

# LF347

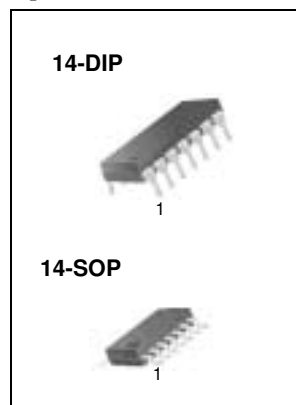
## Quad Operational Amplifier (JFET)

### Features

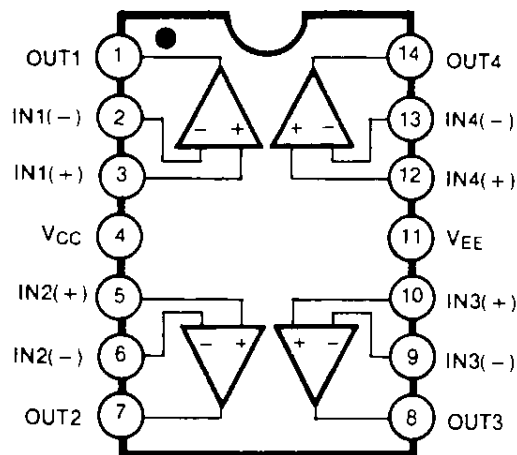
- Low input bias current
- High input impedance
- Wide gain bandwidth: 4 MHz Typ.
- High slew rate: 13 V/μs Typ.

### Description

The LF347 is a high speed quad JFET input operational amplifier. This feature high input impedance, wide bandwidth, high slew rate, and low input offset voltage and bias current. LF347 may be used in circuits requiring high input impedance. High slew rate and wide bandwidth, low input bias current.

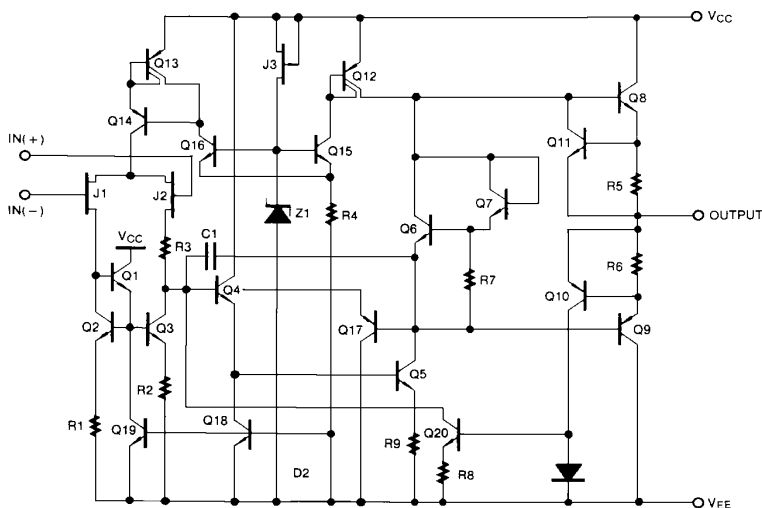


### Internal Block Diagram



## Schematic Diagram

(One Section Only)



## Absolute Maximum Ratings

| Parameter                     | Symbol               | Value       | Unit |
|-------------------------------|----------------------|-------------|------|
| Supply Voltage                | V <sub>CC</sub>      | ±18         | V    |
| Differential Input Voltage    | V <sub>I(DIFF)</sub> | 30          | V    |
| Input Voltage Range           | V <sub>I</sub>       | ±15         | V    |
| Output Short Circuit Duration | -                    | Continuous  | -    |
| Power Dissipation             | P <sub>D</sub>       | 570         | mW   |
| Operating Temperature Range   | T <sub>OPR</sub>     | 0 ~ + 70    | °C   |
| Storage Temperature Range     | T <sub>STG</sub>     | -65 ~ + 150 | °C   |

## Electrical Characteristics

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

| Parameter                         | Symbol               | Conditions                            | LF347 |                  |      | Unit       |
|-----------------------------------|----------------------|---------------------------------------|-------|------------------|------|------------|
|                                   |                      |                                       | Min.  | Typ.             | Max. |            |
| Input Offset Voltage              | V <sub>IO</sub>      | RS = 10KΩ                             | -     | 5                | 10   | mV         |
|                                   |                      | Note 1                                | -     | -                | 13   |            |
| Input Offset Voltage Drift(Note2) | ΔV <sub>IO</sub> /ΔT | RS = 10KΩ                             | -     | 10               | -    | μV/°C      |
| Input Offset Current              | I <sub>IO</sub>      |                                       | -     | 25               | 100  | pA         |
|                                   |                      | Note 1                                | -     | -                | 4    | nA         |
| Input Bias Current                | I <sub>BIAS</sub>    |                                       | -     | 50               | 200  | pA         |
|                                   |                      | Note 1                                | -     | -                | 8    | nA         |
| Large Signal Voltage Gain         | G <sub>V</sub>       | R <sub>L</sub> = 2KΩ                  | 25    | 100              | -    | V/mV       |
|                                   |                      | V <sub>O(P-P)</sub> = ±10V Note 1     | 15    | -                | -    |            |
| Output Voltage Swing              | V <sub>O(PP)</sub>   | R <sub>L</sub> = 10KΩ                 | ±12   | ±13.5            | -    | V          |
| Input Voltage Range               | V <sub>I(R)</sub>    | -                                     | ±11   | +15<br>-12       | -    | V          |
| Common-Mode Rejection Ratio       | CMRR                 | R <sub>S</sub> ≤ 10KΩ                 | 80    | 100              | -    | dB         |
| Power Supply Rejection Ratio      | PSRR                 | R <sub>S</sub> ≤ 10KΩ                 | 80    | 100              | -    | dB         |
| Input Resistance                  | R <sub>I</sub>       | -                                     | -     | 10 <sup>12</sup> | -    | Ω          |
| Supply Current                    | I <sub>CC</sub>      | -                                     | -     | 7.2              | 11   | mA         |
| Slew Rate                         | SR                   | -                                     | -     | 13               | -    | V/μS       |
| Gain Bandwidth Product(Note2)     | GBW                  | -                                     | -     | 4                | -    | MHz        |
| Channel Separation                | CS                   | f = 1Hz ~ 20KHz<br>(input referenced) | -     | 120              | -    | dB         |
| Equivalent Input Noise Voltage    | e <sub>N</sub>       | R <sub>S</sub> = 100Ω<br>f = 1KHz     | -     | 20               | -    | nV/<br>√Hz |
| Equivalent Input Noise Current    | I <sub>N</sub>       | f = 1KHz                              | -     | 0.01             | -    | pA/√Hz     |

### Note :

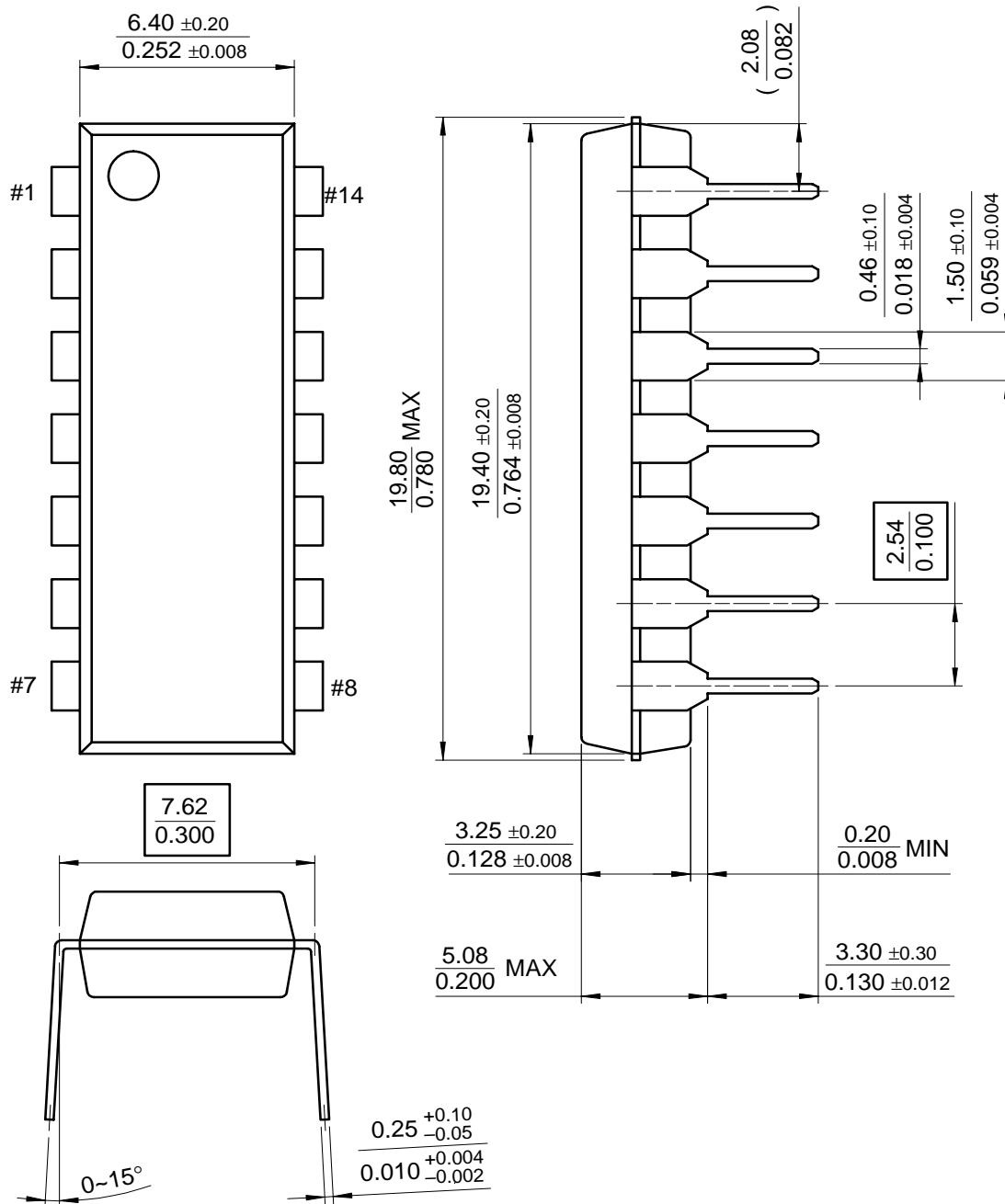
1. LF347 : 0 ≤ T<sub>A</sub> ≤ +70 °C
2. Guaranteed by design

# Mechanical Dimensions

## Package

Dimensions in millimeters

### 14-DIP





## Ordering Information

| Product Number | Package | Operating Temperature |
|----------------|---------|-----------------------|
| LF347N         | 14-DIP  | 0 ~ + 70°C            |
| LF347M         | 14-SOP  |                       |

### DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

### LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.