

# LF353

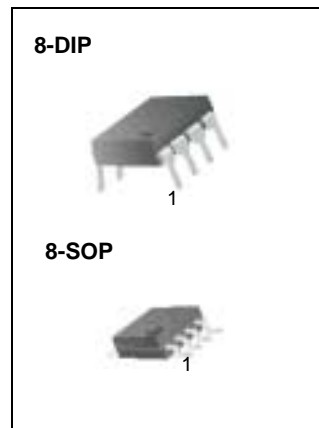
## Dual Operational Amplifier (JFET)

### Features

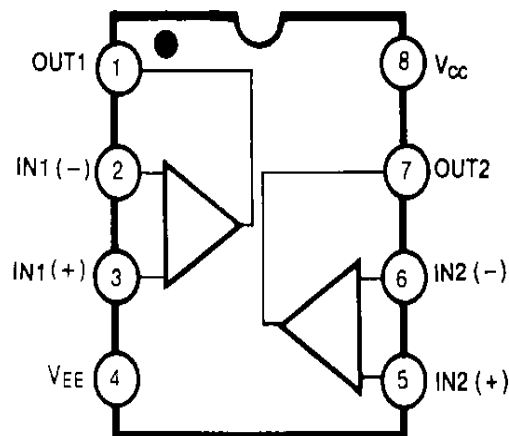
- Internally trimmed offset voltage: 10mV
- Low input bias current: 50pA
- Wide gain bandwidth: 4MHz
- High slew rate: 13V/μs
- High Input impedance:  $10^{12}\Omega$

### 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.

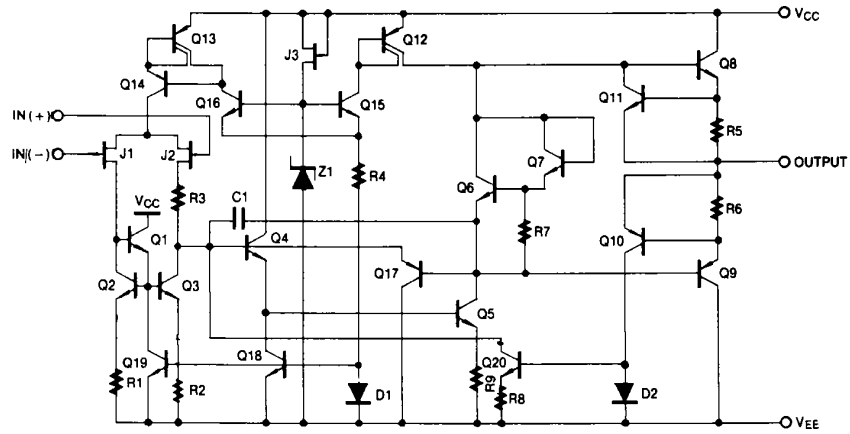


### Internal Block Diagram



## Schematic Diagram

(One Section Only)



## Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Power Supply Voltage	VCC	±18	V
Differential Input Voltage	V <sub>I(DIFF)</sub>	30	V
Input Voltage Range	V <sub>I</sub>	±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

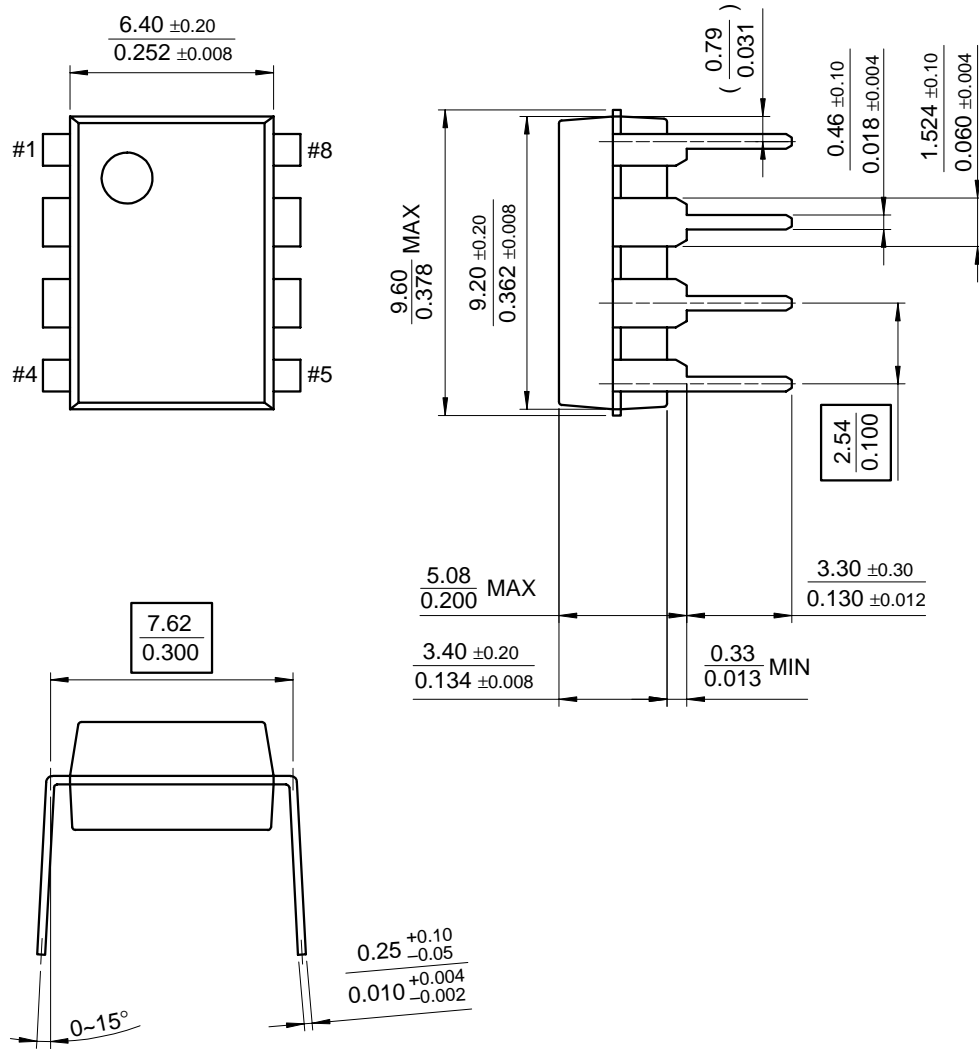
( $V_{CC} = +15V$ ,  $V_{EE} = -15V$ ,  $T_A = 25\text{ }^\circ\text{C}$ , unless otherwise specified)

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	$R_I$	-	-	$10^{12}$	-	$\Omega$
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	$V_{O(P-P)}$	$R_L = 10K\Omega$	$\pm 12$	$\pm 13.5$	-	V
Input Voltage Range	$V_{I(R)}$	-	$\pm 11$	$\pm 15/-12$	-	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





## Ordering Information

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

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Fairchild Semiconductor:](#)

[LF353MX](#) [LF353N](#)