

NISSHINBO日电清纺微授权代理商KOYUELEC光与电子，有代理证，能提供原厂技术支持和产品售后服务，联系电话0755-82542001，82574660邮箱lily@szkoyu.com, joshua@szkoyu.com感谢您的惠顾~

Hi-Fi Audio Products



Overview of MUSES series

About MUSES

MUSES is a brand name of the audio products which pursues high-quality sound.



Concept

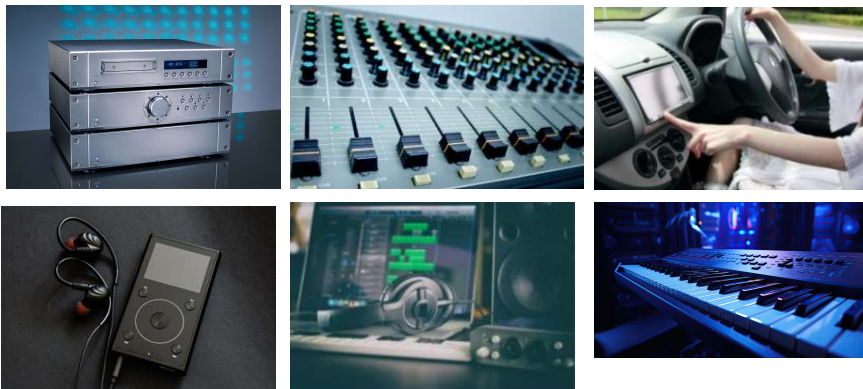
MUSES is the original products produced based on the following concept.

1. High-quality sound
2. Pursuit of **original sound reproduction**
3. Pursuing the excellent sound moving person's heart that can not be shown in specification

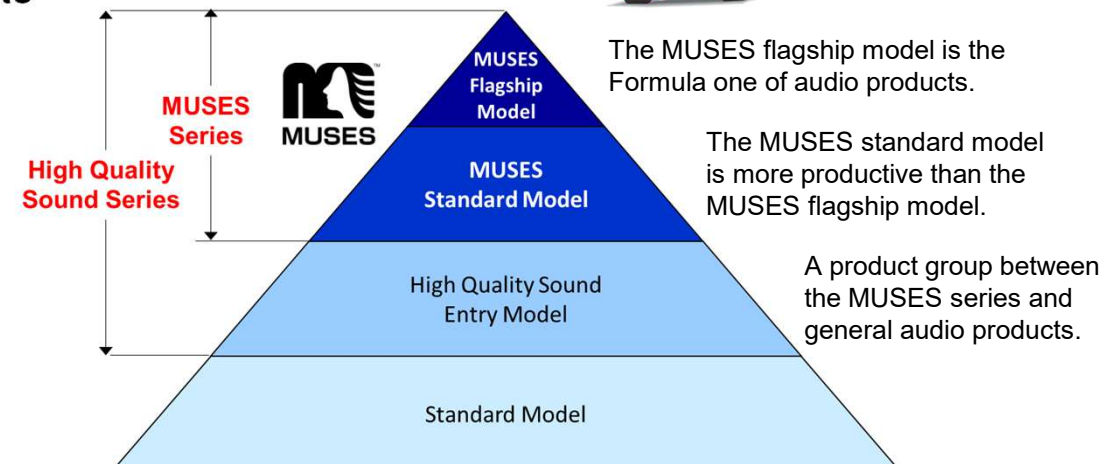


Application Example

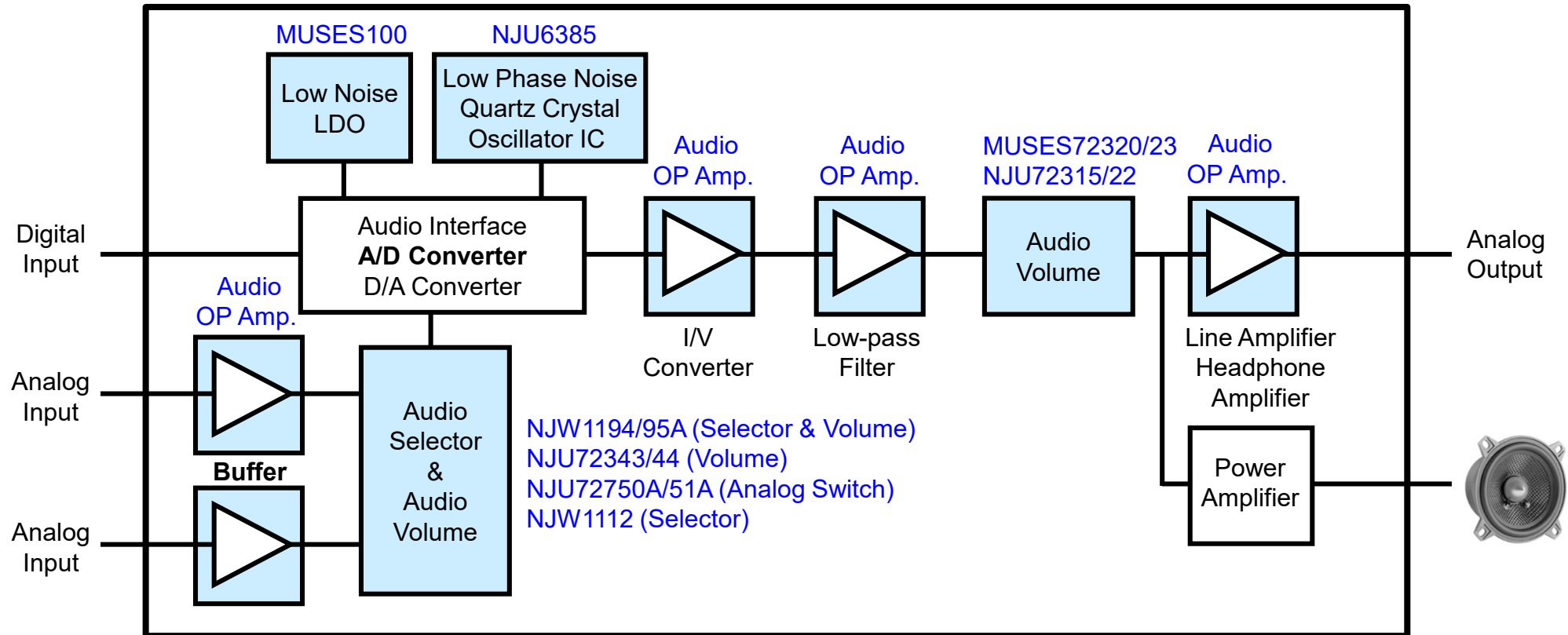
Home Audio, Pro Audio, Car Audio,
Portable Audio, Desktop Audio, Musical Instruments



Sound Quality Grade



Hi-Fi Audio System Block Diagram



Home Audio



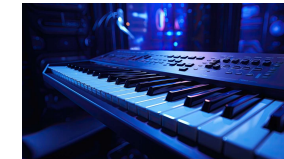
AV receiver
SACD player
Network player
Preamplifier

Portable Audio



Portable audio player
Portable headphone amplifier
IC recorder
Wireless headphone

Musical Instruments



Electronic piano
Synthesizer
Effector

Desktop Audio



Audio interface
USB-DAC
Sound card
Headphone amplifier

Professional Audio



Mixer
PA (Public Address)
SR (Sound Reinforcement)

Car Audio



Car navigation system
Car Audio system

Reason for High-quality Sound

1. Development philosophy that prioritizes sound quality

Development philosophy that prioritizes sound quality over cost and productivity

2. Thorough sound quality evaluation

Emphasis on sound quality evaluation rather than electrical characteristics

Listening evaluation in a dedicated audio room

3. Production system focusing on sound quality

Sound quality adjustment at our own factory.



Nisshinbo Micro Devices Inc.
Kawagoe Plant (Japan)



Nisshinbo Micro Devices Inc.
Yashiro Plant (Japan)



Nisshinbo Micro Devices
Fukuoka Co., Ltd. (Japan)



Nisshinbo Micro Devices
AT Co., Ltd.(Japan)



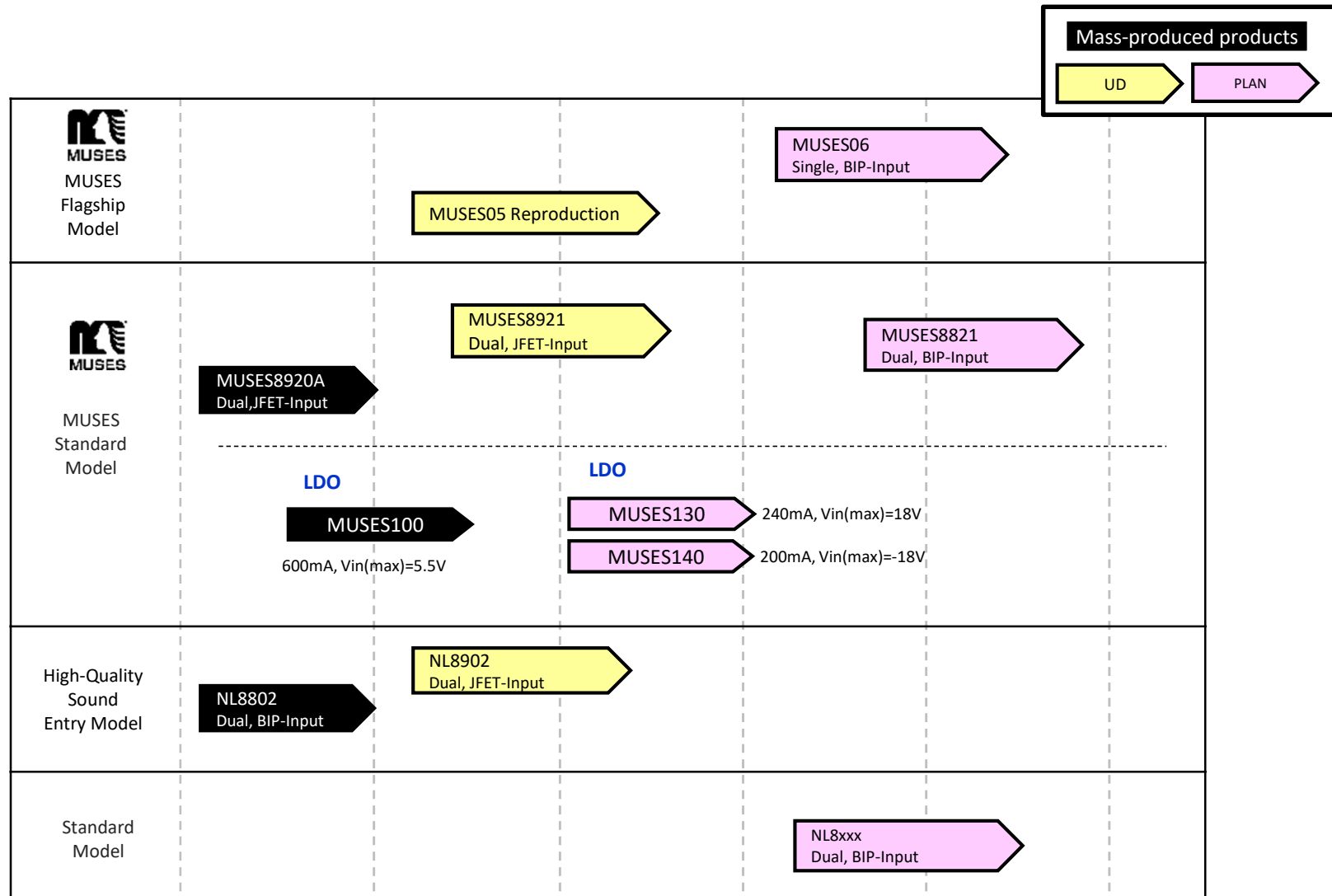
Nisshinbo Micro Devices
(Thailand)



Nisshinbo Micro Devices Inc.
Audio Room (Kawagoe Plant)

High Quality Audio OP-Amps

High Quality Audio OP-Amps Roadmap



High Quality Audio OP-Amps Line Up

Grade	Features	Bipolar-input Type	JFET-input Type
MUSES Flagship Model	The MUSES flagship models are the excellent semiconductor devices that put all the high sound quality technologies such as circuitry, chip-layout and lead-frame materials. This grade is suitable for premium and flagship models of audio equipment.	MUSES02  DIP8	MUSES01  DIP8
MUSES Standard Model	The MUSES standard models are based on the development concept of the MUSES flagship model and improves productivity by optimizing the production process. This grade is suitable for high-end, middle-to-high-end models of audio equipment.	MUSES8820  DIP8  EMP8 MUSES8832  EMP8  DFN8-W1	MP MUSES8920A  EMP8  DFN8-X7 U.D. MUSES8921  EMP-8-AN  DFN4035-8-GR
Standard Model	The Entry Models are devices that have improved cost performance by optimizing the production process with high sound quality technology cultivated at "MUSES". This grade is suitable for mid-range and above models of audio equipment.	NJM8801  EMP8 NJM8830  DFN8-W1  HSOP8-M1 MP NL8802  DFN3030-8-GQ  EMP-8-AN	U.D. NL8902  DFN4035-8-GR  EMP-8-AN

High Quality Audio OP-Amps List



Grade	Part Number	Voltage(V)	Channel	Icc/ch (mA)	En (nV/√Hz)	THD (%)	SR (V/μS)	GBW (MHz)	I _o (mA)	Package	Notes	status
MUSES Flagship Model	MUSES01	±9.0 to ±16	2ch.	4.25	9.5	0.002	12	3.3	100	DIP8	J-FET Input, OFC flame	MP
	MUSES02	±3.5 to ±16	2ch.	4.0	4.5	0.001	5	11	100	DIP8	Bipolar Input, OFC flame	MP
MUSES Standard Model	MUSES8820	±3.5 to ±16	2ch.	4.0	4.5	0.001	5	11	50	DIP8 EMP8	Bipolar Input	MP
	MUSES8832	±1.35 to ±7.0	2ch.	3.75	2.1	0.0009	1	10	32	EMP8 DFN8-W1	Bipolar Input Rail-to-Rail Output Low voltage Operation Ultralow Noise	MP
	MUSES8920A	±3.5 to ±16	2ch.	4.0	8.0	0.0004	25	11	100	EMP8 DFN8-X7	J-FET Input	MP
	MUSES8921	±3.5 to ±16	2ch.	4.0	8.0	0.0004	25	11	100	EMP8 DFN4035-8	J-FET Input	ES U.D.
Entry Model	NJM8830	±2.0 to ±5.25	2ch.	3.3	2.5	0.000012	30	90	100	DFN8-W1 HSOP8-M1	Bipolar Input Rail-to-Rail Output Ultralow Distortion Ultralow Noise	MP
	NJM8801	±2.0 to ±18	2ch.	3.0	4.5	0.0005	5	15	100	EMP8	Bipolar Input	MP
	NL8802	±3.0 to ±22	2ch.	4.0	5.5	0.00005	11	45	60	EMP-8-AN DFN3030-8	Bipolar Input Low Distortion High Operating Voltage	MP
	NL8902	±4.0 to ±16	2ch.	1.3	10	0.0005	20	9	50	EMP-8-AN DFN4035-8	J-FET Input	ES U.D.

OFC: Oxygen-Free Copper
 EMP8: SOP8 JEDEC 150mil, EMP-8-AN
 DFN8-W1: DFN3030-8-GQ, ESON8-W1
 DFN8-X7: DFN4035-8-GR, ESON8-X7



MUSES01 MUSES02

High-Quality Sound, Dual
Audio Operational Amplifier for Premium Audio



Confidential



- ❑ MUSES01 is the flagship model of the MUSES series and is a J-FET input type audio operational amplifier.
- ❑ MUSES02 is the flagship model of the MUSES Series and is a bipolar input type audio operational amplifier.

Features

MUSES01

- **High-Quality Sound**
- Operating Voltage $\pm 9.0\text{V}$ to $\pm 16\text{V}$
- Low Noise $9.5\text{nV}/\sqrt{\text{Hz}}$ typ. at $f=1\text{kHz}$
- Slew Rate $12\text{V}/\mu\text{s}$ typ.
- **High Channel Separation** 150dB typ.
- Low Input Bias Current 200pA typ.
- J-FET Input
- Bipolar Technology
- Package Outline DIP8 (OFC* lead-frame)

MUSES02

- **High-Quality Sound**
- Operating Voltage $\pm 3.5\text{V}$ to $\pm 16\text{V}$
- Low Noise $4.5\text{nV}/\sqrt{\text{Hz}}$ typ. at $f=1\text{kHz}$
- Slew Rate $5\text{V}/\mu\text{s}$ typ.
- **High Channel Separation** 150dB typ.
- Bipolar Input
- Bipolar Technology
- Package Outline DIP8 (OFC* lead-frame)

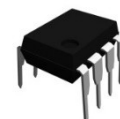
Target application

- Home Audio
- Professional Audio
- Desktop Audio
- Car Audio
- Portable Audio

Package



MUSES01
(DIP8)

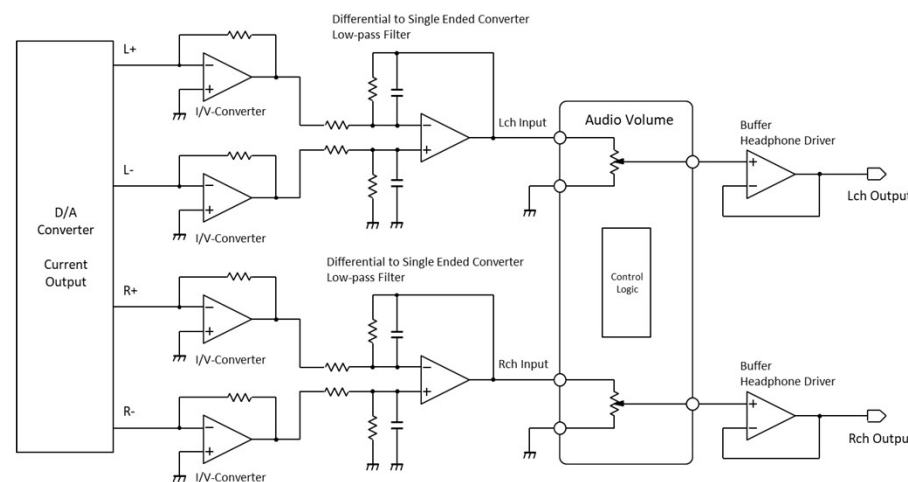


MUSES02
(DIP8)



MUSES01/02 is the first in the world to use high-purity oxygen-free copper in the lead frame, which has a major impact on sound quality.

Analog Audio Output System





MUSES8820 MUSES8832

High-Quality Sound, Dual
Audio Operational Amplifier



Confidential



- ❑ MUSES8820 is the standard model of the MUSES series, and is a bipolar input type audio operational amplifier.
- ❑ MUSES8832 is the standard model of the MUSES series, and is a bipolar input type audio operational amplifier. The MUSES8832 features low voltage operation, rail-to-rail output, and ultra-low noise.

Features

MUSES8820

- **High-Quality Sound**
- Operating Voltage $\pm 3.5\text{V}$ to $\pm 16\text{V}$
- **Low noise** $4.5\text{nV}/\sqrt{\text{Hz}}$ typ. at $f=1\text{kHz}$
- Low Distortion 0.001% typ.
- Slew Rate $5\text{V}/\mu\text{s}$ typ.
- Gain Bandwidth 11MHz typ.
- Bipolar Input, Bipolar Technology
- Package Outline DIP8, SOP8 JEDEC 150mil (EMP8)

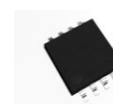
MUSES8832

- **High-Quality Sound**
- **Low Operating Voltage** $\pm 1.35\text{V}$ to $\pm 7\text{V}$
- **Ultralow Noise** $2.1\text{nV}/\sqrt{\text{Hz}}$ typ. at $f=1\text{kHz}$
- Low Distortion 0.0009% typ.
- Gain Bandwidth 10MHz typ.
- **Rail-to-Rail Output**
- Bipolar Input, Bipolar Technology
- Package Outline SOP8 JEDEC 150mil (EMP8)
DFN8-W1 (ESON8-W1)

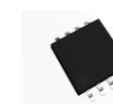
Target application

- Home Audio
- Professional Audio
- Desktop Audio
- Car Audio
- Portable Audio

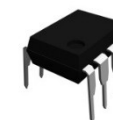
Package



MUSES8820E (SOP8 JEDEC 150mil (EMP8))



MUSES8832E (SOP8 JEDEC 150mil (EMP8))

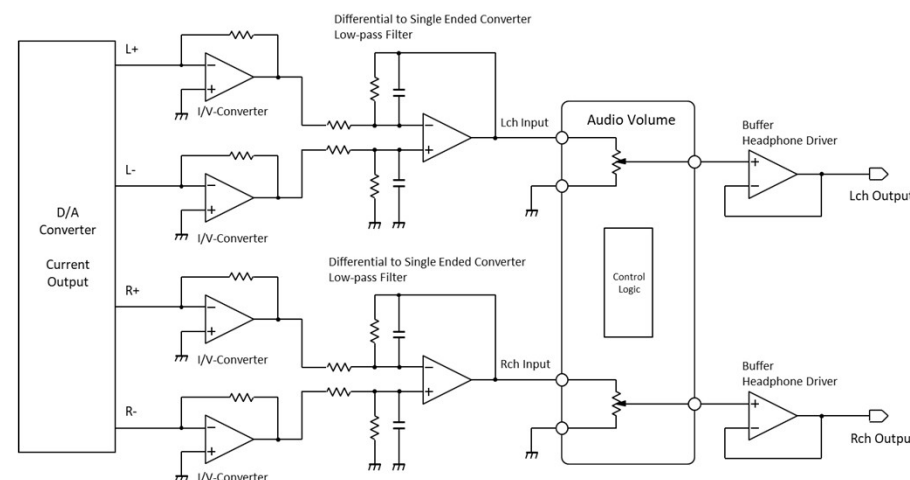


MUSES8820D (DIP8)



MUSES8832KW1 (DFN8-W1 (ESON8-W1))

Analog Audio Output System





MUSES8920A MUSES8921

High-Quality Sound, JFET input, Dual
Audio Operational Amplifier



Confidential

- ❑ MUSES8920A is the standard model of the MUSES series, and is a JFET input type audio operational amplifier. MUSES8920A is an equivalent product of MUSES8920(EOL).
- ❑ MUSES8921 is the standard model of the MUSES series, and is a JFET input type audio operational amplifier. MUSES8921 is a sound quality improvement product of MUSES8920/A.
- ❑ DFN4035-8-GR (DFN8-X7) is a small, high heat dissipation package suitable for portable audio equipment and products that require high-density mounting.

Features

- High-Quality Sound
- High Slew Rate $25\text{V}/\mu\text{s}$ typ
- Low Distortion 0.0003% typ. At $f=1\text{kHz}$
- Low Noise $8\text{nV}/\sqrt{\text{Hz}}$ typ. at $f=1\text{kHz}$
- Gain Bandwidth Product 11MHz typ.
- Low Input Bias Current 5pA typ.
- Operating Voltage Range $\pm 3.5\text{V}$ to $\pm 17\text{V}$
- Supply Current 9.0mA typ. (dual)
- JFET Input
- Bipolar Technology
- Package Outline EMP-8-AN
DFN4035-8-GR (DFN8-X7)

Target application

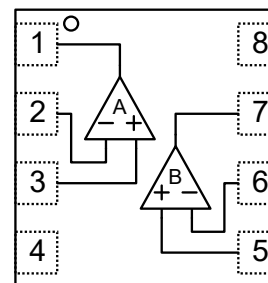
- Home Audio
- Professional Audio
- Desktop Audio
- Car Audio
- Portable Audio

Package

MUSES8920AE
MUSES8921AN
(EMP8-AN)

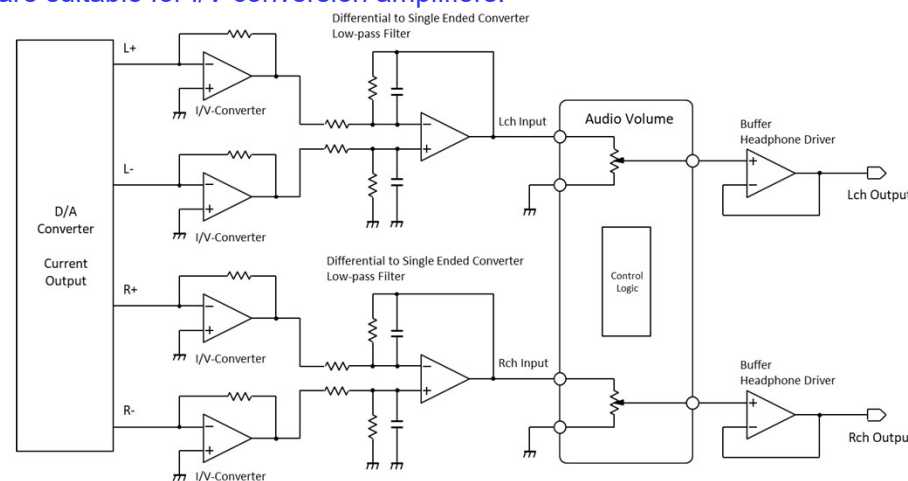
MUSES8902AKX7
MUSES8921GR
(DFN4035-8GR/ DFN8-X7)

Pin Configuration



Analog Audio Output System

The low input bias current characteristics of JFET input operational amplifiers are suitable for I/V conversion amplifiers.





NL8802

Low Noise, High Voltage, Dual High-Quality Sound Audio Operational Amplifier



- ❑ The NL8802 is the entry-level model of the high-quality sound device series and is a high-quality sound audio operational amplifier with a good balance of sound quality, performance and cost.
- ❑ The NL8802 is high operating voltage of $\pm 22\text{ V}$ makes it ideal for HiFi and professional audio equipment requiring a wide dynamic range.
- ❑ DFN3030-8-GQ is a small, high heat dissipation package suitable for portable audio equipment and products that require high-density mounting.

Features

- High Quality Sound
- Wide Operating Voltage Range $\pm 3.0\text{V to } \pm 22\text{V}$
- Low Noise $5.5\text{nV}/\sqrt{\text{Hz}}$ at $f=1\text{kHz}$
- Low Distortion 0.00005% at $f=1\text{kHz}$
- Wide Gain Bandwidth Product 45MHz
- High Slew Rate $11\text{V}/\mu\text{s}$
- Quiescent Current 8.0mA (Dual)
- Bipolar Input
- Bipolar Technology
- Package Outline EMP-8-AN, DFN3030-8-GQ

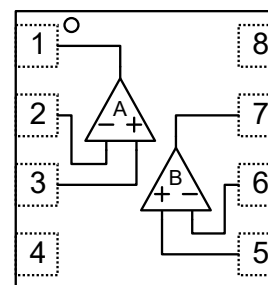
Target application

- Home Audio
- Professional Audio
- Desktop Audio
- Car Audio
- Portable Audio

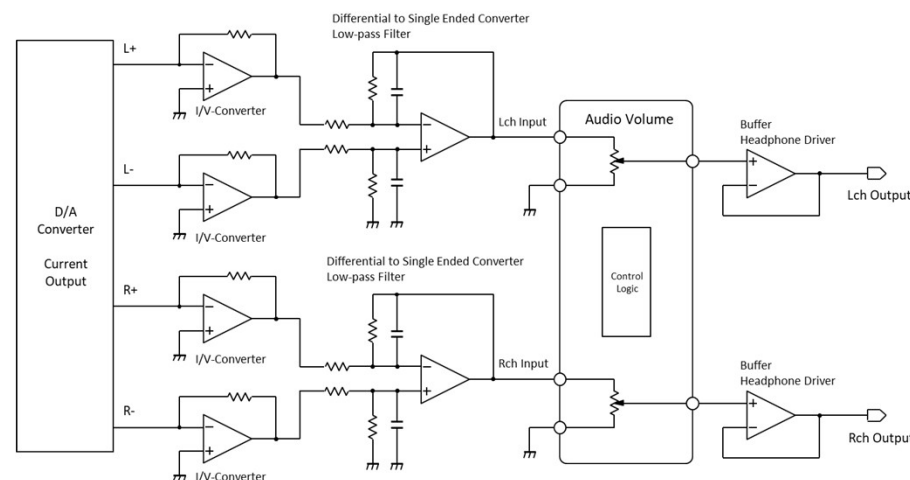
Package



Pin Configuration



Analog Audio Output System





NL8902

JFET input, Dual High-Quality Sound Audio Operational Amplifier



- ❑ The NL8902 is the entry-level model of the high-quality sound device series and is a high-quality sound audio operational amplifier with a good balance of sound quality, performance and cost.
- ❑ Improving product usability (High EMI Immunity, No Phase Reversal, Unity-Gain Stable)
- ❑ DFN4035-8-GR is a small, high heat dissipation package suitable for portable audio equipment and products that require high-density mounting.

Features

- **High-Quality Sound**
- Low Distortion 0.0004% typ. At f=1kHz
- Low Noise 10nV/ $\sqrt{\text{Hz}}$ typ. at f=1kHz
- **High Slew Rate** 20V/ μs typ
- Gain Bandwidth Product 9MHz typ.
- Operating Voltage Range $\pm 4.0\text{V}$ to $\pm 16\text{V}$
- Supply Current 2.6mA typ. (dual)
- **High EMI Immunity** EMIRR = 82dB (f = 1.8GHz)
- No Phase Reversal over Input Voltage Range
- Unity-Gain Stable
- JFET Input
- Bipolar Technology
- Package Outline EMP-8-AN, DFN4035-8-GR

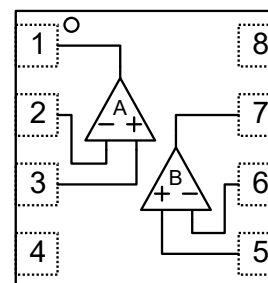
Target application

- Home Audio
- Professional Audio
- Desktop Audio
- Car Audio
- Portable Audio

Package

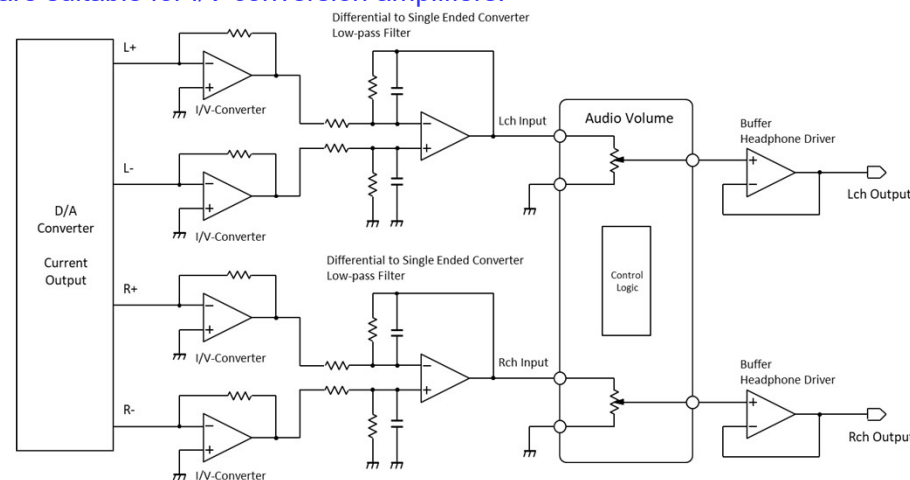


Pin Configuration



Analog Audio Output System

The low input bias current characteristics of JFET input operational amplifiers are suitable for I/V conversion amplifiers.





NJM8830

Ultralow Distortion, Ultralow Noise, Rail-to-Rail Output
Dual Audio Operational Amplifier



- Excellent audio characteristics such as ultra-low distortion, ultra-low noise, and high slew rate.
- High output current characteristics that can drive headphones in operating voltage $\pm 5V$.
- DFN8-W1 is a small, high heat dissipation package suitable for portable audio equipment and products that require high-density mounting.

Features

- **Ultralow Distortion** 0.000012% (-138dB) typ. at f=1kHz
- **Ultralow Noise** 2.5nV/ $\sqrt{\text{Hz}}$ typ. at f=1kHz
- **Wide Gain Bandwidth** 90MHz typ.
- **High Slew Rate** 30V/ μs typ.
- **High Output Current** 100mA typ.
- **Rail-to-Rail Output**
- **Operating Voltage** $\pm 2.0V$ to $\pm 5.25V$
- **Supply Current** 6.5mA typ. (Dual)
- **Bipolar Input**
- **Bipolar Technology**
- **Package Outline** DFN8-W1 (ESON8-W1)
HSOP8-M1

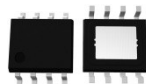
Target application

- Home Audio
- Professional Audio
- Desktop Audio
- Car Audio
- Portable Audio

Package

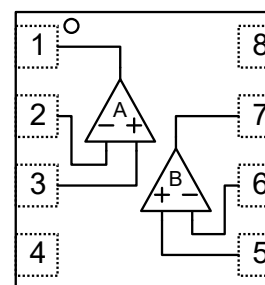


NJM8830KW1
DFN8-W1 ((ESON8-W1))



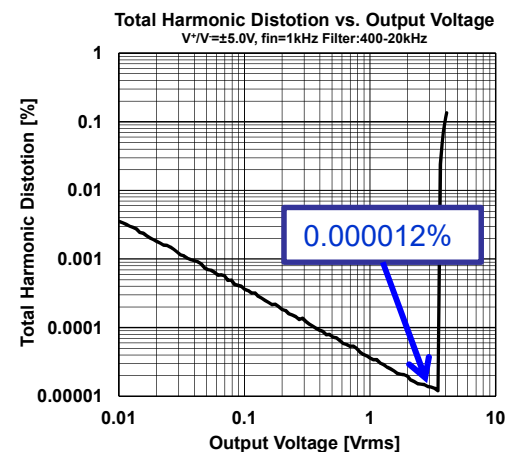
NJM8830GM1
(HSOP8-M1)

Pin Configuration

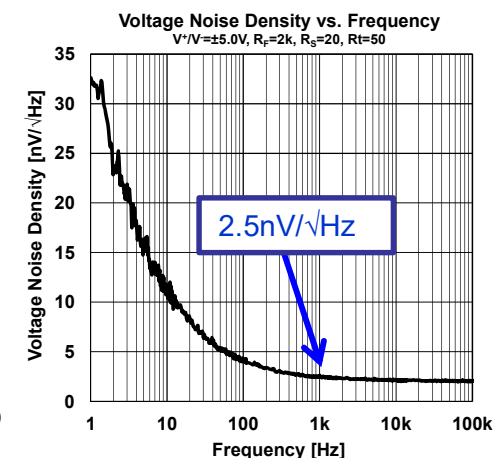


Typical Characteristics

Ultralow Distortion



Ultralow Noise



Audio Volume

Audio Signal Processing Block Products List I



■ $\pm 18V$ Operation Dual Supply 2-channel Audio Volume

Part Number	Voltage(V)	Channel	Volume Range	Selector	Noise THD	Zero Cross	Buffer	Control	Package	Notes	Status
NJU72322	± 10 to ± 18	2ch.	+21 to -111.5dB 0.5dB/ 3dB step, Mute	-	-118dBV 0.00024%	✓	-	3-wired Serial	SSOP32	$\pm 18V$ Operation	MP
MUSES72320	± 8.5 to ± 18	2ch.	+31.5 to -111.5dB 0.5dB step, Mute	-	-118dBV 0.0005%	✓	-	3-wired Serial	SSOP32	$\pm 18V$ Operation	MP
MUSES72323	± 10 to ± 18	2ch.	+21 to -111.75dB 0.25dB/ 3dB step, Mute	-	-124dBV 0.00024%	✓	-	3-wired Serial	SSOP32	$\pm 18V$ Operation Soft Step Circuit	MP

■ Dual Supply 2/4/8-channel Audio Volume

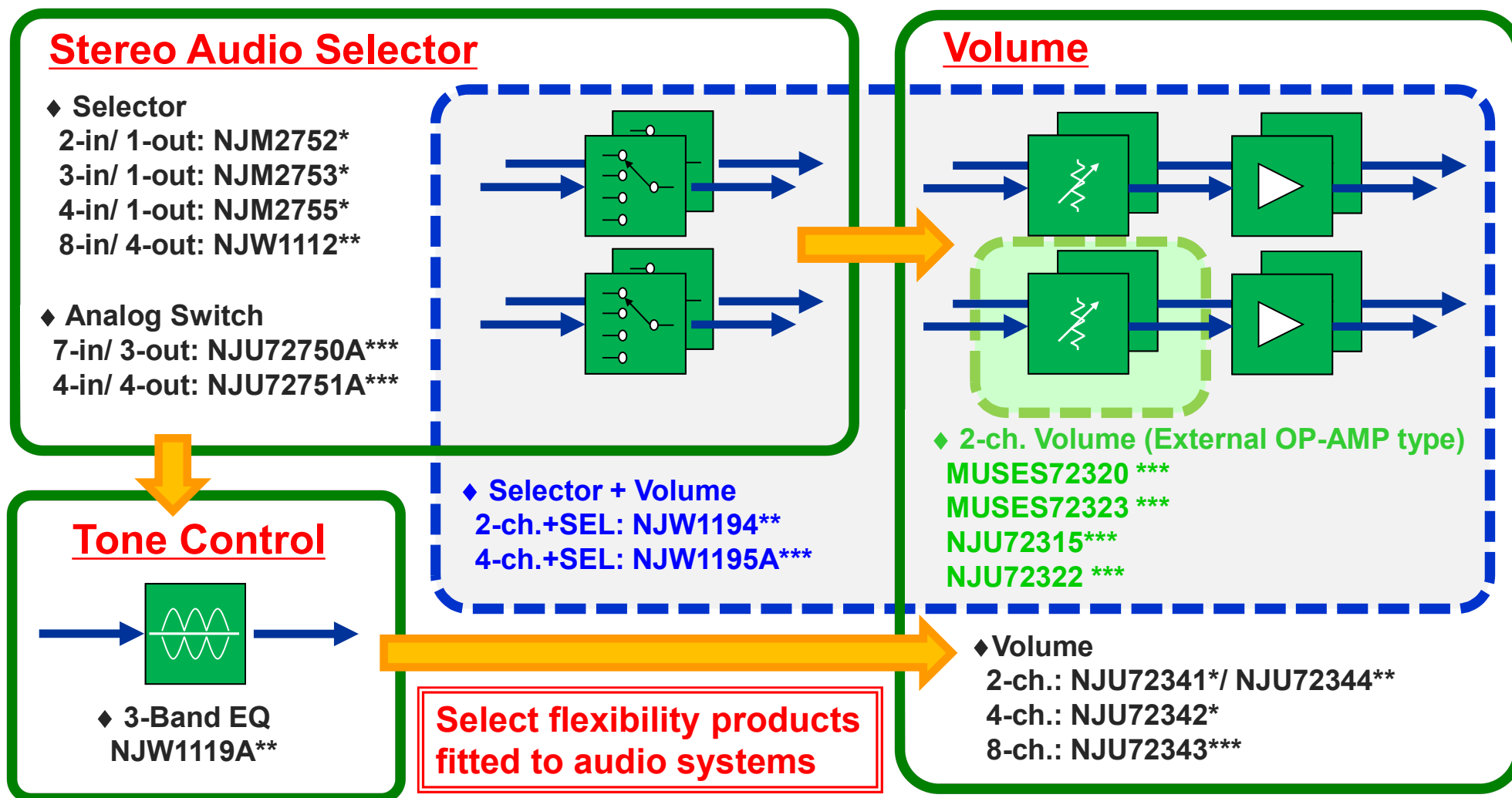
Part Number	Voltage(V)	Channel	Volume Range	Selector	Noise THD	Zero Cross	Buffer	Control	Package	Notes	Status
NJU72315	Analog: ± 3.0 to ± 5.5 Digital: 1.6 to 3.6	2ch.	0 to -62dB 2dB step, Mute	-	-124dBV 0.00013%	✓	-	I ² C BUS	WCSP16	Ultralow Noise Ultralow Distortion	MP
NJU72343	± 4.5 to ± 7.5 9 to 15	8ch.	+31.5 to -95dB 0.5dB step, Mute	Stereo 2-in 1-out	-117dBV 0.0004%	✓	✓	2-wired Serial	SSOP32	4 circuits only	MP
NJU72344	± 4.5 to ± 7.5	2ch.	+24 to -95dB 1/3/6dB step, Mute	-	-114dBV 0.001%	✓	✓	2-wired Serial	SSOP14	Gain:0,+3,+6,+12, +18,+24dB	MP
NJW1194	± 4.5 to ± 7.5	2ch.	+31.5 to -95dB 0.5dB step, Mute	Stereo 4-in 1-out	-117dBV 0.0015%	✓	✓	3-wired Serial	SSOP32	2Band Tone Control	MP
NJW1195A	± 3.5 to ± 7.5 or 7.0 to 15	2/4ch.	+31.5 to -95dB 0.5dB step, Mute	Stereo 4-in 2-out (Diff: 2-in 1-out)	-118dBV 0.0003%	✓	✓	3-wired Serial	SSOP32	4ch. Single-end 2ch. Differential	MP

■ Analog Switch

Part Number	Voltage(V)	Channel	Input	Output	Noise	THD	Package	Notes	Status
NJU72750A	± 4.5 to ± 7.5 9 to 15	Stereo	7	3	-	0.0004%	SSOP32	Analog switch, 2-wire	MP
NJU72751A	± 4.5 to ± 7.5 9 to 15	Stereo	4	4	-	0.0004%	SSOP32	Analog switch, 2-wire	MP

*MEET JEDEC MO-187-DA / THIN TYPE

Application for Audio Receiver System



* Single Supply
 ** Dual Supply
 *** Single/ Dual Supply

Advantages of Audio Volume

High quality sound & High performance

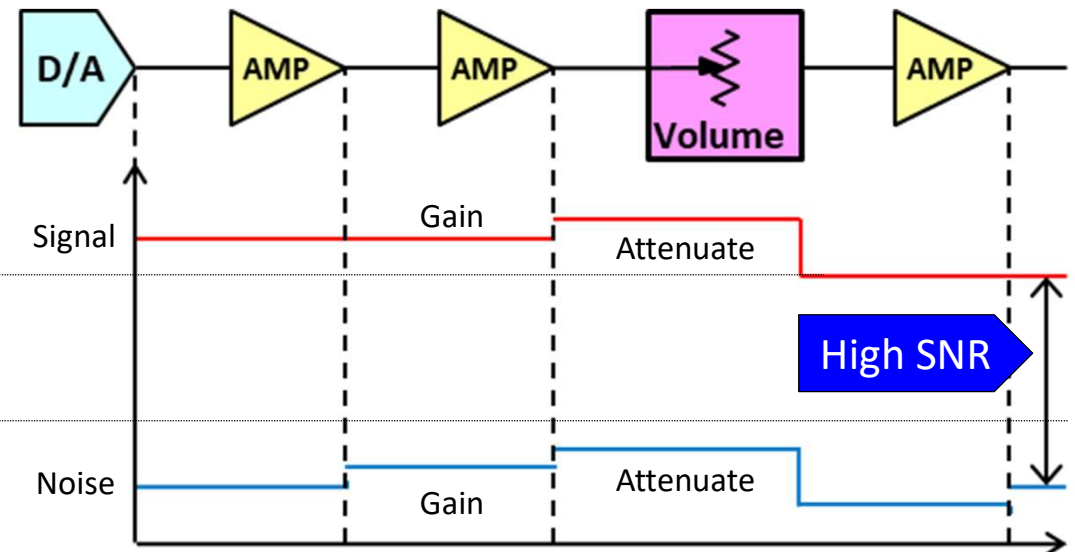
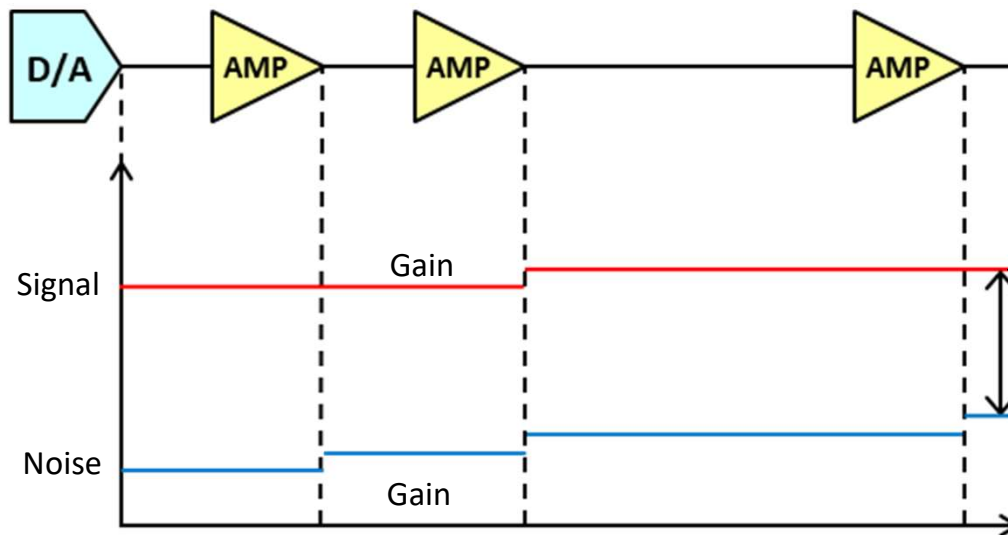
When attenuating with the external volume, the signal level and the noise level are attenuated, so the S/N ratio(SNR) does not change.

D/A converter built in volume

External analog audio volume

Noise level does not attenuate.

Signal level and noise level attenuate.

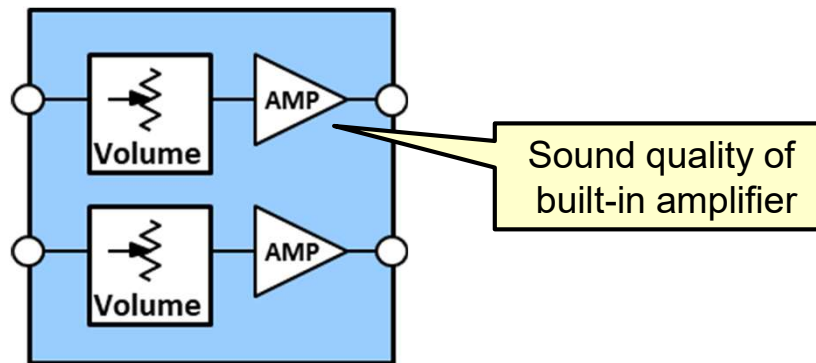


Advantages of High-performance Audio Volume

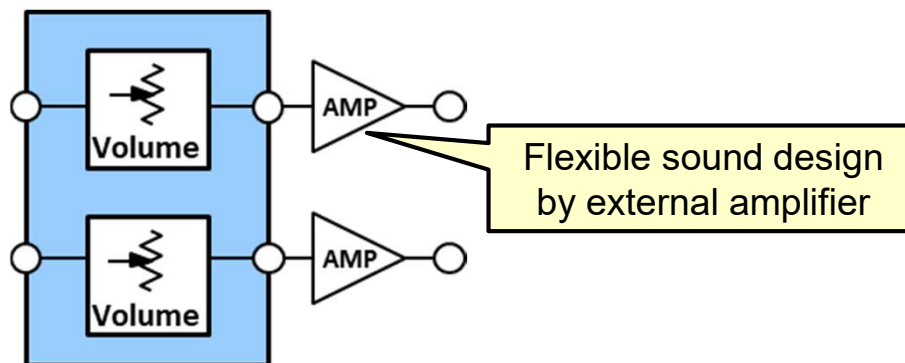
Flexible sound design (MUSES72323/NJU72322)

The Audio volume without amplifier enables flexible sound design by external amplifier.

Amplifier built-in volume



Audio volume without amplifier



High performance

- High operating voltage: $\pm 18V$ operation
- Low Noise, Low Distortion
- Low volume switching noise (Soft Step)

Product	MUSES72323	NJU72322
Op-Amp	Selectable External OP-Amp.	
Power Supply	± 10 to $\pm 18V$	
Attenuation	0 to -111.75dB 0.25dB step	0 to -111.5dB 0.5dB step
Gain	+21 to 0dB, 3dB step	
Output Noise*1	-124dBV 0.63 μ Vrms	-118dBV 1.26 μ Vrms
THD *1	0.00024%	0.00024%
Zero Cross Detection	√	√
Soft Step*2	√	-
Control	3-wired Serial	
PKG	SSOP32	
Chip Address	4	2
Pin Alignment	Common	
MOQ	100pcs	2000pcs

*1 External OP-Amp: MUSES8920A

*2 Soft-step function is to change gain settings step by step, and provides for reducing zipper noise during gain adjustments. 18/x



MUEES72323 NJU72322

High Quality Audio Volume with $\pm 18V$ Operation



- ❑ MUSES72323 is an audio volume flagship product developed based on the MUSES concept. NJU72322 is a product with improved productivity of MUSES72323.
- ❑ High Operating Voltage
High operating voltage gives a wider dynamic range and an optimized audio signal path.
- ❑ Flexible sound design
Highly flexible sound design by using external amplifier in-line with system demands.

Features

- High Operating Voltage

Analog	± 10 to $\pm 18V$
Digital	+3.0 to +5.5V
- Volume

MUSES72323	0 to -111.75dB/ 0.25dBstep +21 to 0dB / 3dBstep, Mute
NJU72322	0 to -111.5dB/ 0.5dBstep +21 to 0dB / 3dBstep, Mute
- Low Output Noise/ Low Distortion
* It depends on the characteristics of the external operational amplifier.
- Channel Separation -120dB typ.
- Soft-Step Circuit (Zipper noise reduction) * MUSES72323 only
- Zero Cross Detection Circuit
- Selectable Chip Address
- CMOS Technology
- Package Outline SSOP32

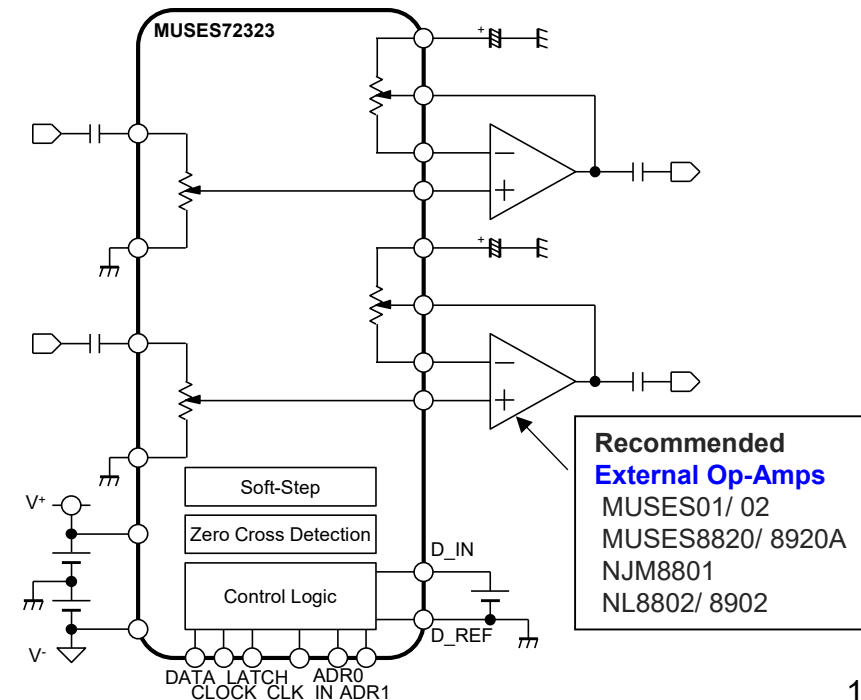
Package



Target application

- Home Audio
- Professional Audio
- Desktop Audio
- Car Audio
- Portable Audio

Block Diagram (MUSES72323)





NJW1195A 4-Channel Electronic Volume with Input Selector



- For differential transmission applications
The NJW1195A is available for 2-channel differential transmission electronic volume with 2-in 1-out stereo audio selector by a differential transmission select function.
- Compatible with single power supply and dual power supply
The NJW1195A supports both single power supply operation and dual power supply operation.

Features

- Operating Voltage Dual power supply ± 3.5 to ± 7.5 V
Single power supply $+7.0$ to $+15$ V
- 4in 2out Stereo Signal Selector
- Volume $+31.5$ to -95.0 dB / 0.5 dB step, Mute
- Differential transmission select function
- Low Output Noise -118 dBV typ.
- Low Distortion 0.0005% typ. at $V_{in}=1$ Vrms
- Zero Cross Detection
- 3-wired Serial BUS Control
- Selectable 4-Chip Address
- Bi-CMOS Technology
- Package Outline SSOP32

Target application

- Home Audio
- Professional Audio
- Desktop Audio
- Car Audio
- Portable Audio

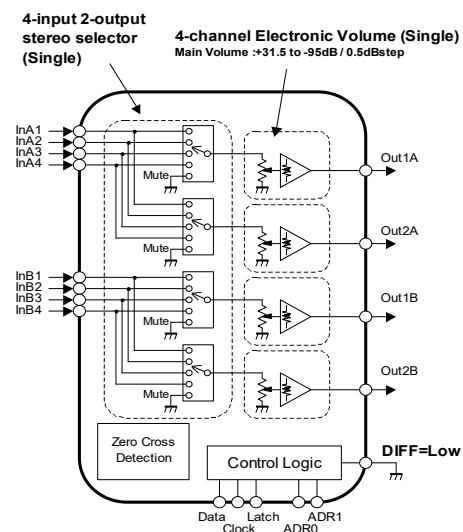
Package



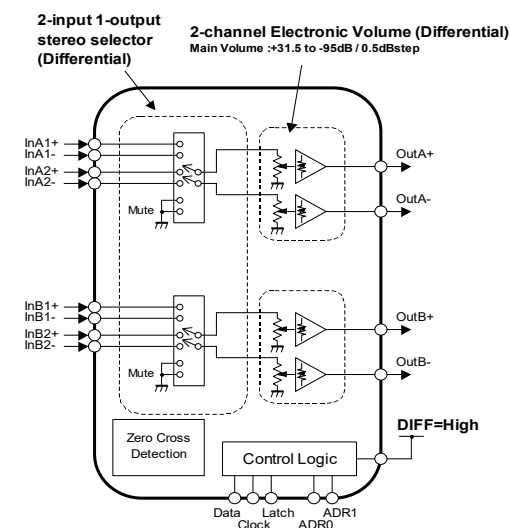
NJW1195AV
(SSOP32)

Block Diagram

Single-end transmission



Differential transmission





NJU72343 8-Channel Audio Volume

NJU72344 2-Channel Audio Volume



- **NJU72343**
NJU72343 is a 8-channel audio volume that controlled independently.
- **NJU72344**
NJU72344 is a 2-channel audio volume with built-in buffer that operates with dual power supplies.

Features

NJU72343

- Operating Voltage Dual power supply ± 4.5 to ± 7.5 V
Single power supply +9.0 to +15V
- 8ch input
- 2-in 1-out Selector
- Low Output Noise -117dBV typ.
- Low Distortion 0.0004% typ. at $V_{in}=1V_{rms}$
- Volume +31.5 to -95dB/ 0.5dB step, Mute
- Zero-cross Detection
- 2-wired Serial BUS Control
- Selectable 2-Chip Address
- CMOS Technology
- Package Outline SSOP32

NJU72344

- Operating Voltage ± 4.5 to ± 7.5 V
- Volume 0 to -95dB/ 1dB step, Mute
0 to +24dB/ 6dB step
- Low Output Noise -114dBV typ.
- Low Distortion 0.001% typ. at $V_{in}=1V_{rms}$
- External Mute Terminal
- Zero-cross Detection
- 2-wired Serial BUS Control
- RF-Immunity OPAMP
- CMOS Technology
- Package Outline SSOP14

Target application

- Multi-channel Audio System
- Home Audio
- Professional Audio
- Desktop Audio

Package

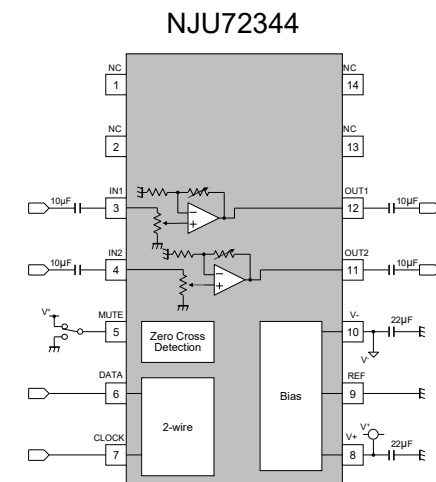
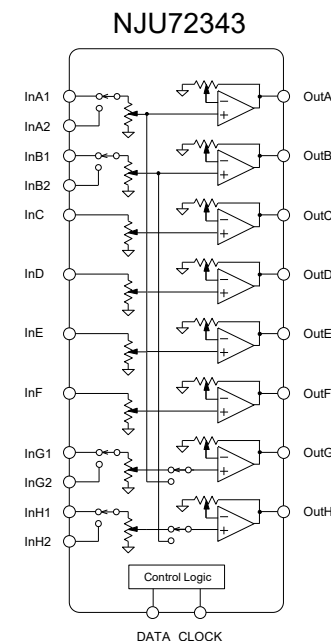


NJU72343V
(SSOP32)



NJU72344V
(SSOP14)

Block Diagram



Analog Switch



NJU72750A 7-Input / 3-Output Dual Analog Switch

NJU72751A 4-Input / 4-Output Dual Analog Switch



■ NJU72750A

The NJU72750A is a 7-input / 3-output dual analog switch. Functions are controlled via two-wired serial bus. A-channel switches and B-channel switches are controlled independently.

■ NJU72751A

The NJU72751A is a 4-input / 4-output dual analog switch. Functions are controlled via two-wired serial bus. A-channel switches and B-channel switches are controlled independently.

Features

NJU72750A

- Operating Voltage Dual power supply ± 4.5 to ± 7.5 V
Single power supply +9 to +15V
- 7-Input / 3-Output
- 2-wired Serial BUS Control
- Selectable 4-Chip Address
Available for using four chips on same serial bus line
- ON Resistance 15 Ω typ.
- Low Distortion 0.0004% typ. at $V_{in}=1V_{rms}$
- CMOS Technology
- Package Outline SSOP32

NJU72751A

- Operating Voltage Dual power supply ± 4.5 to ± 7.5 V
Single power supply +9 to +15V
- 4-Input / 4-Output
- 2-wired Serial BUS Control
- Selectable 4-Chip Address
Available for using four chips on same serial bus line
- ON Resistance 15 Ω typ.
- Low Distortion 0.0004% typ. at $V_{in}=1V_{rms}$
- CMOS Technology
- Package Outline SSOP32

Target application

- Multi-channel Audio System
- Home Audio
- Professional Audio
- Desktop Audio

Package

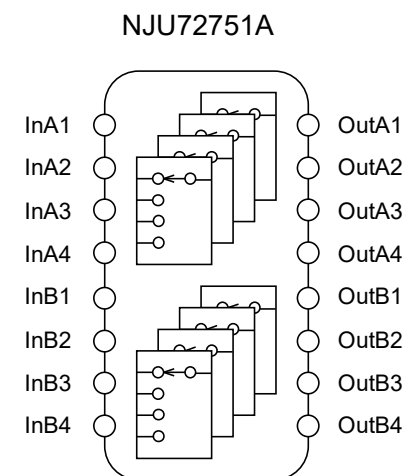
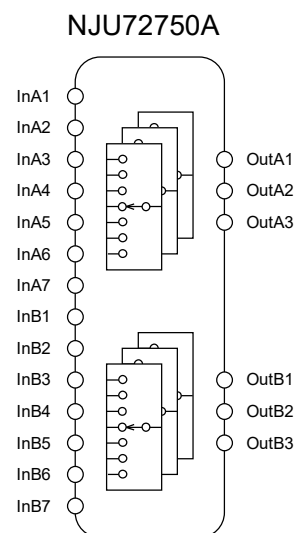


NJU72750AV
(SSOP32)



NJU72751AV
(SSOP32)

Block Diagram

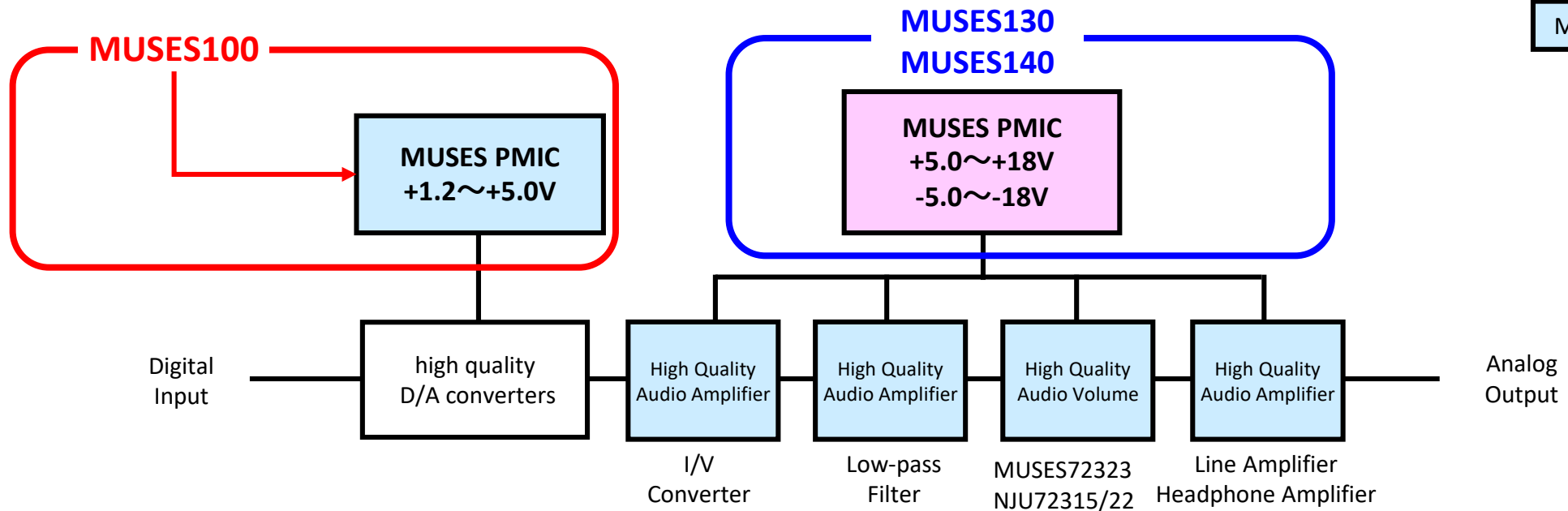


Power Management IC for MUSES

Power Management IC of MUSES

PMICs have a huge impact on the sound quality of audio equipment

MUSES PMIC can help to enhance the sound quality of audio equipment.



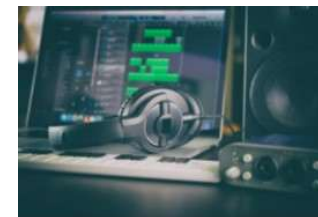
Home Audio



Car Audio



Mixer



Audio Interface



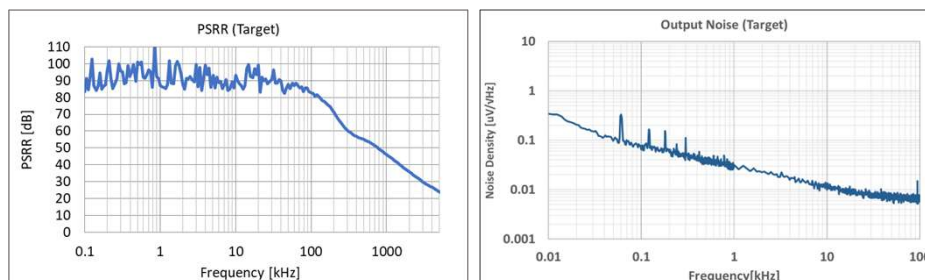
Portable Audio

- High sound quality is achieved by using circuits that emphasize sound quality, materials, and assembly techniques.
- It features high sound quality, ultra-low noise, and high PSRR, and suitable for power supply for high quality D/A converters.

Key Specification

Input Voltage Range	: 2.5V to 5.5V (Vabs=6.5 V)
Output Voltage Range	: 1.2 V to 5.0 V 1.2V, 1.5V, 1.8V, 3.3V, 5.0V
Output Current	: 600 mA
Quiescent Current	: 920uA (Typ.)
Output Noise	: Typ. 3Vrms (IOUT = 50 mA, CNR=470nF)
PSRR	: Typ. 90 dB (f = 1kHz,10kHz) Typ. 80 dB (f = 100 kHz)
Dropout Voltage	: Typ. 0.15 V (IOUT = 600 mA, VSET = 3.3 V)
Protective function	: Thermal shutdown, Inrush Current Limit

Key Function

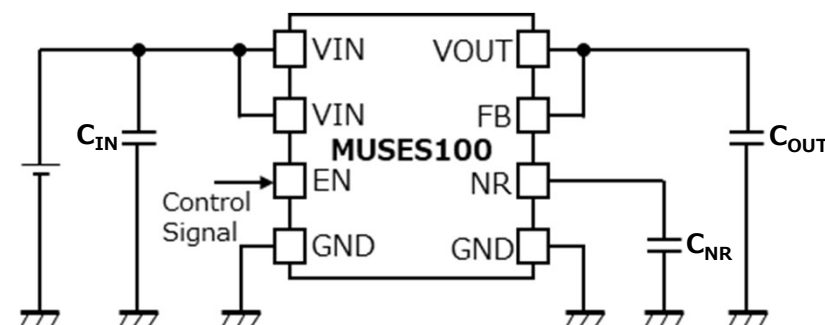


Typical Applications

$C_{OUT}=10\mu F$ (PMLCAP)

470 μF

(25NS106MD15750 (Rubycon)/
UKA1C471MPD (nichicon))



$C_{IN}=10\mu F$ (PMLCAP)

(25NS106MD15750 (Rubycon))

$C_{NR}=470nF$ (PMLCAP)

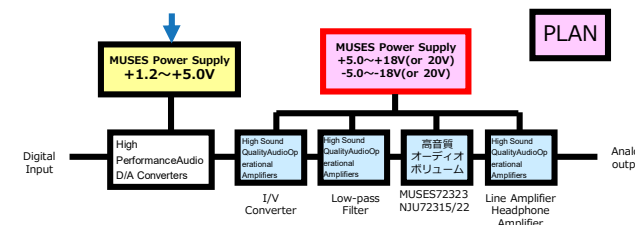
(35NS474MA13216 (Rubycon))

Package

DFN3030-8-GQ 3.0 x 3.0 x 0.7mm



- Circuitry, materials, and assembly techniques that emphasize sound quality to achieve high sound quality
- Features high sound quality power supply, ideal for power supplies for operational amplifiers, etc.



● MUSES130

High voltage / Positive power supply

Key Specification

Input Voltage Range	: 4.0V ~ 18.0V
Operating Temperature	: -40°C to 85°C
Output Voltage Range	: 2.6 V ~ 17 V
Output Current	: 320 mA (Typ.)
Supply Current	: TBD
PSRR	: Typ. 75 dB
Dropout Voltage	: Typ. 0.2 V ($I_{OUT} = 200 \text{ mA}$)
Protective function	: Thermal shutdown, Over Current Protection Circuit (OCP) Reverse Current Protection Circuit ON/OFF Control

Bip Process

Package

ESON8-W1(DFN3030-8-GQ) 3.0 x 3.0 x 0.7mm

● MUSES140

High voltage / Negative power supply

Key Specification

Input Voltage Range	: -4.0V ~ -18.0V
Operating Temperature	: -40°C to 85°C
Output Voltage Range	: -2.6 V ~ -17 V
Output Current	: 200 mA (Typ.)
Supply Current	: TBD
PSRR	: Typ. 65 dB
Dropout Voltage	: Typ. 0.13 V ($I_{OUT} = 120 \text{ mA}$)
Protective function	: Thermal shutdown, Internal Short Circuit Current Limit Soft-start function Shunt SW Function ON/OFF Control

Bip Process

Package

ESON8-W1(DFN3030-8-GQ) 3.0 x 3.0 x 0.7mm

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