Texas Instruments

REAL WORLD SIGNAL PROCESSING®

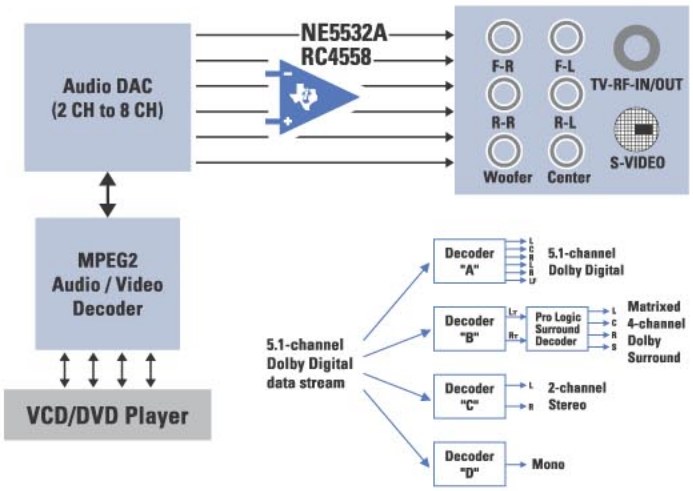
STANDARD LINEAR AND LOGIC FOR DVD/VCD PLAYERS

2Q 2002

Audio Pre-Amps
Linear Regulators
Level Shifters

Audio Pre-Amp/Audio Switch

Dual Low-Noise Operational Amplifier



Features ▸

NE5532A

- Bandwidth: 10MHz
- Slew Rate: 9V/μs
- CMRR: 100 dB
- Excellent Dynamic Range
- Low Noise: 5nV/√Hz @1KHz
- Package: P, PS

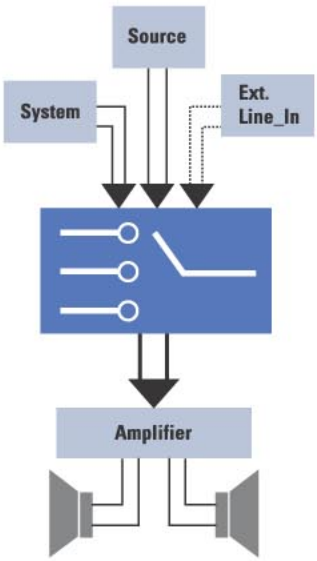
RC4558

- Bandwidth: 3MHz
- Slew Rate: 1.7V/μs
- CMRR: 90 dB
- Excellent Dynamic Range
- Low Noise: 8nV/√Hz @1KHz
- Package: P, PS, D

Package Options for NE5532A and RC4558

Pkg	Pins	Type	Description	Width (mm)	Length (mm)	Thickness (mm)	Pitch (mm)	Maximum Height (mm)
P	8	PDIP	Plastic In-Line	6.35	9.81	4.57	2.54	5.08
PS	8	SOP	Plastic Small Outline	5.3	6.2	1.95	1.27	2
D	8	SOP	Plastic Small Outline	3.91	4.9	1.57	1.27	1.75

Analog Switch for Audio/Signals



Device Name	No.of pins	Description
SN74LV4051A	16	8 - Channel Analog Multiplexer/Demultiplexer
SN74LV4052A	16	Dual 4 - Channel Analog Multiplexer/Demultiplexer
SN74LV4053A	16	Triple 2 - Channel Analog Multiplexer/Demultiplexer
SN74LV4040A	16	12 - Bit Asynchronous Binary Counters
SN74LV4066A	14	Quadruple Bilateral Analog Switch
SN74LVC2G53	8	Dual Analog Multiplexer Demultiplexer
SN74LVC1G66	5	Single Analog Switch
SN74LVC2G66	8	Dual Analog Switch

SN74LVC2G53

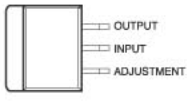
Parameter Name	5.0V	3.3V	2.5V	1.8V
Voltage Nodes (V)	5	3.3	2.5	1.8
Vcc min (V)	1.65	1.65	1.65	1.65
Vcc max (V)	5.5	5.5	5.5	5.5
tpd max (ns)	0.6	0.8	1.2	2
ICC (μA)	10	10	10	10

Linear Regulator

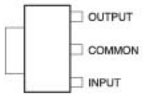
Device Name	Device Description	Packages
LM237	3-Terminal, 1.5A Adjustable Negative Voltage Regulator	KC, KTE
LM317	3-Terminal, 1.5A Adjustable Positive Voltage Regulator	KC, KTE, DCY
LM317M	3-Terminal, 500mA Adjustable Positive Voltage Regulator	KTP, DCY
LM337	3-Terminal, 1.5A Adjustable Negative Voltage Regulator	KC, KTE
MC79L05A	5V, 100mA Fixed Negative Voltage Regulator	D, LP
MC79L12A	12V, 100mA Fixed Negative Voltage Regulator	D, LP
MC79L15	15V, 100mA Fixed Negative Voltage Regulator	D, LP
MC79L15A	15V, 100mA Fixed Negative Voltage Regulator	D, LP
TL317	3-Terminal, 100mA Adjustable Positive Voltage Regulator	D, LP
TL780-05	5V, 1.5A Fixed Positive Voltage Regulator (Upgrade for UA7805)	KC, KTE
TL780-12	12V, 1.5A Fixed Positive Voltage Regulator (Upgrade for UA7812)	KC, KTE
TL780-15	15V, 1.5A Fixed Positive Voltage Regulator (Upgrade for UA7815)	KC, KTE
TL783	3-Terminal, 700mA, High-Voltage Adjustable Positive Voltage Regulator	KC
UA723	Adjustable, 150mA Precision Voltage Regulator	D
UA7805	5V, 1.5A Fixed Positive Voltage Regulator	KC, KTE
UA7808	8V, 1.5A Fixed Positive Voltage Regulator	KC, KTE
UA7810	10V, 1.5A Fixed Positive Voltage Regulator	KC, KTE
UA7812	12V, 1.5A Fixed Positive Voltage Regulator	KC, KTE
UA78L02A	2V, 100mA Fixed Positive Voltage Regulator	D, LP, PK
UA78L05	5V, 100mA Fixed Positive Voltage Regulator	D, LP, PK
UA78L05A	5V, 100mA Fixed Positive Voltage Regulator	D, LP, PK
UA78L06A	6V, 100mA Fixed Positive Voltage Regulator	D, LP, PK
UA78L08	8V, 100mA Fixed Positive Voltage Regulator	D, LP, PK
UA78L08A	8V, 100mA Fixed Positive Voltage Regulator	D, LP, PK
UA78L09	9V, 100mA Fixed Positive Voltage Regulator	D, LP, PK
UA78L09A	9V, 100mA Fixed Positive Voltage Regulator	D, LP, PK
UA78L10A	10V, 100mA Fixed Positive Voltage Regulator	D, LP, PK
UA78L12A	12V, 100mA Fixed Positive Voltage Regulator	D, LP, PK
UA78L15A	15V, 100mA Fixed Positive Voltage Regulator	D, LP, PK
UA78M05	5V, 500mA Fixed Positive Voltage Regulator	KC, KTP, DCY
UA78M06	6V, 500mA Fixed Positive Voltage Regulator	KC, KTP, DCY
UA78M08	8V, 500mA Fixed Positive Voltage Regulator	KC, KTP, DCY
UA78M09	9V, 500mA Fixed Positive Voltage Regulator	KC, KTP, DCY
UA79M08	8V, 500mA Fixed Negative Voltage Regulator	KC, KTP, DCY

Package Options

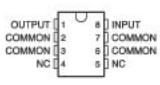
KC (TO220AB)



KTE

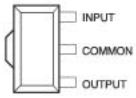


DCY (SOT223)

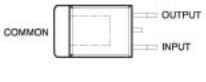


D

LP



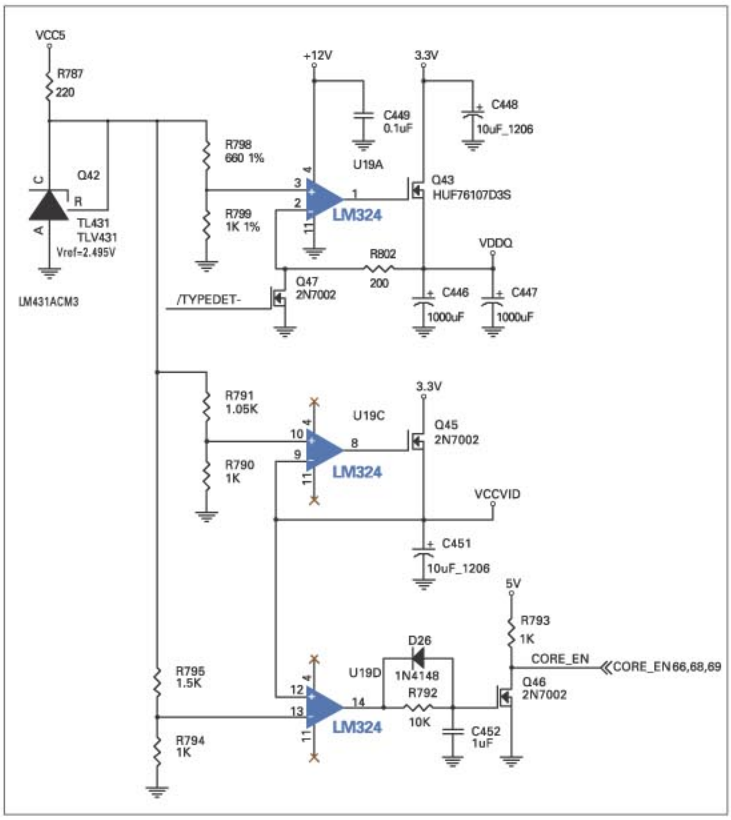
PK



KTP

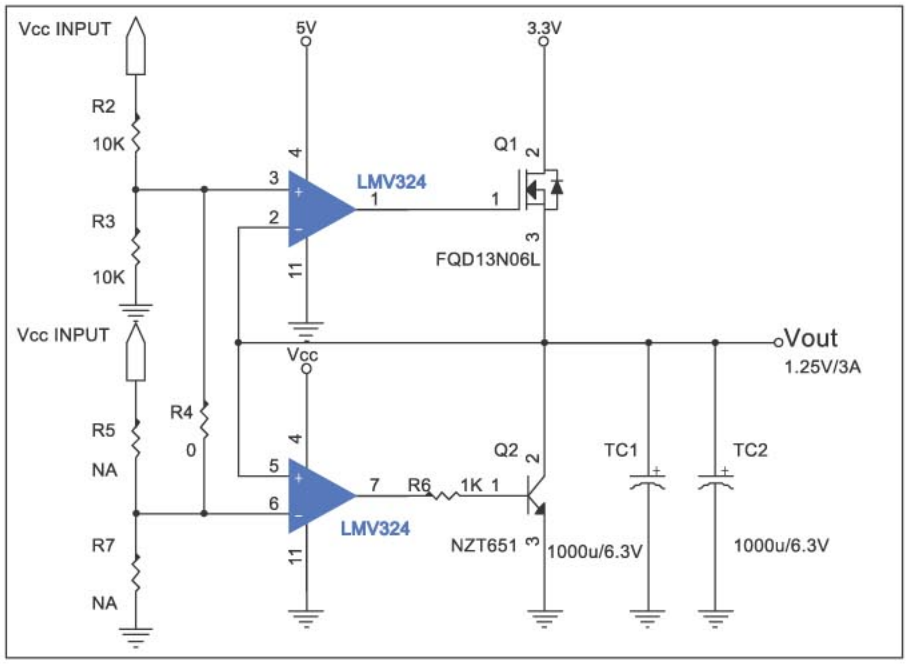
Linear Regulator

Cost-Effective Design Example for System Power with 12V inputs



Linear Regulator

Cost-Effective Design Example for System Power with 5V inputs



Features ▸

LM324

- Supply Voltage: 3 V – 30 V
- Quardruple Operational Amplifier
- Package: D, DB, N, NS, PW

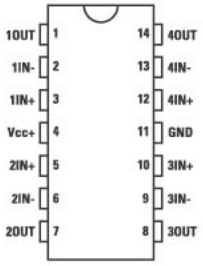
LM358

- Supply Voltage: 3 V – 30 V
- Dual Operational Amplifier
- Package: D, P, PS, PW

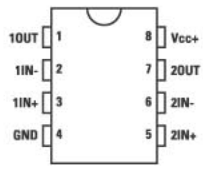
LMV321, LMV324, LMV358

- Supply Voltage: 2.7 V– 5 V
- Low Supply Current
  - LMV321 – 130 µA Typ
  - LMV358 – 210 µA Typ
  - LMV324 – 410 µA Typ
- Number of Channels
  - LMV321 – Single Op Amp
  - LMV358 – Dual Op Amps
  - LMV324 – Quad Op Amps
- Rail-to-Rail Output Swing
- Wide Bandwidth
  - Unity-gain Bandwidth = 1Mhz Typ

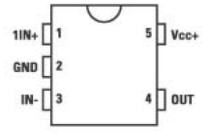
Quad-Op Amps



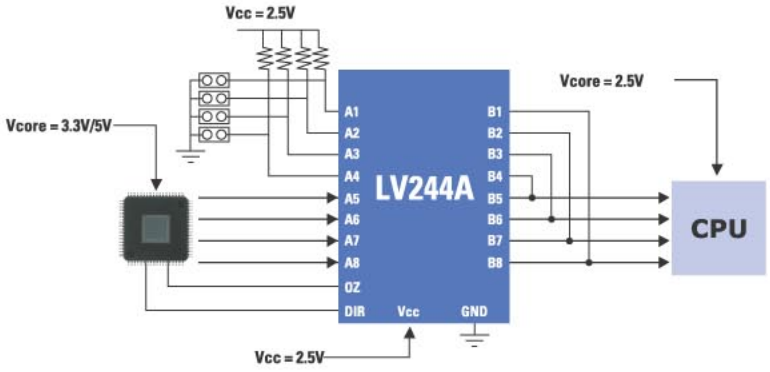
Dual-Op Amps

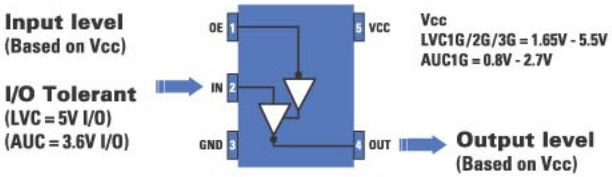


Single-Op Amps



Standard Level Shifter





Features ▸

LV-A

- Ioff 5 µA
- Vcc: 2 V to 5.5V
- 5V I/O tolerant
- DW, DB, PW, DGV

LVC/LVC1G/2G/3G

- LVC: 1.65 V to 3.6 V
- LVC 1G/2G/3G: 1.65V to 5.5V
- Ioff 10 µA
- 5V I/O tolerant
- LVC 1G/2G/3G: DCK, DBV, DCU, DCT

AUC1G

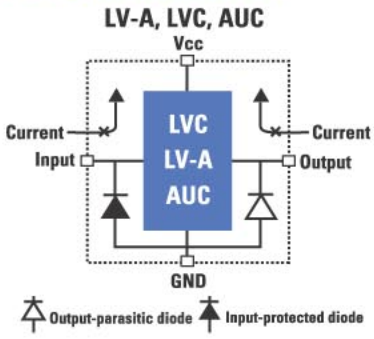
- Vcc: 0.8V to 2.7V
- Ioff 10 µA
- 3.6V I/O tolerant
- 5-pin DCK, 5-pin DBV

Performance Comparison

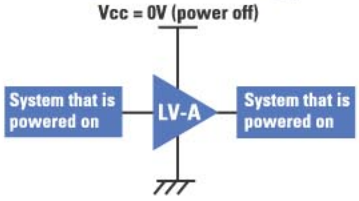
Parameter Name	LV-A	LVC	LVC1G/2G/3G
Voltage Nodes (V)	2 - 5.5	1.65 - 3.6	1.65 - 5.5
I/O Tolerant (V)	5	5	5
Ioff for Partial-Power Down	Yes	Yes	Yes
Vcc = 3.3 V +/- 0.3 V			
tpd (Propagation Delay) (ns)	5 - 7.9	1 - 4.1	1.1 - 4.5
tpd (Output Enable) (ns)	6.9 - 11.4	7.6 - 11.5	1.4 - 5.4
Driving Capability (mA)	6	24	24
Vcc = 2.5 V +/- 0.2 V			
tpd (Propagation Delay) (ns)	7.1 - 12.9	1 - 7.9	1.4 - 5.5
tpd (Output Enable) (ns)	9.6 - 16.9	1 - 9.6	2.1 - 6.5
Driving Capability (mA)	2	8	8
Vcc = 1.8 V			
tpd (Propagation Delay) (ns)	-	9 - 10	3 - 8
tpd (Output Enable) (ns)	-	14.6	3.8 - 9.4
Driving Capability (mA)	-	4 - 6	4 - 6
Vcc = 1.5 V			
tpd (Propagation Delay) (ns)	-	-	-
tpd (Output Enable) (ns)	-	-	-
Driving Capability (mA)	-	-	-
Vcc = 1.2 V			
tpd (Propagation Delay) (ns)	-	-	-
tpd (Output Enable) (ns)	-	-	-
Driving Capability (mA)	-	-	-

Note 1 : Only octals of LVC

I/O Equivalent Circuit

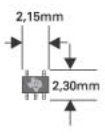
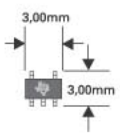
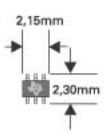
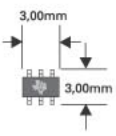
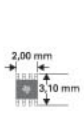
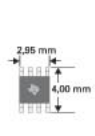
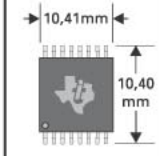
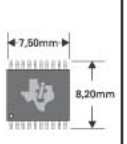
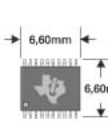
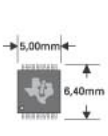


Partial-power-down application



The path is completely isolated without being affected by systems under operation.

Package

5-pin SC-70 (DCK)	5-pin SOT-23 (DBV)	6-pin SC-70 (DCK)	6-pin SOT-23 (DBV)	8-pin US-8 (DCU)	8-pin SM-8 (DCT)	16-pin SOIC (DW)	20-pin SSOP (DB)	20-pin TSSOP (PW)	20-pin TVSOP (DGV)
									

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	Domestic	www.tij.co.jp/pic

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Indonesia	001-801-10	-800-800-1450
Korea	080-551-2804	–
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