

LF353

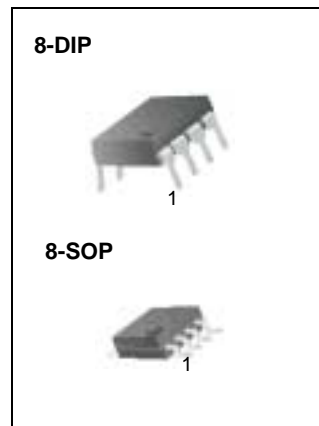
Dual Operational Amplifier (JFET)

Features

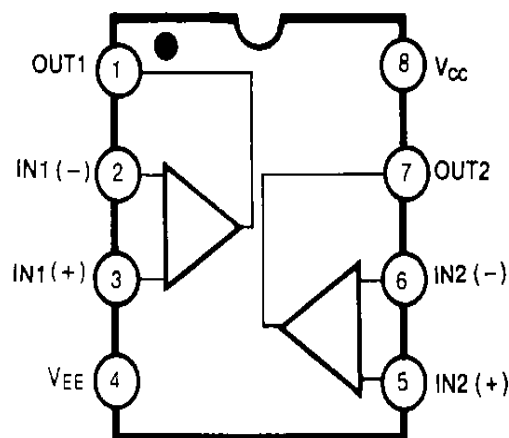
- Internally trimmed offset voltage: 10mV
- Low input bias current: 50pA
- Wide gain bandwidth: 4MHz
- High slew rate: 13V/μs
- High Input impedance: $10^{12}\Omega$

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.

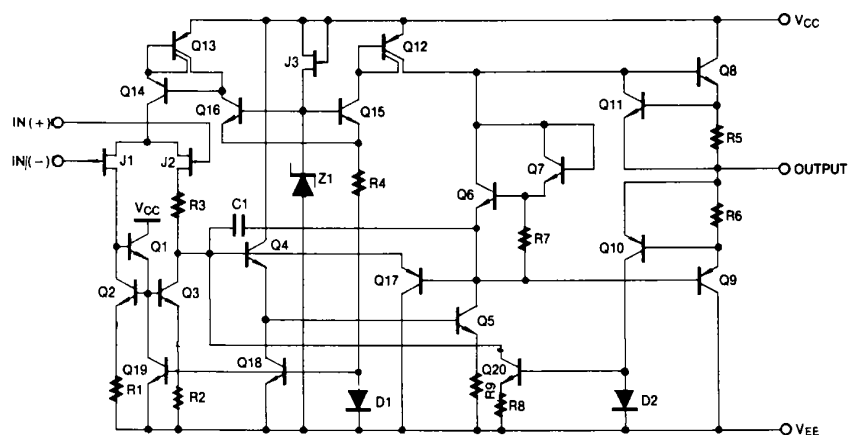


Internal Block Diagram



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

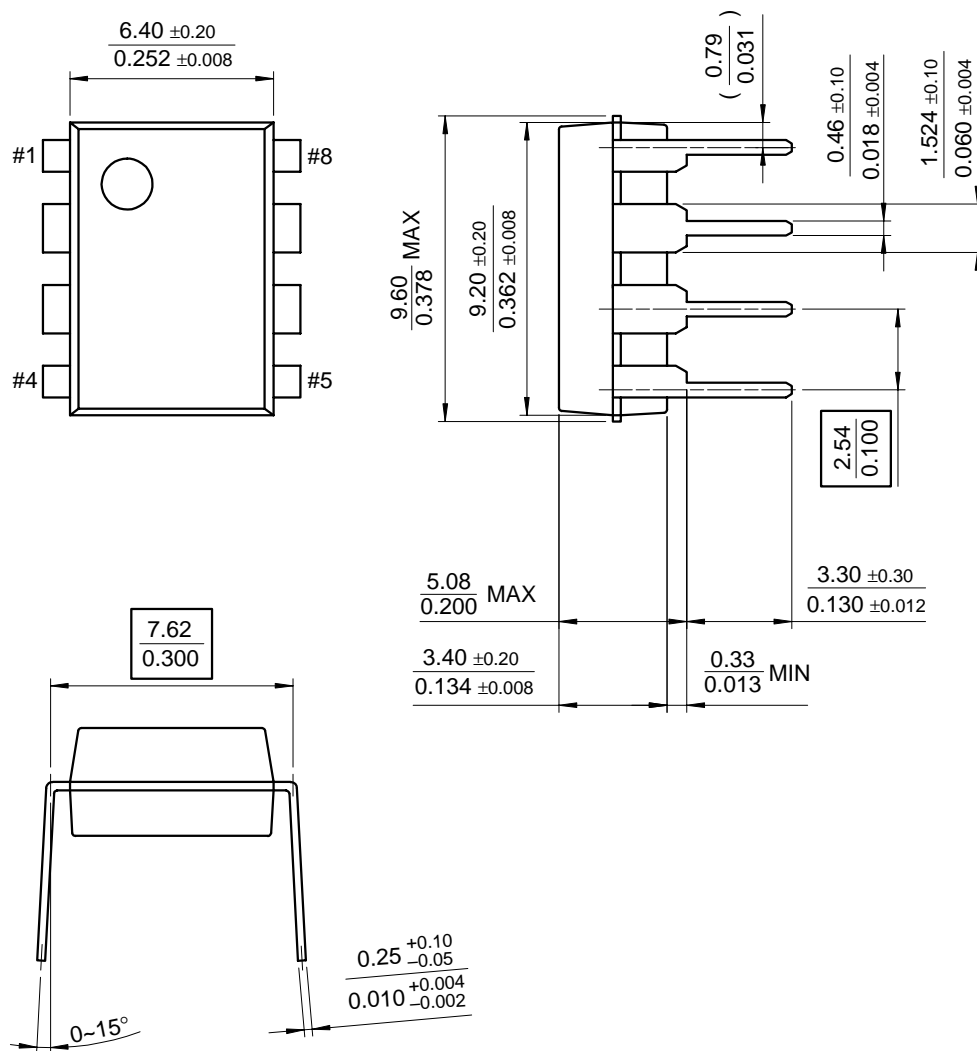
(VCC = +15V, VEE = -15V, TA = 25 °C, unless otherwise specified)

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

Mechanical Dimensions

Package

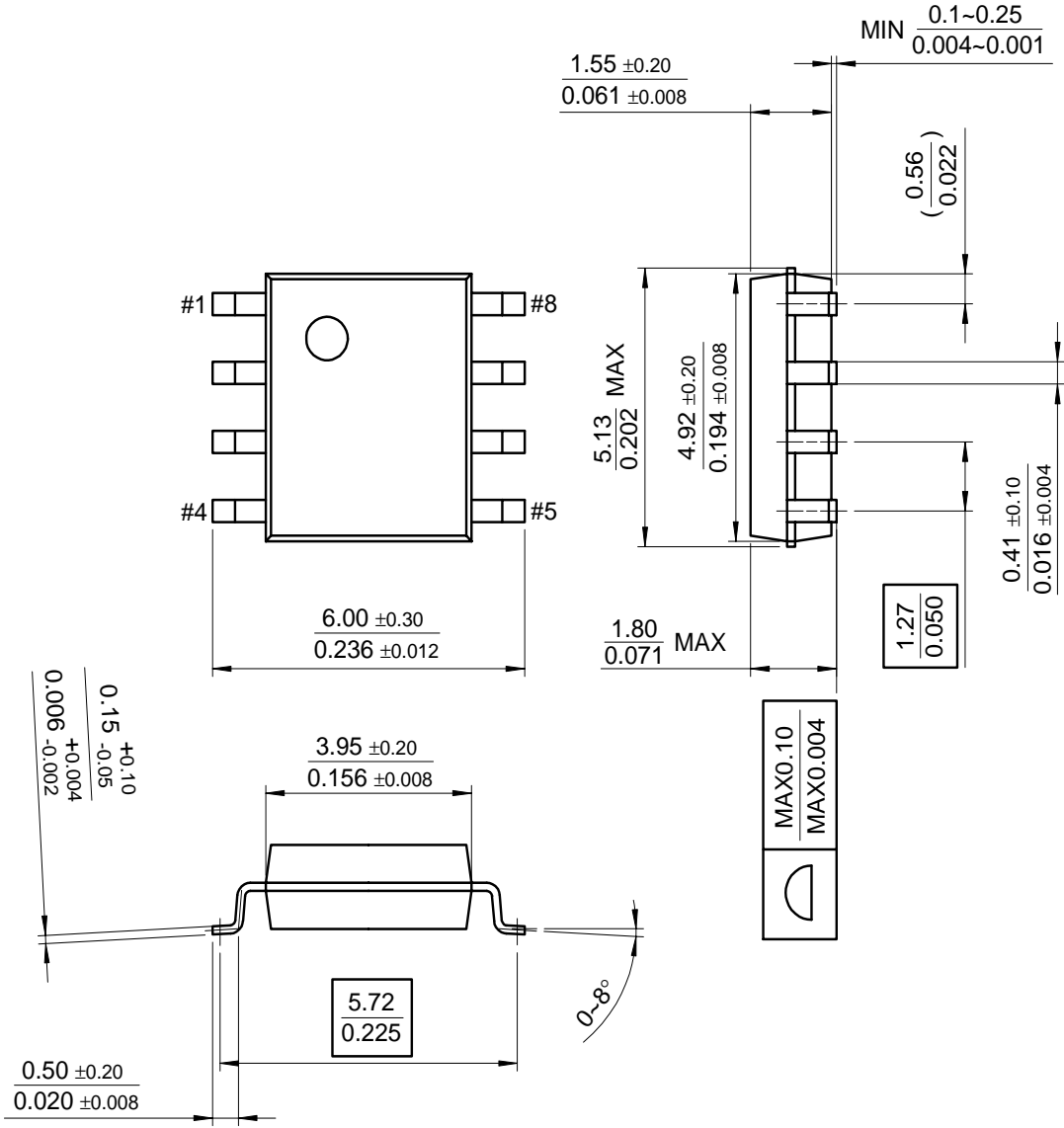
8-DIP



Mechanical Dimensions

Package

8-SOP



Ordering Information

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

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.