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# LF353 (LM353, KA353)

# DUAL OPERATIONAL AMPLIFIER (JFET)

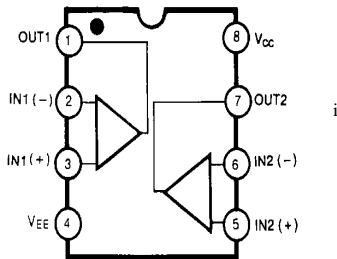
## DUAL OPERATIONAL AMPLIFIER

The LF353 is a JFET input operational amplifier with an internally compensated input offset voltage. The JFET input device provides with bandwidth, low input bias currents and offset currents.

## FEATURES

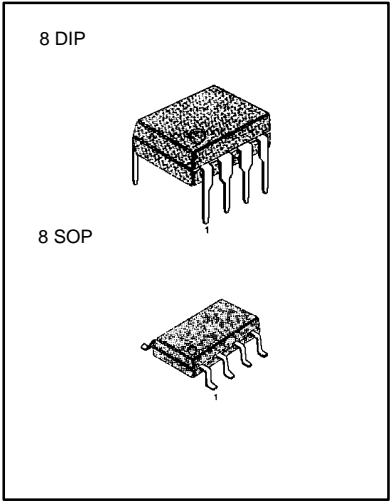
- Internally trimmed offset voltage: 10mV
- Low input bias current: 50pA
- Wide gain bandwidth: 4MHz
- High slew rate: 13V/ $\mu$ s
- High Input impedance:  $10^{12}\Omega$

## BLOCK DIAGRAM

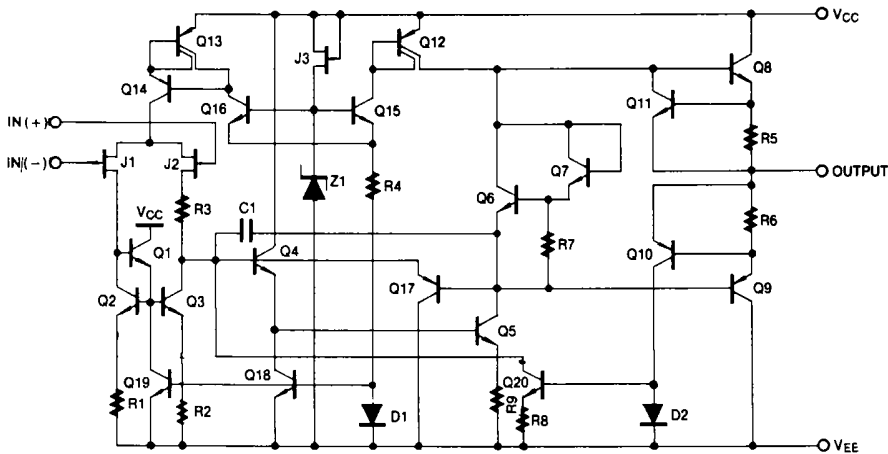


## ORDERING INFORMATION

Device	Package	Operating Temperature
LF353N	8 DIP	0 ~ + 70°C
LF353M	8 SOP	
LF353S	9 SIP	



## SCHEMATIC DIAGRAM (One Section Only)



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Rev. B



## LF353 (LM353, KA353)

## DUAL OPERATIONAL AMPLIFIER (JFET)

### ABSOLUTE MAXIMUM RATINGS

Characteristics	Symbol	Value	Unit
Power Supply Voltage	$V_{CC}$	$\pm 18$	V
Differential Input Voltage	$V_{I(DIFF)}$	30	V
Input Voltage Range	$V_I$	$\pm 15$	V
Output Short Circuit Duration		Continuous	
Power Dissipation	$P_D$	500	mW
Operating Temperature Range	$T_{OPR}$	$0 \sim +70$	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	$-65 \sim +150$	$^{\circ}\text{C}$

### ELECTRICAL CHARACTERISTICS

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

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



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