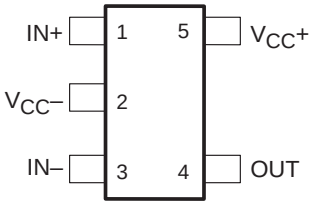
TLV2361, TLV2361Y, TLV2362, TLV2362Y
HIGH-PERFORMANCE LOW-VOLTAGE OPERATIONAL AMPLIFIERS

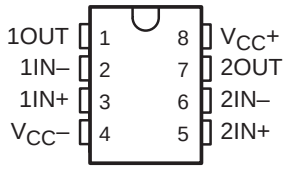
SLOS195B – FEBRUARY 1997 – REVISED OCTOBER 1998

- **Low Supply-Voltage Operation . . . V_{CC} = ±1 V Min**
- **Wide Bandwidth . . . 7 MHz Typ at V_{CC}± = ±2.5 V**
- **High Slew Rate . . . 3 V/μs Typ at V_{CC}± = ±2.5 V**
- **Wide Output Voltage Swing . . . ±2.4 V Typ at V_{CC}± = ±2.5 V, R_L = 10 kΩ**
- **Low Noise . . . 8 nV/√Hz Typ at f = 1 kHz**
- **Package Options Include SOT-23 (DBV) Package for the TLV2361 and Plastic Small-Outline (D), Thin Shrink Small-Outline (PW), and Dual-In-Line (P) Packages for the TLV2362**

TLV2361 . . . DBV PACKAGE
(TOP VIEW)



TLV2362 . . . D, P, OR PW PACKAGE
(TOP VIEW)



description

The TLV236x devices are high-performance dual operational amplifiers built using an original Texas Instruments bipolar process. These devices can be operated at a very low supply voltage (±1 V), while maintaining a wide output swing. The TLV236x devices offer a dramatically improved dynamic range of signal conditioning in low-voltage systems. The TLV236x devices also provide higher performance than other general-purpose operational amplifiers by combining higher unity-gain bandwidth and faster slew rate. With their low distortion and low-noise performance, these devices are well suited for audio applications.

The C-suffix devices are characterized for operation from 0°C to 70°C and the I-suffix devices are characterized for operation from –40°C to 85°C.

TLV2361 AVAILABLE OPTIONS

T_A	PACKAGED DEVICES	SYMBOL	CHIP FORM‡ (Y)
	SOT-23 (DBV)†		
0°C to 70°C	TLV2361CDBV	VAAC	TLV2361Y
–40°C to 85°C	TLV2361IDBV	VAAI	

† The DBV packages are only available taped and reeled.
‡ Chip forms are specified for operation at 25°C only.

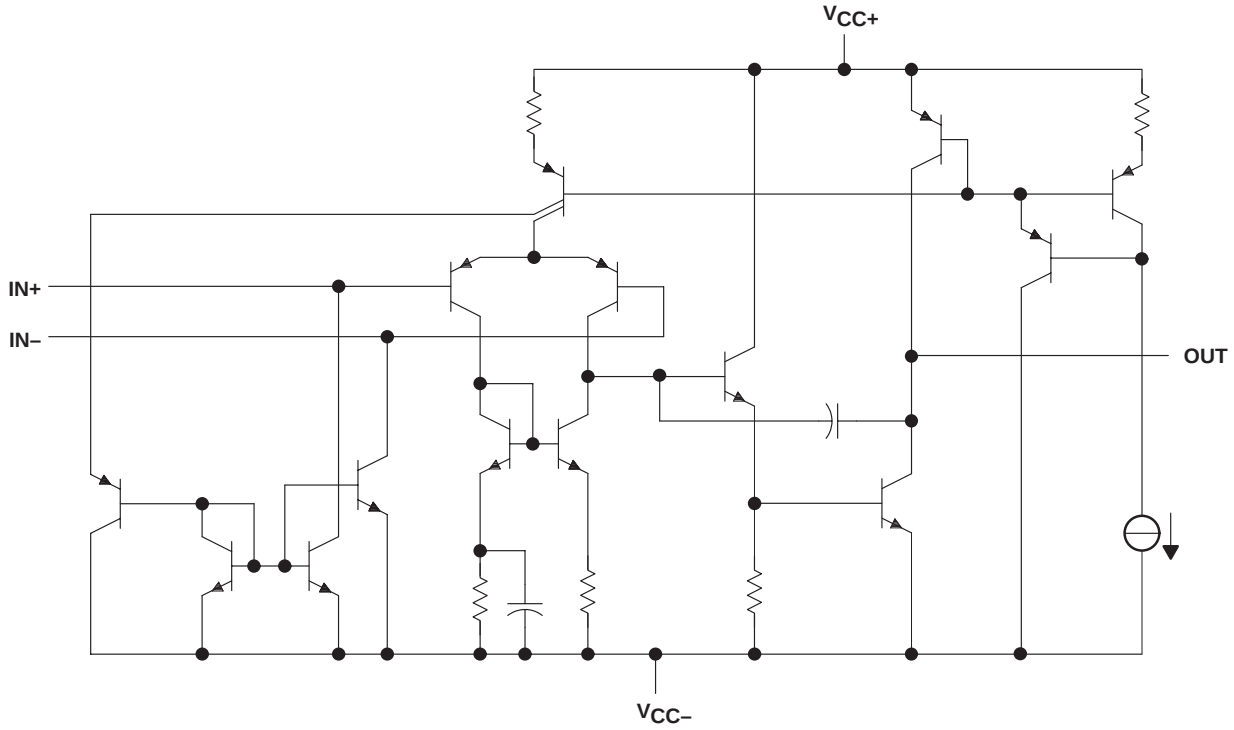
TLV2362 AVAILABLE OPTIONS

T_A	PACKAGED DEVICES			CHIP FORM‡ (Y)
	SMALL OUTLINE§ (D)	PLASTIC DIP (P)	TSSOP¶ (PW)	
–20°C to 85°C	TLV2362ID	TLV2362IP	TLV2362IPWR	TLV2362Y

‡ Chip forms are specified for operation at 25°C only.
§ The D packages are available taped and reeled. Add an R to the package suffix (e.g., TLV2362IDR).
¶ The PW packages are available left-ended taped and reeled only, (e.g., TLV2362IPWR).

Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

equivalent schematic (each amplifier)

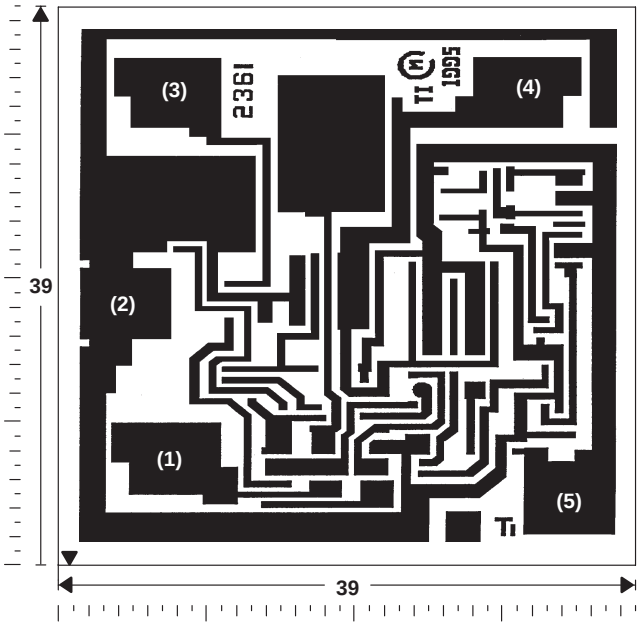


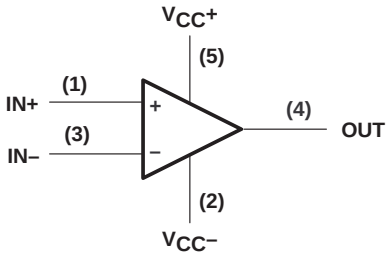
ACTUAL DEVICE COMPONENT COUNT		
COMPONENT	**TLV2361**	**TLV2362**
Transistors	30	46
Resistors	6	11
Diodes	1	1
Capacitors	2	4
JFET	1	1

TLV2361Y chip information

This chip, when properly assembled, has characteristics similar to the TLV2361. Thermal compression or ultrasonic bonding can be used on the doped-aluminum bonding pads. This chip can be mounted with conductive epoxy or a gold-silicon preform.

Bonding-Pad Assignments



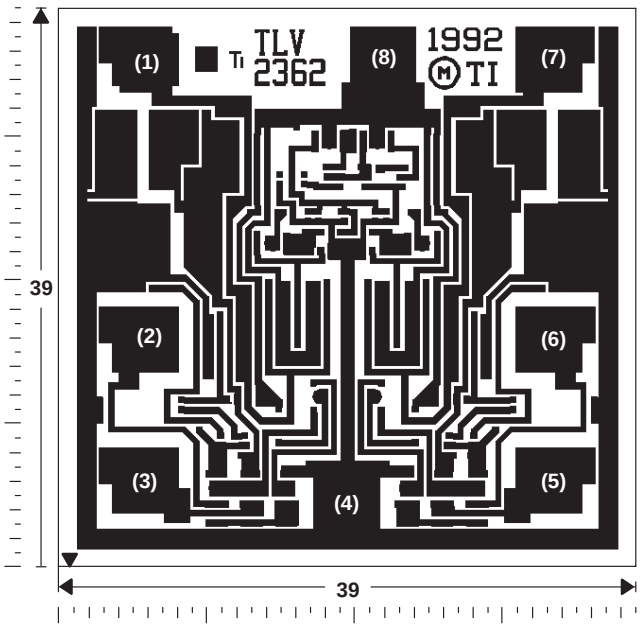


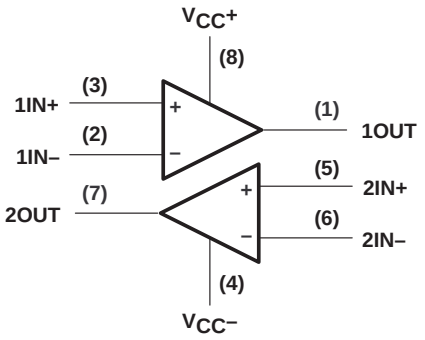
Chip Thickness: 15 Mils Typical
Bonding Pads: 4 × 4 Mils Minimum
T_J(max) = 150°C
Tolerances Are ±10%.
All Dimensions Are in Mils.
Pin (2) is Connected Internally to Backside of Chip.

TLV2362Y chip information

This chip, when properly assembled, has characteristics similar to the TLV2362. Thermal compression or ultrasonic bonding can be used on the doped-aluminum bonding pads. Chips can be mounted with conductive epoxy or a gold-silicon preform.

Bonding-Pad Assignments





Chip Thickness: 15 Mils Typical
Bonding Pads: 4 × 4 Mils Minimum
T_J(max) = 150°C
Tolerances Are ±10%.
All Dimensions Are in Mils.
Pin (4) is Connected Internally to Backside of Chip.

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)†

Supply voltage, V_{CC}+ (see Note 1) . . . . . 3.5 V
Supply voltage, V_{CC}– (see Note 1) . . . . . –3.5 V
Differential input voltage, V_{ID} (see Note 2) . . . . . ±3.5 V
Input voltage, V_I (any input) (see Notes 1 and 3) . . . . . V_{CC}±
Output voltage, V_O . . . . . ±3.5 V
Output current, I_O . . . . . 20 mA
Duration of short-circuit current at (or below) 25°C (output shorted to GND) . . . . . Unlimited
Package thermal impedance, θ_{JA} (see Note 4): D package . . . . . 197°C/W
DBV package . . . . . 347°C/W
P package . . . . . 104°C/W
PW package . . . . . 243°C/W
Storage temperature range, T_{stg} . . . . . –65°C to 150°C
Lead temperature 1,6 mm (1/16 inch) from case for 10 seconds . . . . . 260°C

† Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

NOTES: 1. All voltage values, except differential voltages, are with respect to the midpoint between V_{CC}+ and V_{CC}–.
2. Differential voltages are at IN+ with respect to IN–.
3. All input voltage values must not exceed V_{CC}.
4. The package thermal impedance is calculated in accordance with JESD 51, except for through-hole packages, which use a trace length of zero.

recommended operating conditions

	C SUFFIX		I SUFFIX		UNIT
	MIN	MAX	MIN	MAX	
Supply voltage, V_{CC}	±1	±2.5	±1	±2.5	V
Operating free-air temperature, T_A	0	70	–40	85	°C

TLV2361C electrical characteristics, $V_{CC}\pm$ = ±1.5 V (unless otherwise noted)

PARAMETER		TEST CONDITIONS		T_A	TLV2361C			UNIT
					MIN	TYP	MAX	
V_{IO}	Input offset voltage	V_O = 0,	V_{IC} = 0	25°C		1	6	mV
				0°C to 70°C			7.5	
I_{IO}	Input offset current	V_O = 0,	V_{IC} = 0	25°C		5	100	nA
				0°C to 70°C			150	
I_{IB}	Input bias current	V_O = 0,	V_{IC} = 0	25°C		20	150	nA
				0°C to 70°C			250	
V_{IC}	Common-mode input voltage	$\|V_{IO}\| \le$ 7.5 mV		25°C	±0.5			V
				0°C to 70°C	±0.5			
$V_{OM}+$	Maximum positive-peak output voltage	R_L = 10 kΩ		25°C	1.2	1.4		V
		$R_L \ge$ 10 kΩ		0°C to 70°C	1.2			
$V_{OM}-$	Maximum negative-peak output voltage	R_L = 10 kΩ		25°C	–1.2	–1.4		V
		$R_L \ge$ 10 kΩ		0°C to 70°C	–1.2			
I_{CC}	Supply current (package)	V_O = 0,	No load	25°C		1.4	2.25	mA
				0°C to 70°C			2.75	
A_{VD}	Large-signal differential voltage amplification	V_O = ±1 V,	R_L = 10 kΩ	25°C	60	80		dB
CMRR	Common-mode rejection ratio	V_{IC} = ±0.5 V		25°C		75		dB
k_{SVR}	Supply-voltage rejection ratio	$V_{CC}\pm$ = ±1.5 V to ±2.5 V		25°C		80		dB

TLV2361C operating characteristics, $V_{CC}\pm$ = ±1.5 V, T_A = 25°C

PARAMETER		TEST CONDITIONS			TLV2361C			UNIT
					MIN	TYP	MAX	
SR	Slew rate	A_V = 1,	V_I = ±0.5 V			2.5		V/μs
B_1	Unity-gain bandwidth	A_V = 40,	R_L = 10 kΩ,	C_L = 100 pF		6		MHz
V_n	Equivalent input noise voltage	R_S = 100 Ω,	R_F = 10 kΩ,	f = 1 kHz		9		nV/√Hz

TLV2361C electrical characteristics, $V_{CC}\pm$ = ±2.5 V (unless otherwise noted)

PARAMETER		TEST CONDITIONS		T_A	TLV2361C			UNIT
					MIN	TYP	MAX	
V_{IO}	Input offset voltage	V_O = 0,	V_{IC} = 0	25°C		1	6	mV
				0°C to 70°C			7.5	
I_{IO}	Input offset current	V_O = 0,	V_{IC} = 0	25°C		5	100	nA
				0°C to 70°C			150	
I_{IB}	Input bias current	V_O = 0,	V_{IC} = 0	25°C		20	150	nA
				0°C to 70°C			250	
V_{IC}	Common-mode input voltage	$\|V_{IO}\| \le$ 7.5 mV		25°C	±1.5			V
				0°C to 70°C	±1.4			
$V_{OM}+$	Maximum positive-peak output voltage	R_L = 10 kΩ		25°C	2	2.4		V
		$R_L \ge$ 10 kΩ		0°C to 70°C	2			
$V_{OM}-$	Maximum negative-peak output voltage	R_L = 10 kΩ		25°C	–2	–2.4		V
		$R_L \ge$ 10 kΩ		0°C to 70°C	–2			
I_{CC}	Supply current (package)	V_O = 0,	No load	25°C		1.75	2.5	mA
				0°C to 70°C			3	
A_{VD}	Large-signal differential voltage amplification	V_O = ±1 V,	R_L = 10 kΩ	25°C	60	80		dB
CMRR	Common-mode rejection ratio	V_{IC} = ±0.5 V		25°C		85		dB
k_{SVR}	Supply-voltage rejection ratio	$V_{CC}\pm$ = ±1.5 V to ±2.5 V		25°C		80		dB

TLV2361C operating characteristics, $V_{CC}\pm$ = ±2.5 V, T_A = 25°C

PARAMETER		TEST CONDITIONS			TLV2361C			UNIT
					MIN	TYP	MAX	
SR	Slew rate	A_V = 1,	V_I = ±0.5 V			3		V/μs
B_1	Unity-gain bandwidth	A_V = 40,	R_L = 10 kΩ,	C_L = 100 pF		7		MHz
V_n	Equivalent input noise voltage	R_S = 100 Ω,	R_F = 10 kΩ,	f = 1 kHz		8		nV/√Hz
THD + N	Total harmonic distortion plus noise	A_V = 1, f = 3 kHz	V_O = ±1.2 V,	R_L = 10 kΩ,		0.004%		

TLV2361I electrical characteristics, $V_{CC}\pm$ = ±1.5 V (unless otherwise noted)

PARAMETER		TEST CONDITIONS	T_A	TLV2361I			UNIT
				MIN	TYP	MAX	
V_{IO}	Input offset voltage	V_O = 0, V_{IC} = 0	25°C		1	6	mV
			–40°C to 85°C			7.5	
I_{IO}	Input offset current	V_O = 0, V_{IC} = 0	25°C		5	100	nA
			–40°C to 85°C			150	
I_{IB}	Input bias current	V_O = 0, V_{IC} = 0	25°C		20	150	nA
			–40°C to 85°C			250	
V_{IC}	Common-mode input voltage	$\|V_{IO}\| \le$ 7.5 mV	25°C	±0.5			V
			–40°C to 85°C	±0.5			
V_{OM+}	Maximum positive-peak output voltage	R_L = 10 kΩ	25°C	1.2	1.4		V
		$R_L \ge$ 10 kΩ	–40°C to 85°C	1.2			
$V_{OM–}$	Maximum negative-peak output voltage	R_L = 10 kΩ	25°C	–1.2	–1.4		V
		$R_L \ge$ 10 kΩ	–40°C to 85°C	–1.2			
I_{CC}	Supply current (package)	V_O = 0, No load	25°C		1.4	2.25	mA
			–40°C to 85°C			2.75	
A_{VD}	Large-signal differential voltage amplification	V_O = ±1 V, R_L = 10 kΩ	25°C	60	80		dB
CMRR	Common-mode rejection ratio	V_{IC} = ±0.5 V	25°C		75		dB
k_{SVR}	Supply-voltage rejection ratio	$V_{CC}\pm$ = ±1.5 V to ±2.5 V	25°C		80		dB

TLV2361I operating characteristics, $V_{CC}\pm$ = ±1.5 V, T_A = 25°C

PARAMETER		TEST CONDITIONS			TLV2361I			UNIT
					MIN	TYP	MAX	
SR	Slew rate	A_V = 1,	V_I = ±0.5 V			2.5		V/μs
B_1	Unity-gain bandwidth	A_V = 40,	R_L = 10 kΩ,	C_L = 100 pF		6		MHz
V_n	Equivalent input noise voltage	R_S = 100 Ω,	R_F = 10 kΩ,	f = 1 kHz		9		nV/√Hz

TLV2361I electrical characteristics, $V_{CC}\pm$ = ±2.5 V (unless otherwise noted)

PARAMETER		TEST CONDITIONS	T_A	TLV2361I			UNIT
				MIN	TYP	MAX	
V_{IO}	Input offset voltage	V_O = 0, V_{IC} = 0	25°C		1	6	mV
			–40°C to 85°C			7.5	
I_{IO}	Input offset current	V_O = 0, V_{IC} = 0	25°C		5	100	nA
			–40°C to 85°C			150	
I_{IB}	Input bias current	V_O = 0, V_{IC} = 0	25°C		20	150	nA
			–40°C to 85°C			250	
V_{IC}	Common-mode input voltage	$\|V_{IO}\| \le$ 7.5 mV	25°C	±1.5			V
			–40°C to 85°C	±1.4			
V_{OM+}	Maximum positive-peak output voltage	R_L = 10 kΩ	25°C	2	2.4		V
		$R_L \ge$ 10 kΩ	–40°C to 85°C	2			
$V_{OM–}$	Maximum negative-peak output voltage	R_L = 10 kΩ	25°C	–2	–2.4		V
		$R_L \ge$ 10 kΩ	–40°C to 85°C	–2			
I_{CC}	Supply current (package)	V_O = 0, No load	25°C		1.75	2.5	mA
			–40°C to 85°C			3	
A_{VD}	Large-signal differential voltage amplification	V_O = ±1 V, R_L = 10 kΩ	25°C	60	80		dB
CMRR	Common-mode rejection ratio	V_{IC} = ±0.5 V	25°C		85		dB
k_{SVR}	Supply-voltage rejection ratio	$V_{CC}\pm$ = ±1.5 V to ±2.5 V	25°C		80		dB

TLV2361I operating characteristics, $V_{CC}\pm$ = ±2.5 V, T_A = 25°C

PARAMETER		TEST CONDITIONS			TLV2361I			UNIT
					MIN	TYP	MAX	
SR	Slew rate	A_V = 1,	V_I = ±0.5 V			3		V/µs
B_1	Unity-gain bandwidth	A_V = 40,	R_L = 10 kΩ,	C_L = 100 pF		7		MHz
V_n	Equivalent input noise voltage	R_S = 100 Ω,	R_F = 10 kΩ,	f = 1 kHz		8		nV/√Hz

TLV2361Y electrical characteristics, $V_{CC}\pm$ = ±1.5 V, T_A = 25°C (unless otherwise noted)

PARAMETER		TEST CONDITIONS		TLV2361Y			UNIT
				MIN	TYP	MAX	
V_{IO}	Input offset voltage	V_O = 0,	V_{IC} = 0		1		mV
I_{IO}	Input offset current	V_O = 0,	V_{IC} = 0		5		nA
I_{IB}	Input bias current	V_O = 0,	V_{IC} = 0		20		nA
V_{OM+}	Maximum positive-peak output voltage	R_L = 10 kΩ			1.4		V
$V_{OM–}$	Maximum negative-peak output voltage	R_L = 10 kΩ			–1.4		V
I_{CC}	Supply current	V_O = 0,	No load		1.4		mA
A_{VD}	Large-signal differential voltage amplification	V_O = ±1 V,	R_L = 10 kΩ		80		dB
CMRR	Common-mode rejection ratio	V_{IC} = ±0.5 V			75		dB
k_{SVR}	Supply-voltage rejection ratio	$V_{CC}\pm$ = ±1.5 V to ±2.5 V			80		dB

TLV2361Y operating characteristics, $V_{CC}\pm$ = ±1.5 V, T_A = 25°C

PARAMETER		TEST CONDITIONS			TLV2361Y			UNIT
					MIN	TYP	MAX	
SR	Slew rate	A_V = 1,	V_I = ±0.5 V			2.5		V/μs
B_1	Unity-gain bandwidth	A_V = 40,	R_L = 10 kΩ,	C_L = 100 pF		6		MHz
V_n	Equivalent input noise voltage	R_S = 100 Ω,	R_F = 10 kΩ,	f = 1 kHz		9		nV/√Hz

TLV2361Y electrical characteristics, $V_{CC}\pm$ = ±2.5 V, T_A = 25°C (unless otherwise noted)

PARAMETER		TEST CONDITIONS		TLV2361Y			UNIT
				MIN	TYP	MAX	
V_{IO}	Input offset voltage	V_O = 0,	V_{IC} = 0		1		mV
I_{IO}	Input offset current	V_O = 0,	V_{IC} = 0		5		nA
I_{IB}	Input bias current	V_O = 0,	V_{IC} = 0		20		nA
V_{OM+}	Maximum positive-peak output voltage	R_L = 10 kΩ			2.4		V
$V_{OM–}$	Maximum negative-peak output voltage	R_L = 10 kΩ			–2.4		V
I_{CC}	Supply current	V_O = 0,	No load		1.75		mA
A_{VD}	Large-signal differential voltage amplification	V_O = ±1 V,	R_L = 10 kΩ		80		dB
CMRR	Common-mode rejection ratio	V_{IC} = ±0.5 V			85		dB
k_{SVR}	Supply-voltage rejection ratio	$V_{CC}\pm$ = ±1.5 V to ±2.5 V			80		dB

TLV2361Y operating characteristics, $V_{CC}\pm$ = ±2.5 V, T_A = 25°C

PARAMETER		TEST CONDITIONS			TLV2361Y			UNIT
					MIN	TYP	MAX	
SR	Slew rate	A_V = 1,	V_I = ±0.5 V			3		V/μs
B_1	Unity-gain bandwidth	A_V = 40,	R_L = 10 kΩ,	C_L = 100 pF		7		MHz
V_n	Equivalent input noise voltage	R_S = 100 Ω,	R_F = 10 kΩ,	f = 1 kHz		8		nV/√Hz

TLV2362I electrical characteristics, $V_{CC}\pm$ = ±1.5 V (unless otherwise noted)

PARAMETER		TEST CONDITIONS	T_A	TLV2362I			UNIT
				MIN	TYP	MAX	
V_{IO}	Input offset voltage	V_O = 0, V_{IC} = 0	25°C		1	6	mV
			–20°C to 85°C			7.5	
I_{IO}	Input offset current	V_O = 0, V_{IC} = 0	25°C		5	100	nA
			–20°C to 85°C			150	
I_{IB}	Input bias current	V_O = 0, V_{IC} = 0	25°C		20	150	nA
			–20°C to 85°C			250	
V_{ICR}	Common-mode input voltage	$\|V_{IO}\|$ 3 7.5 mV	25°C	±0.5			V
			–20°C to 85°C	±0.5			
$V_{OM}+$	Maximum positive-peak output voltage	R_L = 10 kΩ	25°C	1.2	1.4		V
		R_L ≥ 10 kΩ	–20°C to 85°C	1.2			
$V_{OM}–$	Maximum negative-peak output voltage	R_L = 10 kΩ	25°C	–1.2	–1.4		V
		R_L ≥ 10 kΩ	–20°C to 85°C	–1.2			
I_{CC}	Supply current (both amplifiers)	V_O = 0, No load	25°C		2.8	4.5	mA
			–20°C to 85°C			5.5	
A_{VD}	Large-signal differential voltage amplification	V_O = ±1 V, R_L = 10 kΩ	25°C		55		dB
CMRR	Common-mode rejection ratio	V_{IC} = ±0.5 V	25°C		75		dB
k_{SVR}	Supply-voltage rejection ratio	$V_{CC}\pm$ = ±1.5 V to ±2.5 V	25°C		80		dB

TLV2362I operating characteristics, $V_{CC}\pm$ = ±1.5 V, T_A = 25°C

PARAMETER		TEST CONDITIONS			TLV2362I			UNIT
					MIN	TYP	MAX	
SR	Slew rate	A_V = 1,	V_I = ±0.5 V			2.5		V/µs
B_1	Unity-gain bandwidth	A_V = 40,	R_L = 10 kΩ,	C_L = 100 pF		6		MHz
V_n	Equivalent input noise voltage	R_S = 100 Ω,	R_F = 10 kΩ,	f = 1 kHz		9		nV/√Hz

TLV2362I electrical characteristics, $V_{CC}\pm$ = ±2.5 V (unless otherwise noted)

PARAMETER		TEST CONDITIONS	T_A	TLV2362I			UNIT
				MIN	TYP	MAX	
V_{IO}	Input offset voltage	V_O = 0, V_{IC} = 0	25°C		1	6	mV
			–20°C to 85°C			7.5	
I_{IO}	Input offset current	V_O = 0, V_{IC} = 0	25°C		5	100	nA
			–20°C to 85°C			150	
I_{IB}	Input bias current	V_O = 0, V_{IC} = 0	25°C		20	150	nA
			–20°C to 85°C			250	
V_{ICR}	Common-mode input voltage	$\|V_{IO}\|$ 3 7.5 mV	25°C	±1.5			V
			–20°C to 85°C	±1.4			
$V_{OM}+$	Maximum positive-peak output voltage	R_L = 10 kΩ	25°C	2	2.4		V
		R_L ≥ 10 kΩ	–20°C to 85°C	2			
$V_{OM}–$	Maximum negative-peak output voltage	R_L = 10 kΩ	25°C	–2	–2.4		V
		R_L ≥ 10 kΩ	–20°C to 85°C	–2			
I_{CC}	Supply current (both amplifiers)	V_O = 0, No load	25°C		3.5	5	mA
			–20°C to 85°C			6	
A_{VD}	Large-signal differential voltage amplification	V_O = ±1 V, R_L = 10 kΩ	25°C		60		dB
CMRR	Common-mode rejection ratio	V_{IC} = ±0.5 V	25°C		85		dB
k_{SVR}	Supply-voltage rejection ratio	$V_{CC}\pm$ = ±1.5 V to ±2.5 V	25°C		80		dB

TLV2362I operating characteristics, $V_{CC}\pm$ = ±2.5 V, T_A = 25°C

PARAMETER		TEST CONDITIONS			TLV2362I			UNIT
					MIN	TYP	MAX	
SR	Slew rate	A_V = 1,	V_I = ±0.5 V			3		V/μs
B_1	Unity-gain bandwidth	A_V = 40,	R_L = 10 kΩ,	C_L = 100 pF		7		MHz
V_n	Equivalent input noise voltage	R_S = 100 Ω,	R_F = 10 kΩ,	f = 1 kHz		8		nV/√Hz

TLV2362Y electrical characteristics, $V_{CC}\pm$ = ±1.5 V, T_A = 25°C (unless otherwise noted)

PARAMETER		TEST CONDITIONS		TLV2362Y			UNIT
				MIN	TYP	MAX	
V_{IO}	Input offset voltage	V_O = 0,	V_{IC} = 0		1		mV
I_{IO}	Input offset current	V_O = 0,	V_{IC} = 0		5		nA
I_{IB}	Input bias current	V_O = 0,	V_{IC} = 0		20		nA
V_{OM+}	Maximum positive-peak output voltage	R_L = 10 kΩ			1.4		V
V_{OM-}	Maximum negative-peak output voltage	R_L = 10 kΩ			–1.4		V
I_{CC}	Supply current (both amplifiers)	V_O = 0,	No load		2.8		mA
A_{VD}	Large-signal differential voltage amplification	V_O = ±1 V,	R_L = 10 kΩ		55		dB
CMRR	Common-mode rejection ratio	V_{IC} = ±0.5 V			75		dB
k_{SVR}	Supply-voltage rejection ratio	$V_{CC}\pm$ = ±1.5 V to ±2.5 V			80		dB

TLV2362Y operating characteristics, $V_{CC}\pm$ = ±1.5 V, T_A = 25°C

PARAMETER		TEST CONDITIONS			TLV2362Y			UNIT
					MIN	TYP	MAX	
SR	Slew rate	A_V = 1,	V_I = ±0.5 V			2.5		V/µs
B_1	Unity-gain bandwidth	A_V = 40,	R_L = 10 kΩ,	C_L = 100 pF		6		MHz
V_n	Equivalent input noise voltage	R_S = 100 Ω,	R_F = 10 kΩ,	f = 1 kHz		9		nV/√Hz

TLV2362Y electrical characteristics, $V_{CC}\pm$ = ±2.5 V, T_A = 25°C (unless otherwise noted)

PARAMETER		TEST CONDITIONS		TLV2362Y			UNIT
				MIN	TYP	MAX	
V_{IO}	Input offset voltage	V_O = 0,	V_{IC} = 0		1		mV
I_{IO}	Input offset current	V_O = 0,	V_{IC} = 0		5		nA
I_{IB}	Input bias current	V_O = 0,	V_{IC} = 0		20		nA
V_{OM+}	Maximum positive-peak output voltage	R_L = 10 kΩ			2.4		V
V_{OM-}	Maximum negative-peak output voltage	R_L = 10 kΩ			–2.4		V
I_{CC}	Supply current (both amplifiers)	V_O = 0,	No load		3.5		mA
A_{VD}	Large-signal differential voltage amplification	V_O = ±1 V,	R_L = 10 kΩ		60		dB
CMRR	Common-mode rejection ratio	V_{IC} = ±0.5 V			85		dB
k_{SVR}	Supply-voltage rejection ratio	$V_{CC}\pm$ = ±1.5 V to ±2.5 V			80		dB

TLV2362Y operating characteristics, $V_{CC}\pm$ = ±2.5 V, T_A = 25°C

PARAMETER		TEST CONDITIONS			TLV2362Y			UNIT
					MIN	TYP	MAX	
SR	Slew rate	A_V = 1,	V_I = ±0.5 V			3		V/µs
B_1	Unity-gain bandwidth	A_V = 40,	R_L = 10 kΩ,	C_L = 100 pF		7		MHz
V_n	Equivalent input noise voltage	R_S = 100 Ω,	R_F = 10 kΩ,	f = 1 kHz		8		nV/√Hz

TYPICAL CHARACTERISTICS

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Total harmonic distortion vs Output voltage	8

TYPICAL CHARACTERISTICS

SUPPLY CURRENT vs FREE-AIR TEMPERATURE

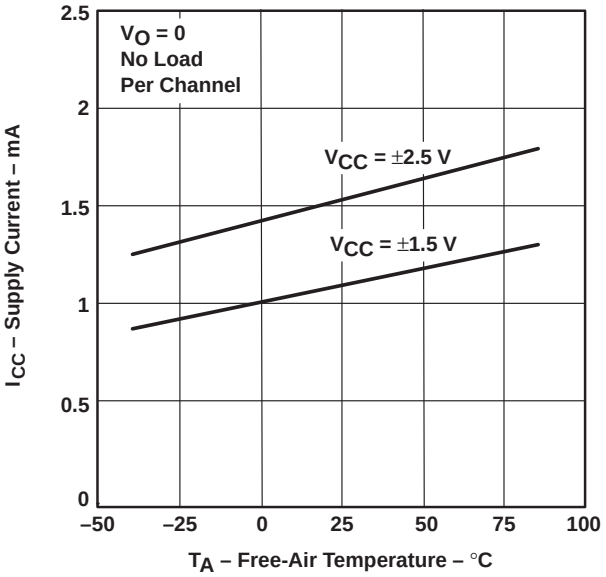

Figure 1

SUPPLY CURRENT vs SUPPLY VOLTAGE

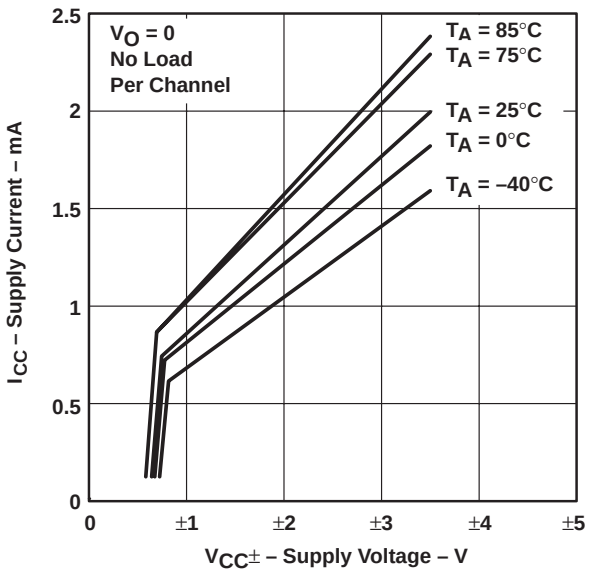

Figure 2

MAXIMUM POSITIVE OUTPUT VOLTAGE vs OUTPUT CURRENT

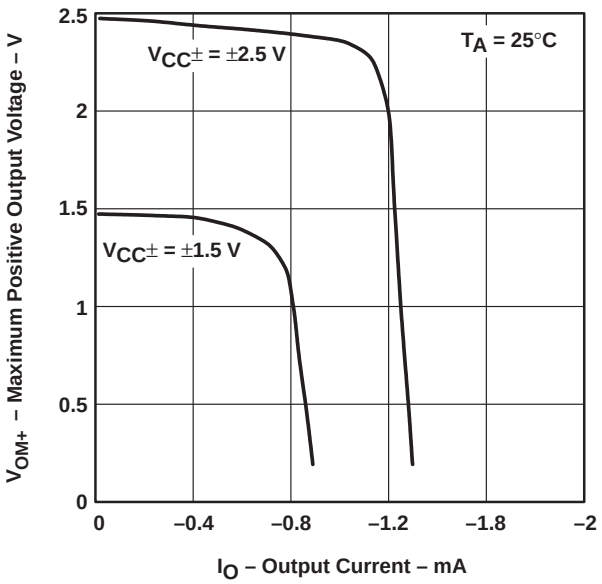

Figure 3

MAXIMUM NEGATIVE OUTPUT VOLTAGE vs OUTPUT CURRENT

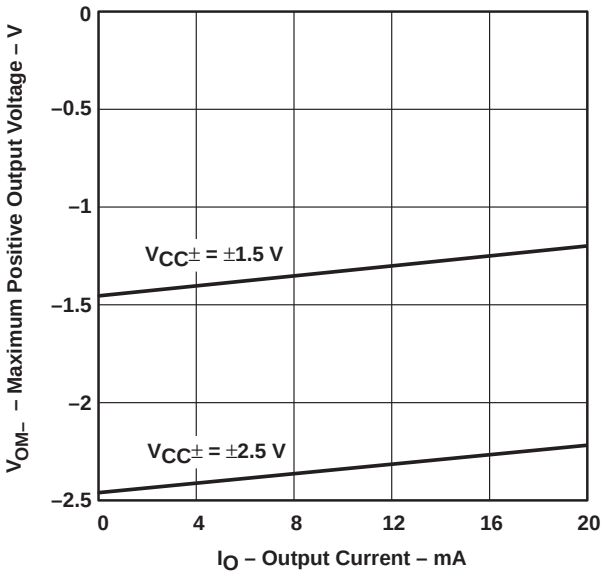

Figure 4

TYPICAL CHARACTERISTICS

MAXIMUM PEAK-TO-PEAK OUTPUT VOLTAGE
vs
FREQUENCY

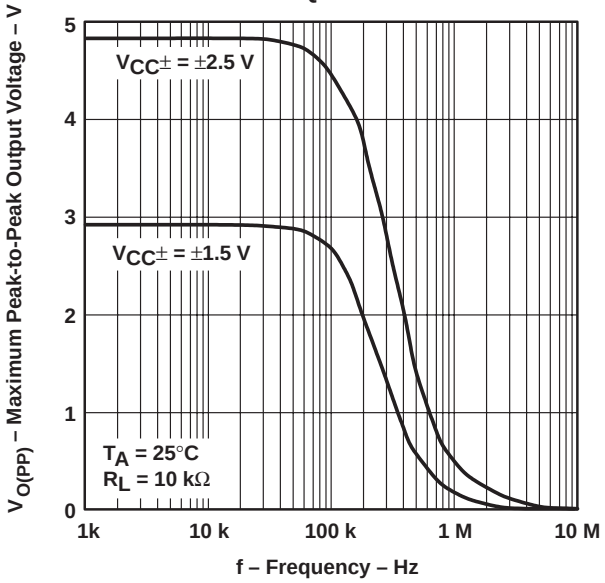

Figure 5

EQUIVALENT INPUT NOISE VOLTAGE
vs
FREQUENCY

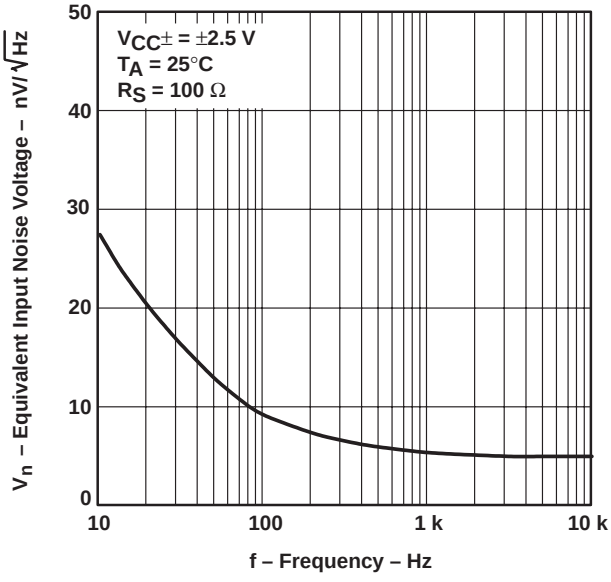

Figure 6

TOTAL HARMONIC DISTORTION
vs
FREQUENCY

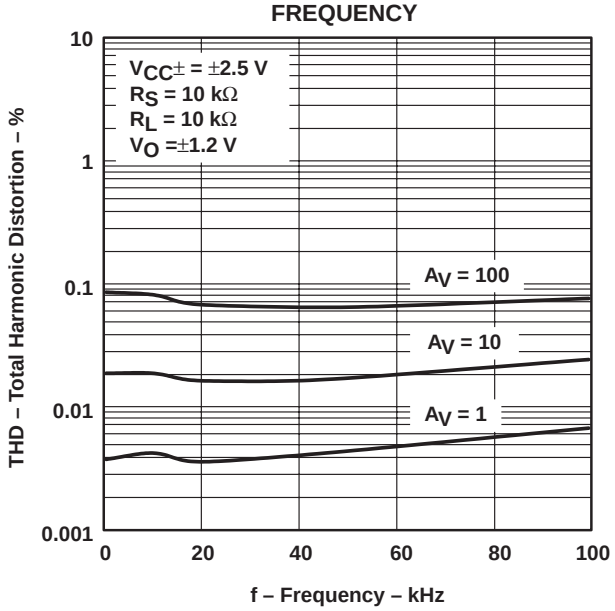

Figure 7

TOTAL HARMONIC DISTORTION
vs
OUTPUT VOLTAGE

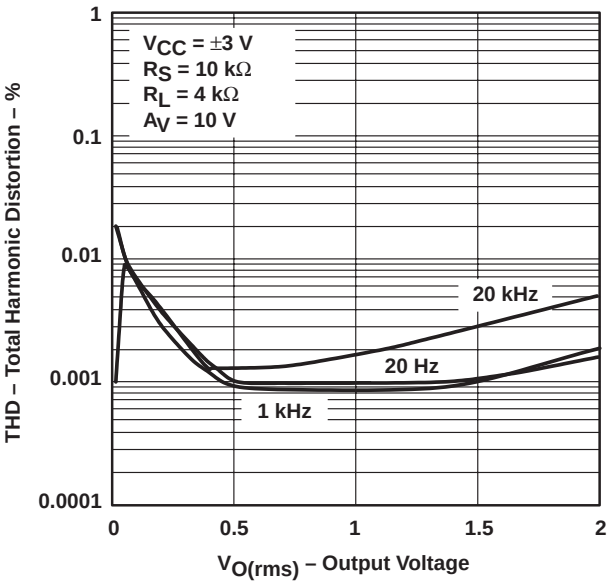

Figure 8

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