

Hybrid IC Isolation Amplifiers 20 Series

ISOLATION AMPLIFIER

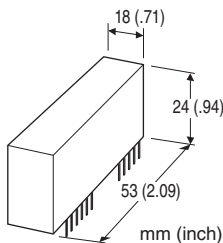
(output isolation)

Functions & Features

- Being used for printed wiring board installation
- Up to 2.3 kV isolation between output to input or power input
- Small stray capacitance between input and output
- Small installation area in printed wiring board
- Power 15V DC

Typical Applications

- Isolating the fields and output circuit of microprocessor to reduce common mode noise
- Available for manufacturers of small-lot products to omit the development of isolation circuit



MODEL: 20VS5-140-U

ORDERING INFORMATION

- Code number: 20VS5-140-U

INPUT RANGE -7 - +7 V DC @ 15 V power

-5 - +5 V DC @ 11.5 V power

OUTPUT RANGE -7 - +7 V DC @ 15 V power

-5 - +5 V DC @ 11.5 V power

POWER INPUT

DC Power

U: 15 V DC

GENERAL SPECIFICATIONS

Construction: Hybrid IC

Housing material: Flame-resistant resin (black)

Isolation: Output to input or power

INPUT SPECIFICATIONS

■ DC Voltage

Input:

-7 - +7 V DC @ 15 V power

-5 - +5 V DC @ 11.5 V power

Input resistance: $\geq 1 \text{ M}\Omega$ (10 k Ω in power failure)

Overload input voltage: 30 V DC continuous

Input offset voltage: $\pm 15 \text{ mV}$

Input bias current: 0.5 nA TYP. (@25°C)

OUTPUT SPECIFICATIONS

■ DC Voltage:

-7 - +7 V DC @ 15 V power

-5 - +5 V DC @ 11.5 V power

Load resistance: $\geq 5 \text{ k}\Omega$

Output impedance: $\leq 5 \Omega$

REFERENCE VOLTAGE SOURCE

Output voltage:

$\pm 15 \text{ V DC TYP.}$ (+15 V power supply)

$\pm 11 \text{ V DC TYP.}$ (+11.5 V power supply)

Load current: $\leq 3 \text{ mA}$

INSTALLATION

Power input

• DC:

Operational voltage range 11.5 - 16 V;

ripple 2 %p-p max.; approx. 7 mA with no load

Operating temperature: -10 to +70°C (14 to 158°F)

Operating humidity: 30 to 90 %RH (non-condensing)

Mounting: Soldering to the printed wiring board

Weight: 50 g (1.76 oz)

PERFORMANCE in percentage of span

Linearity: $\pm 0.05 \%$

Temp. coefficient:

Offset drift 30 ppm/°C

span drift 100 ppm/°C

Frequency characteristics: Approx. 5 kHz, -3 dB

Response time: $\leq 90 \mu\text{sec.}$ (0 - 90 %)

Conversion gain: $\times 0.95 \pm 5 \%$

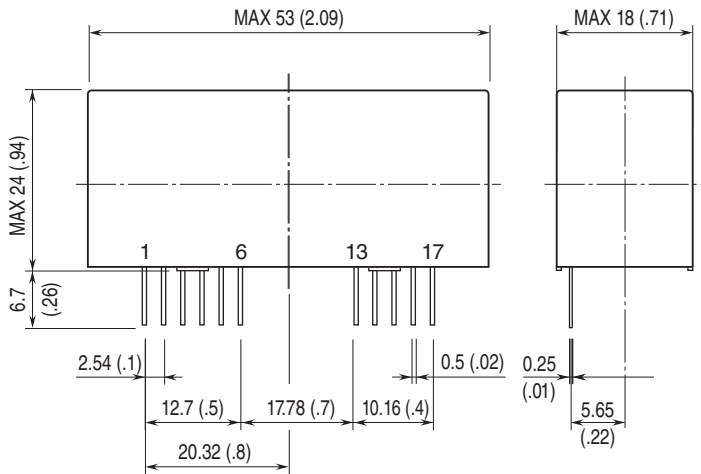
Line voltage effect: $\pm 0.2 \%$ over voltage range

Insulation resistance: $\geq 100 \text{ M}\Omega$ with 500 V DC

Dielectric strength: 2300 V AC @1 minute (output or reference voltage source to input or power)

CMRR: $\geq 100 \text{ dB}$ (500 V AC 50/60 Hz)

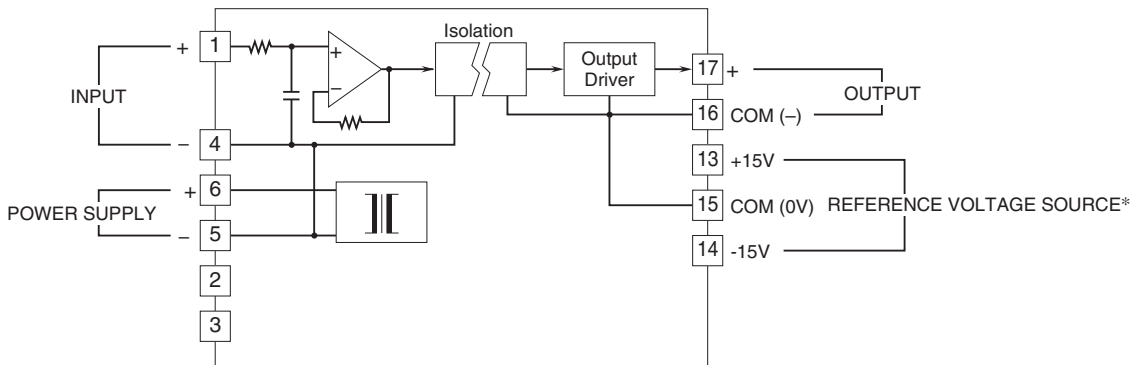
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



PIN ASSIGNMENT

1	INPUT (+)
2	NC
3	NC
4	INPUT (-)
5	POWER SUPPLY (-)
6	POWER SUPPLY (+)
13	REFERENCE VOLTAGE SOURCE (+15V)
14	REFERENCE VOLTAGE SOURCE (-15V)
15	REFERENCE VOLTAGE SOURCE (COM (0V))
16	OUTPUT (COM (-))
17	OUTPUT (COM (+))

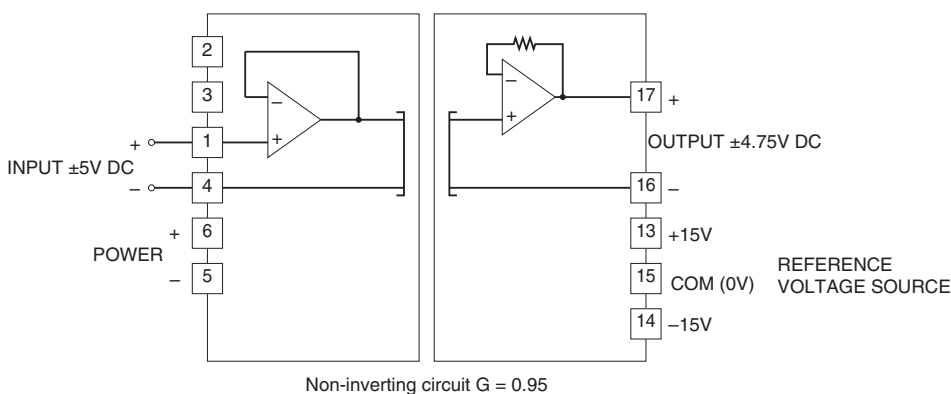
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*To be used in the printed wiring board on which the unit is mounted.
Note. The reference voltage source is common to the COM (-)

APPLICATION EXAMPLE

■ Non-inverting amplifier circuit: Basic example of $G = 0.95$



Specifications are subject to change without notice.