



Is Now Part of



ON Semiconductor®

**To learn more about ON Semiconductor, please visit our website at
www.onsemi.com**

ON Semiconductor and the ON Semiconductor logo are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

LF353

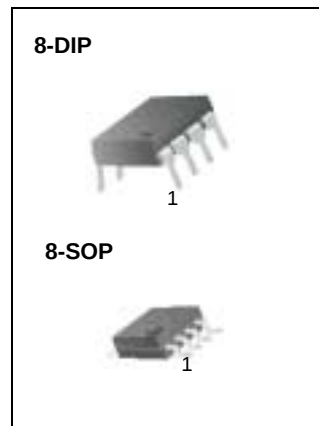
Dual Operational Amplifier (JFET)

Features

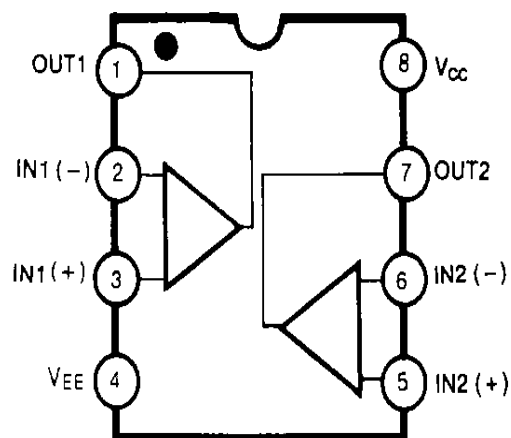
- Internally trimmed offset voltage: 10mV
- Low input bias current: 50pA
- Wide gain bandwidth: 4MHz
- High slew rate: 13V/μs
- High Input impedance: $10^{12}\Omega$

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.

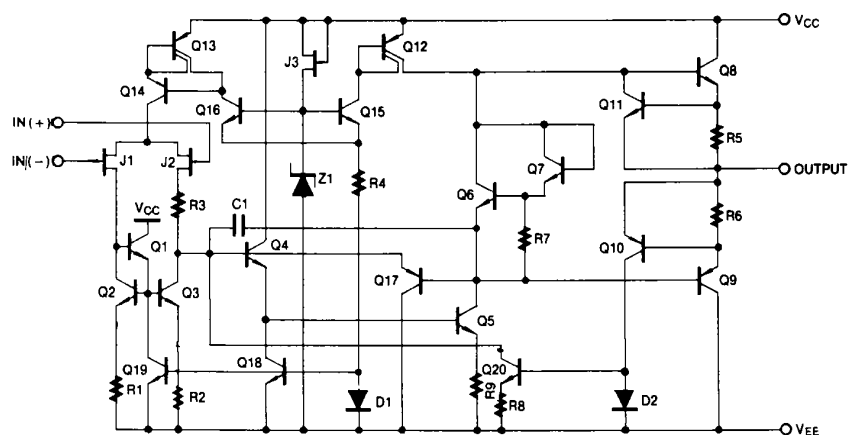


Internal Block Diagram



Schematic Diagram

(One Section Only)



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Power Supply Voltage	V _{CC}	±18	V
Differential Input Voltage	V _{I(DIFF)}	30	V
Input Voltage Range	V _I	±15	V
Output Short Circuit Duration	-	Continuous	-
Power Dissipation	P _D	500	mW
Operating Temperature Range	T _{OPR}	0 ~ +70	°C
Storage Temperature Range	T _{STG}	-65 ~ +150	°C

Electrical Characteristics

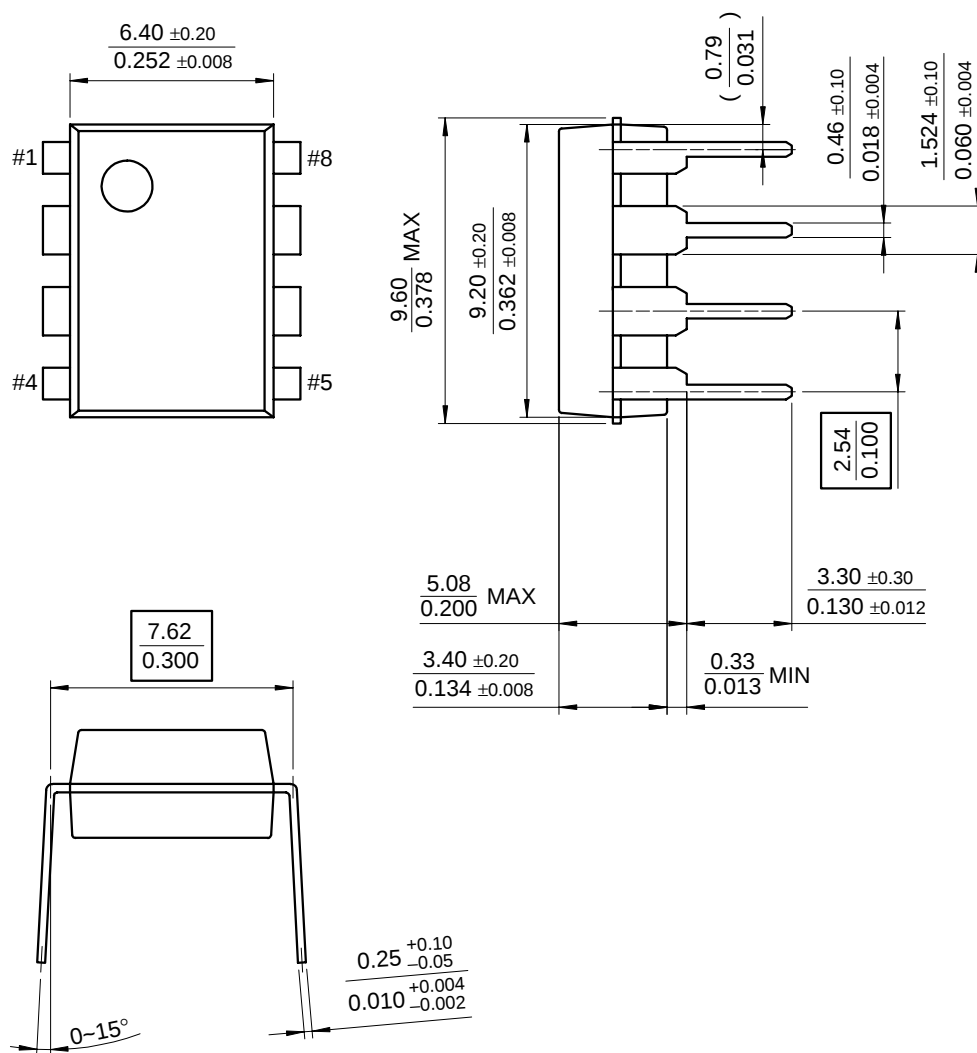
(VCC = +15V, VEE = -15V, TA = 25 °C, unless otherwise specified)

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

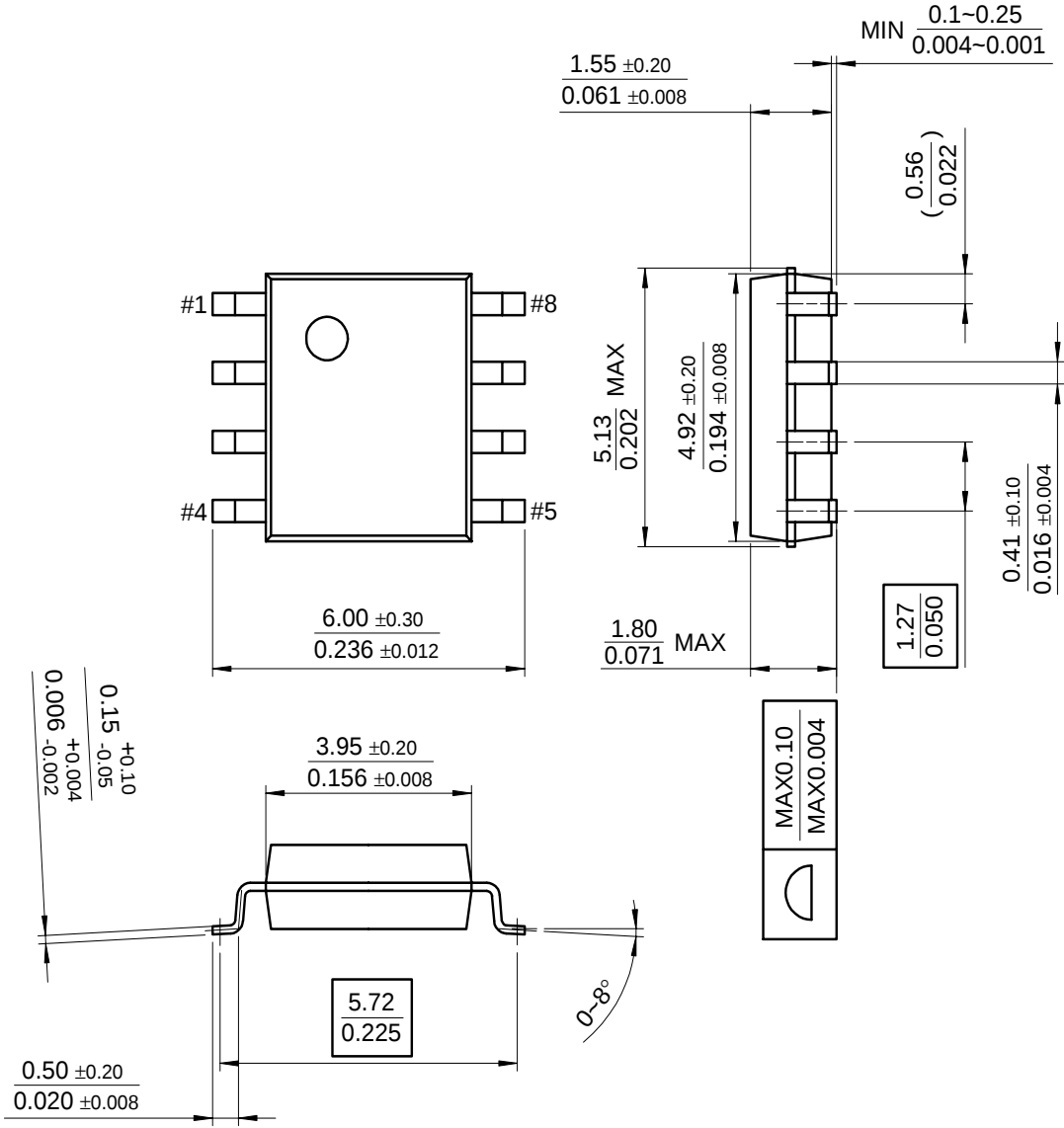
8-DIP



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.