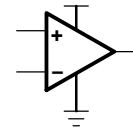


## FAMILY OF LOW-POWER WIDE BANDWIDTH SINGLE SUPPLY OPERATIONAL AMPLIFIERS WITH SHUTDOWN

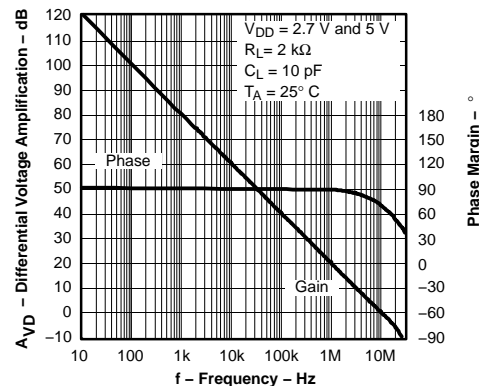
### FEATURES

- CMOS Rail-To-Rail Output
- $V_{ICR}$  Includes Positive Rail
- Wide Bandwidth . . . 11 MHz
- Slew Rate . . . 10 V/ $\mu$ s
- Supply Current . . . 800  $\mu$ A/Channel
- Input Noise Voltage . . . 27 nV/ $\sqrt{\text{Hz}}$
- Ultralow Power-Down Mode:  
 $I_{DD(\text{SHDN})} = 4 \mu\text{A/Channel}$
- Supply Voltage Range . . . 2.7 V to 5.5 V
- Specified Temperature Range:  
 $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$  . . . Industrial Grade
- Ultrasmall Packaging:  
 5 or 6 Pin SOT-23 (TLV2620/1)  
 8 or 10 Pin MSOP (TLV2622/3)
- Universal Opamp EVM (See SLOU060 for More Information)

Operational Amplifier



DIFFERENTIAL VOLTAGE AMPLIFICATION AND PHASE  
 vs  
 FREQUENCY



### DESCRIPTION

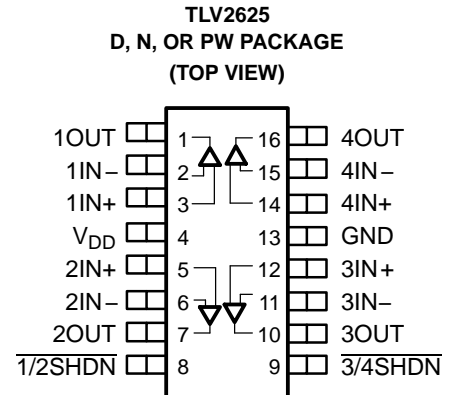
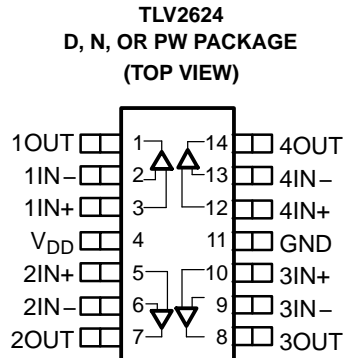
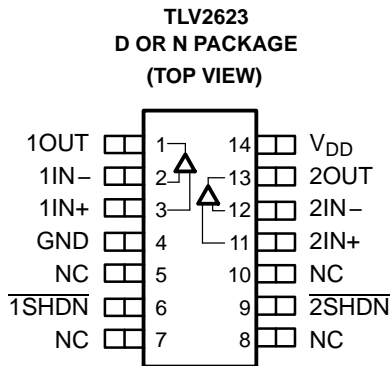
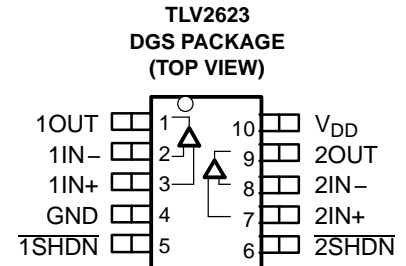
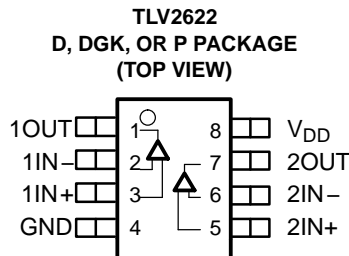
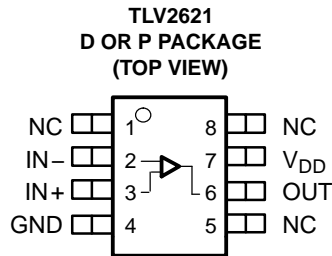
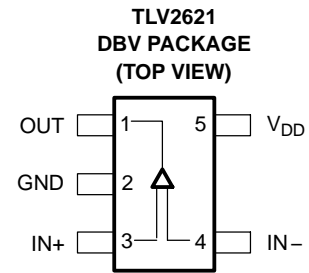
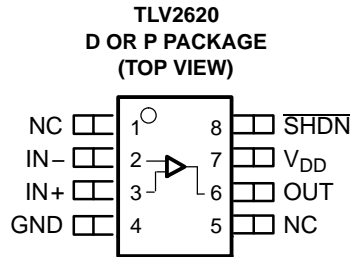
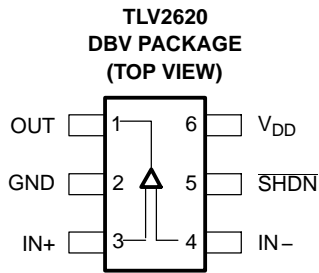
The TLV262x single supply operational amplifiers provide rail-to-rail output with an input range that includes the positive rail. The TLV262x takes the minimum operating supply voltage down to 2.7 V over the extended industrial temperature range ( $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ ) while adding the rail-to-rail output swing feature. The TLV262x also provides 11-MHz bandwidth from only 800  $\mu$ A of supply current. The maximum recommended supply voltage is 5.5 V, which, when coupled with a 2.7-V minimum, allows the devices to be operated from lithium ion cells. The combination of wide bandwidth, low noise, and low distortion makes it ideal for high speed and high resolution data converter applications. The positive input range allows it to directly interface to positive rail referred systems. All members are available in PDIP and SOIC with the singles in the small SOT-23 package, duals in the MSOP, and quads in the TSSOP package.

The 2.7-V operation makes it compatible with Li-Ion powered systems and the operating supply voltage range of many micro-power micro-controllers available today including TI's MSP430.

AMPLIFIER SELECTION TABLE

DEVICE	$V_{DD}$ [V]	$I_{DD/\text{ch}}$ [ $\mu$ A]	$V_{IO}$ [ $\mu$ V]	$I_{IB}$ [ $\mu$ A]	$V_{ICR}$ [V]	GBW [MHz]	SLEW RATE [V/ $\mu$ s]	$V_n$ , 1 kHz [nV/ $\sqrt{\text{Hz}}$ ]	$I_o$ [mA]	SHUT-DOWN
TLV262x	2.7-5.5	750	250	1	1 V to $V_{DD} + 0.2$	11	10	27	28	Y
TLV263x	2.7-5.5	750	250	1	GND to $V_{DD} - 0.8$	10	9	27	28	Y
TLV278x	1.8-3.6	650	250	2.5	$-0.2$ to $V_{DD} + 0.2$	8	5	9	10	Y
TLC07x	4.5 - 16	1900	60	1.5	$0.5$ to $V_{DD} - 0.8$	10	19	7	55	Y
TLC08x	4.5 - 16	1900	60	3	GND to $V_{DD} - 1$	10	19	8.5	55	Y

**TLV262X PACKAGE PINOUTS<sup>(1)</sup>**

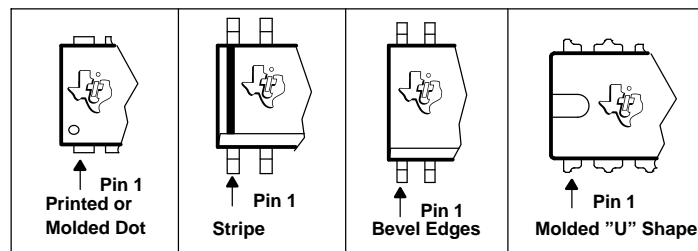


NC – No internal connection

$\overline{1/2SHDN}$  Pin (8) controls amplifiers 1 and 2.  
 $\overline{3/4SHDN}$  Pin (9) controls amplifiers 3 and 4.

(1) SOT-23 may or may not be indicated.

**TYPICAL PIN 1 INDICATORS**



**NOTE:**

If there is not a Pin 1 indicator, turn device to enable reading the symbol from left to right. Pin 1 is at the lower left corner of the device.