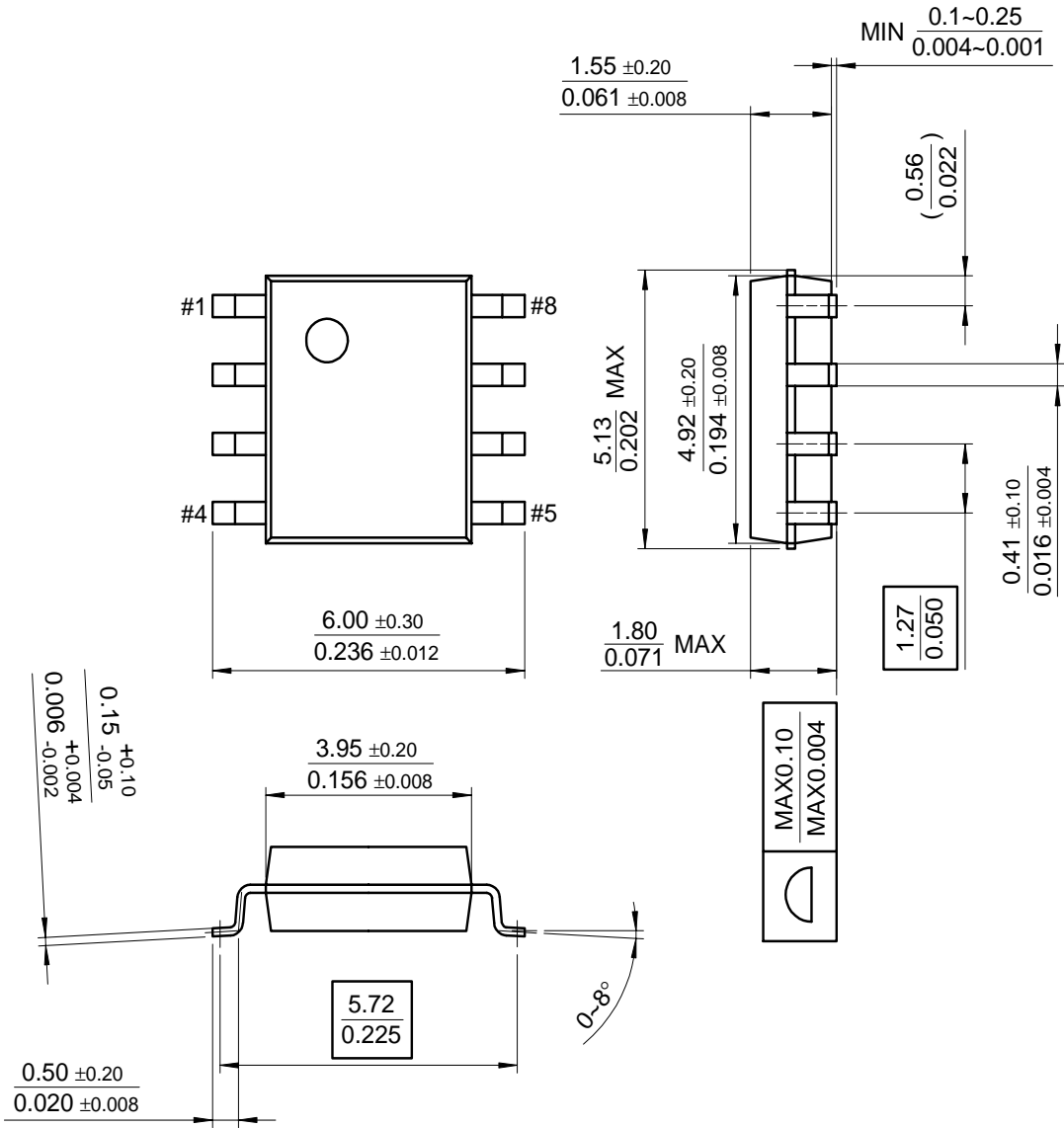
8-DIP



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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