

# Solid Circuit\* Semiconductor Networks†

## Series 52 and Series 72 Operational/Differential Amplifiers

Very low input and output offset characteristics ■ High common-mode input capability ■ Standard TO-84 and TO-89 flat packages and multilead TO-5

### SN521A

Operational Amplifier  
TYPICAL CHARACTERISTICS

Voltage gain	1200
Input impedance	12 kΩ
Output impedance	10 kΩ
D-c drift referred to input	8 μV/°C
Output signal swing	±4.7 v
Common-mode rejection	60 db
Temperature range	-55° to +125°C

### SN522A

Operational Amplifier  
TYPICAL CHARACTERISTICS

Voltage gain	1200
Input impedance	12 kΩ
Output impedance	160 Ω
D-c drift referred to input	8 μV/°C
Output signal swing	±3.7 v
Common-mode rejection	60 db
Temperature range	-55° to +125°C

### SN523A/SN723

General-purpose Differential Amplifier  
TYPICAL CHARACTERISTICS

Voltage gain (differential)	2500
Input impedance	10 kΩ
Input offset voltage	2 mv
D-c drift referred to input	5 μV/°C
Output signal swing, single-ended	±6.5 v
Common-mode rejection	90 db
Temperature range	-55° to +125°C
SN523L‡, SN1523A	0°C to +70°C
SN723L‡, SN1723	

### SN524A/SN724

General-purpose Operational Amplifier  
TYPICAL CHARACTERISTICS

Voltage gain	1200
Input impedance	1 megohm
Input offset voltage	12 mv
D-c drift referred to input	20 μV/°C
Output signal swing, single ended	±7.5 v
Common-mode rejection	55 db
Temperature range	-55° to +125°C
SN524AL‡, SN524A	0°C to +70°C
SN724L‡, SN724	

### SN525/SN725

High-performance Differential Amplifier  
TYPICAL CHARACTERISTICS

Voltage gain (differential)	50,000
Input impedance	100 kΩ
Input offset voltage	1 mv
D-c drift referred to input	5 μV/°C
Output signal swing, single-ended	±9 v
Common-mode rejection	100 db
Temperature range	-55° to +125°C
SN525	0°C to +70°C
SN725	

### SN526/SN726

High-performance Operational Amplifier  
TYPICAL CHARACTERISTICS

Voltage gain	1200
Input impedance	1 megohm
Input offset voltage	3 mv
D-c drift referred to input	15 μV/°C
Output signal swing, single-ended	±6 v (RL=600Ω)
Common-mode rejection	80 db
Temperature range	-55° to +125°C
SN526	0°C to +70°C
SN726	

## Series 53 and 73 Modified-DTL Digital

Multiple circuit functions per package, lowest cost ■ Full saturated NAND/NOR logic flexibility ■ Standard TO-84 and TO-89 flat package (optional plug-in package for Series 73)

### TYPICAL CHARACTERISTICS

Parameter	Basic AND Gate	Basic NAND Gate	Flip-flop
Propagation delay	5 nsec	25 nsec	45 nsec
Power dissipation	10 mw	10 mw	27 mw
D-c noise margin	400 mv	400 mv	400 mv
Fan-out	4N+ & 4N-	10N+ & 10N-	10N+ & 10N-
Supply voltage	3 to 4 v	3 to 4 v	3 to 4 v
Temperature range			
Series 53	-55° to +125°C	-55° to +125°C	-55° to +125°C
Series 73	—	0° to +70°C	0° to +70°C

\*Trademark

†Patented by Texas Instruments Inc.

‡Multilead TO-5 package

- SN530/SN7300 — Single-phase J-K Flip-flop with Preset
- SN5301/SN7301/SN7301N — J-K Flip-flop with Preset and Clear
- SN5302/SN7302/SN7302N — Dual J-K Flip-flop with Preset
- SN5304/SN7304/SN7304N — Dual J-K Flip-flop with Preset and Clear
- SN531/SN7310 — 5-input Expandable NAND/NOR Gate
- SN5311/SN7311/SN7311N — Dual 5-input NAND/NOR Gate
- SN5315/SN7315/SN7315N — 10-input Expandable NAND/NOR Gate
- SN532/SN7320/SN7320N — 5-input AND/OR Gate or Expander\*\*
- SN533/SN7330 — Dual 3-input NAND/NOR Gate
- SN5331/SN7331/SN7331N — Triple 3-input NAND/NOR Gate
- SN534 — Dual AND/OR Gate (2 and 3 Inputs)
- SN535/SN7350/SN7350N — Quadruple Inverter/Driver
- SN5360/SN7360/SN7360N — Quadruple 2-input NAND/NOR Gate
- SN5370/SN7370/SN7370N — Dual EXCLUSIVE-OR Gate
- SN5380/SN7380/SN7380N — "One Shot" Monostable Multivibrator

\*\*SN7320 is Expander only.

The suffix N denotes plug-in package.