

## Hybrid IC Isolation Amplifiers 20 Series

### ISOLATION AMPLIFIER

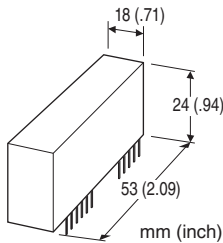
(output isolation)

#### 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 $\Omega$  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:**  $\times 0.95 \pm 5 \%$

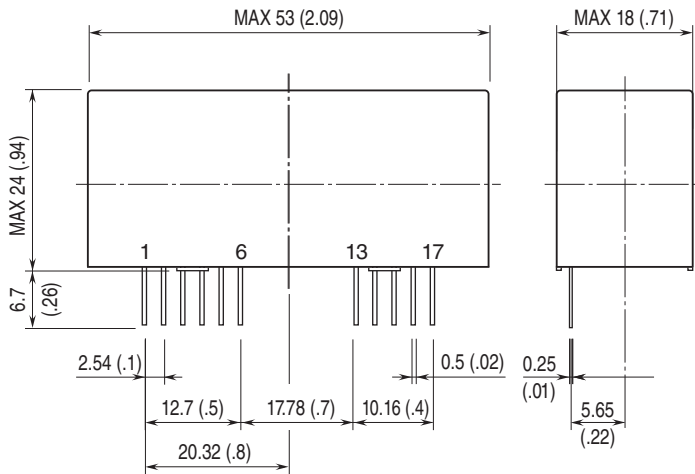
**Line voltage effect:**  $\pm 0.2 \%$  over voltage range

**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)

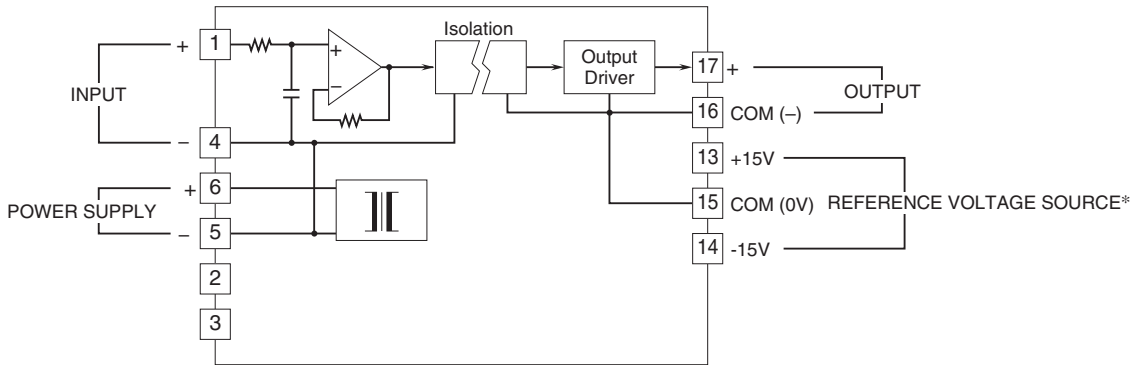
## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



### 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 (+))

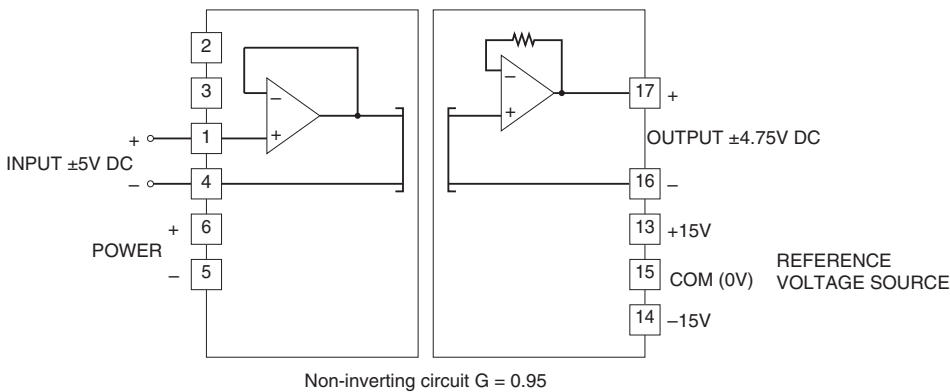
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



\*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.