SPEAKER ELEVATION AUDIO PROCESSOR with A/V Focus Filter

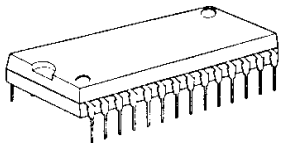
■ GENERAL DESCRIPTION

The **NJM2184** is a speaker elevation audio processor with A/V Focus Filter, based on SRS Focus technology. It is capable of raising sound image.

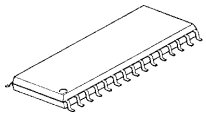
In addition, the **NJM2184** includes the A/V Focus Filter to reduce harsh sound when the speakers are directly put on hard-surface floor.

The **NJM2184** is suitable for almost all car audio, Projection TV, radio cassette, and then.

■ PACKAGE OUTLINE



NJM2184L



NJM2184M

■ FEATURES

- ●Operating Voltage (4.7 to 13V)
- ●Low Operating Current (7.0mA typ.)
- ●Low Output Noise (15μVrms typ.)
- ●Adjusted by LF Elevation, HF Elevation, and Bass Compensation Volume
- ●Internal A/V Focus Filter
- ●Bipolar Technology
- ●Package Outline SDIP28,SDMP30

For further information, please contact:
SRS Labs, Inc.
2909 Daimler Street. Santa Ana, CA 92705 USA
Tel:949-442-1070 Fax:949-852-1099 http://www.srslabs.com

■ **ABSOLUTE MAXIMUM RATING** (Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V^+	15	V
Power Dissipation	P_D	(SDIP28)700 (SDMP30)700	mW
Operating Temperature Range	T_{opr}	-40 to +85	°C
Storage Temperature Range	T_{stg}	-40 to +125	°C

■ **ELECTRICAL CHARACTERISTICS** (V^+=12V,Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Operating Voltage	V^+			4.7	12.0	13.0	V
Supply Current	I_{CC}	No Signal		-	7.0	10.5	mA
Reference Voltage	V_{REF}	V^+/2		5.8	6.0	6.2	V
Maximum Input Voltage	V_{INMAX}	f=1kHz at T.H.D.=3%	Bypass Mode	7.79 (2.45)	11.8 (3.88)	-	dBV (Vrms)
			Focus Mode	-4.71 (0.58)	-1.21 (0.87)	-	
			A/V Focus Mode	-5.21 (0.55)	-1.71 (0.82)	-	
		f=70Hz at T.H.D.=3% Controls ∞	Bypass Mode	-	11.8 (3.88)	-	
			Focus Mode	-	0.77 (1.1)	-	
			A/V Focus Mode	-	0.77 (1.1)	-	
		f=10kHz at T.H.D.=3% Controls ∞	Bypass Mode	-	11.8 (3.88)	-	
			Focus Mode	-	-8.71 (0.37)	-	
			A/V Focus Mode	-	-8.71 (0.37)	-	
Output Noise	V_{NOISE}	Vin=V_{REF} A-weight Controls ∞	Focus Mode	-	-94.0 (20.0)	-88.0 (40.0)	dBV (μVrms)
			A/V Focus Mode	-	-94.0 (20.0)	-88.0 (40.0)	
		Vin=V_{REF} A-weight Controls Center	Focus Mode	-	-96.5 (15.0)	-	
			A/V Focus Mode	-	-96.5 (15.0)	-	
		Vin=V_{REF} A-weight Controls 0	Focus Mode	-	-96.5 (15.0)	-	
			A/V Focus Mode	-	-96.5 (15.0)	-	

■ **ELECTRICAL CHARACTERISTICS**(V^+=12V,Ta=25°C)

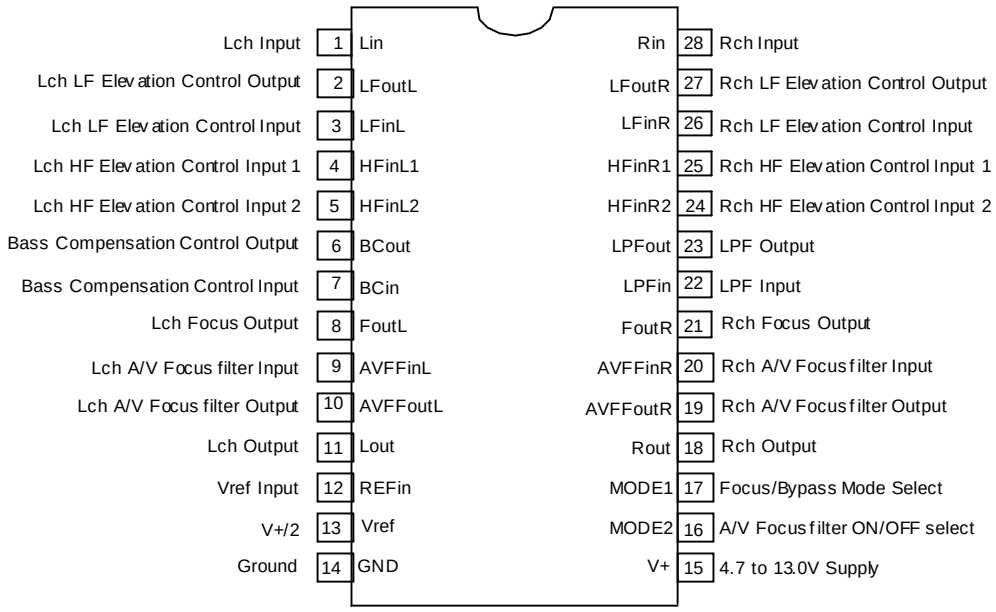
PARAMETER	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Output Noise	V_{NOISE}	Vin=V_{REF} DIN-AUDIO Controls ∞	Focus Mode	-	-90.1 (30.0)	-	dBV (μVrms)
			A/V Focus Mode	-	-90.1 (30.0)	-	
		Vin=V_{REF} DIN-AUDIO Controls Center	Focus Mode	-	-94.0 (20.0)	-	
			A/V Focus Mode	-	-94.0 (20.0)	-	
		Vin=V_{REF} DIN-AUDIO Controls 0	Focus Mode	-	-94.0 (20.0)	-	
			A/V Focus Mode	-	-96.5 (15.0)	-	
Channel Balance	CH_{BAL}	Vin=-17.2dBV f=1kHz Controls ∞	Focus Mode	-1.0	0.0	1.0	dB
			A/V Focus Mode	-1.0	0.0	1.0	
Total Harmonic Distortion	THD	Vin=-17.2dBV Lch f=1kHz Controls ∞	Focus Mode	-	0.05	0.20	%
			A/V Focus Mode	-	0.09	0.30	
BYPASS Gain	G_{BYP}	Vin=-17.2dBV f=1kHz	Bypass Mode	-1.0	0.0	1.0	dB
FOCUS Gain1	G_{FOC1}	Vin=-17.2dBV f=70Hz Controls ∞	Focus Mode	8.5	10.5	12.5	dB
FOCUS Gain2	G_{FOC2}	Vin=-17.2dBV f=20kHz Controls ∞	Focus Mode	19.0	21.0	23.0	dB
AVF Gain	G_{AVF}	Vin=-17.2dBV f=800Hz Controls 0	A/V Focus Mode	-12.0	-10.0	-8.0	dB
MODE Select Control Voltage	V_{MODE}	Vin= High Level		2.0	-	V^+	V
		Vin=Low Level		0.0	-	0.7	

■ **MODE Switch**

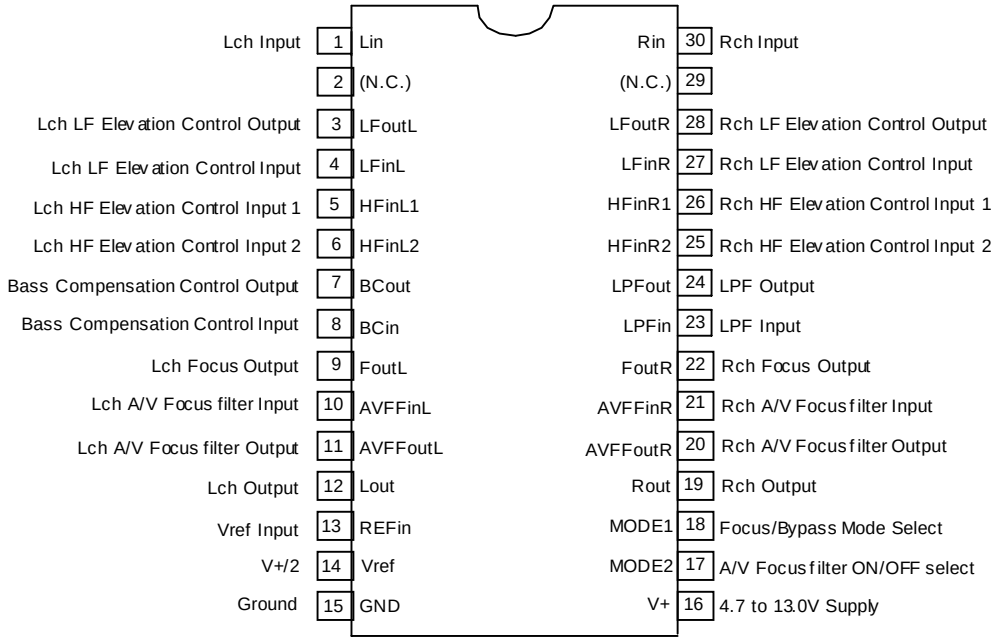
	MODE1	MODE2
Bypass Mode	L	-
Focus Mode	H	L
A/V Focus Mode	H	H

■ PIN FUNCTION

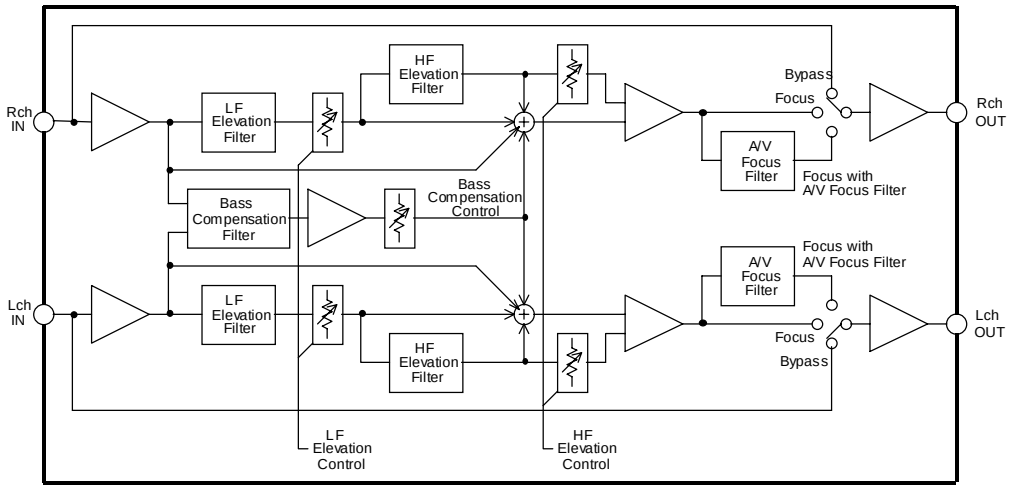
SDIP28



SDMP30

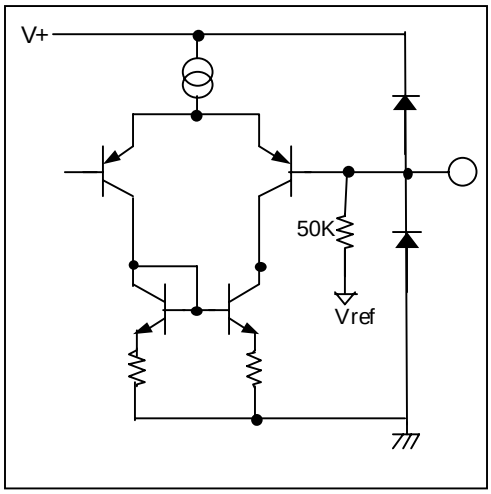


■ BLOCK DIAGRAM

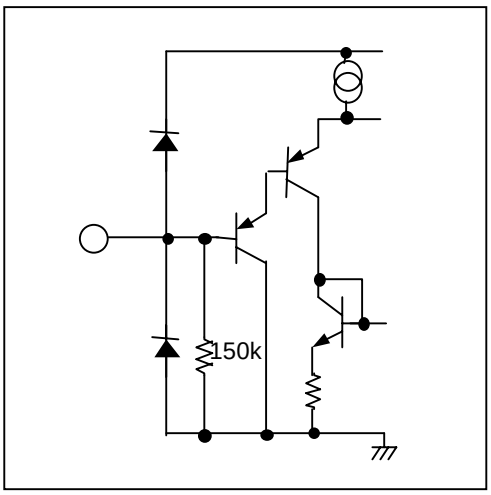


■ PIN DESCRIPTION

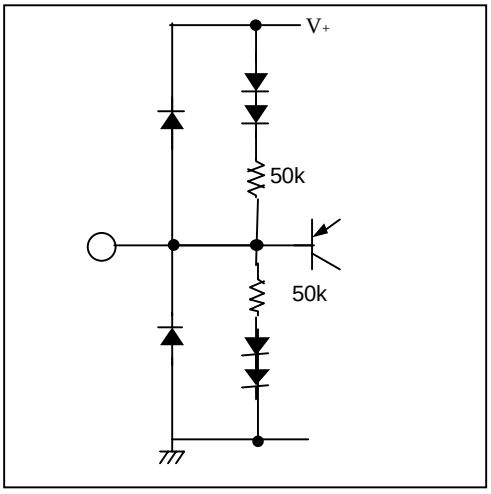
Lin,Rin



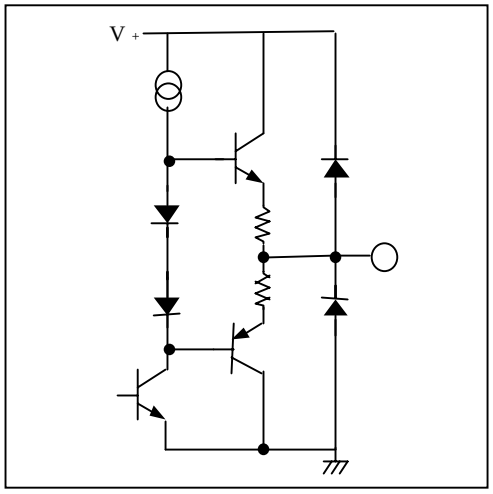
MODE1, MODE2



REFin

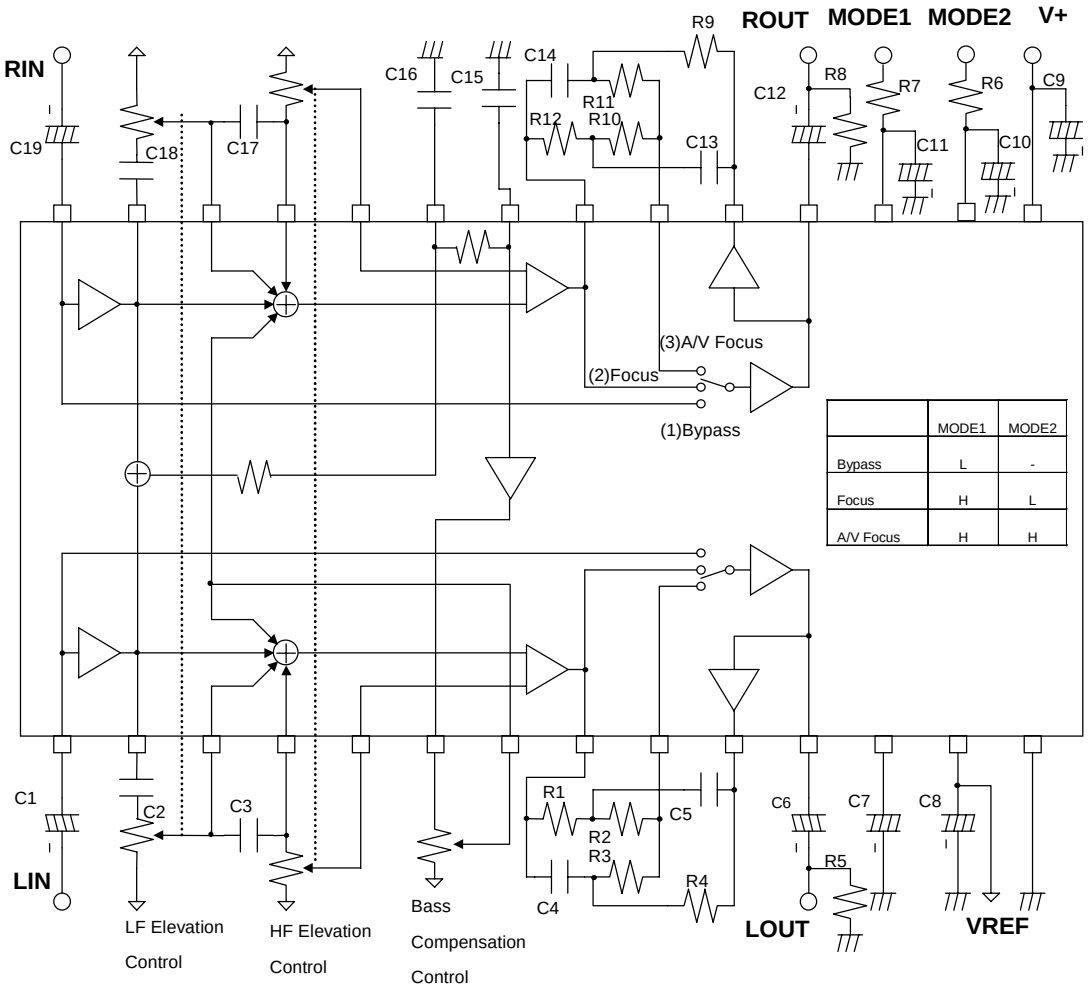


Lout,Rout,Vref



■APPLICATION CIRCUIT

SDIP28

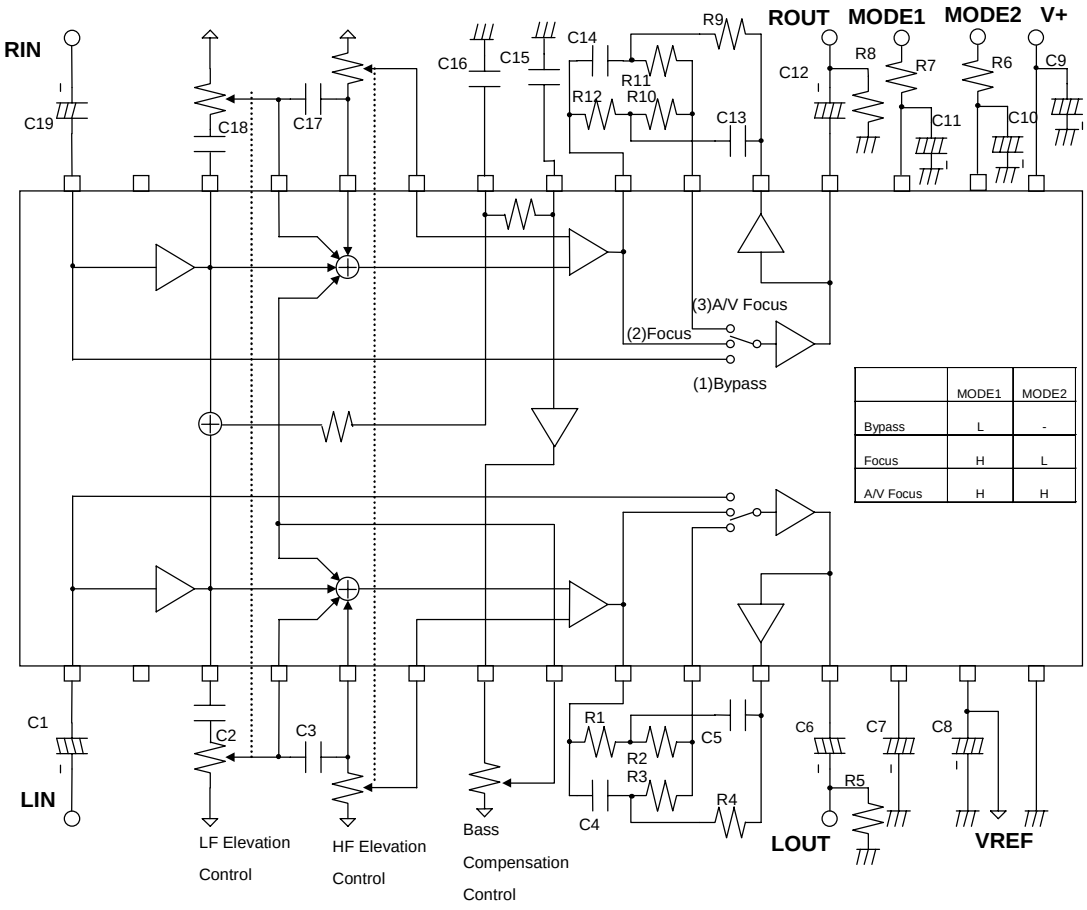


PART No.	VALUE	Tolerance	PART No.	VALUE	Tolerance
C1,C6,C7	10uF		R5,R6,R8	10kΩ	
C10,C11,C12,C19	10uF		R1,R12	1.8kΩ	±5%
C8	33uF		R2,R3,R7,R10,R11	22kΩ	±5%
C9	100uF		R4,R9	5.6kΩ	±5%
C2,C18	0.22uF	±5%			
C3,C17	3900pF	±5%			
C4,C14,C15	0.01uF	±5%			
C5,C13	0.47uF	±5%			
C16	0.1uF	±5%			

- LF Elevation Control: 1kB Single-shaft Dual-unit
- HF Elevation Control: 10kB Single-shaft Dual-unit
- Bass Compensation Control: 1kB Single-shaft Single-unit

■APPLICATION CIRCUIT

SDMP30



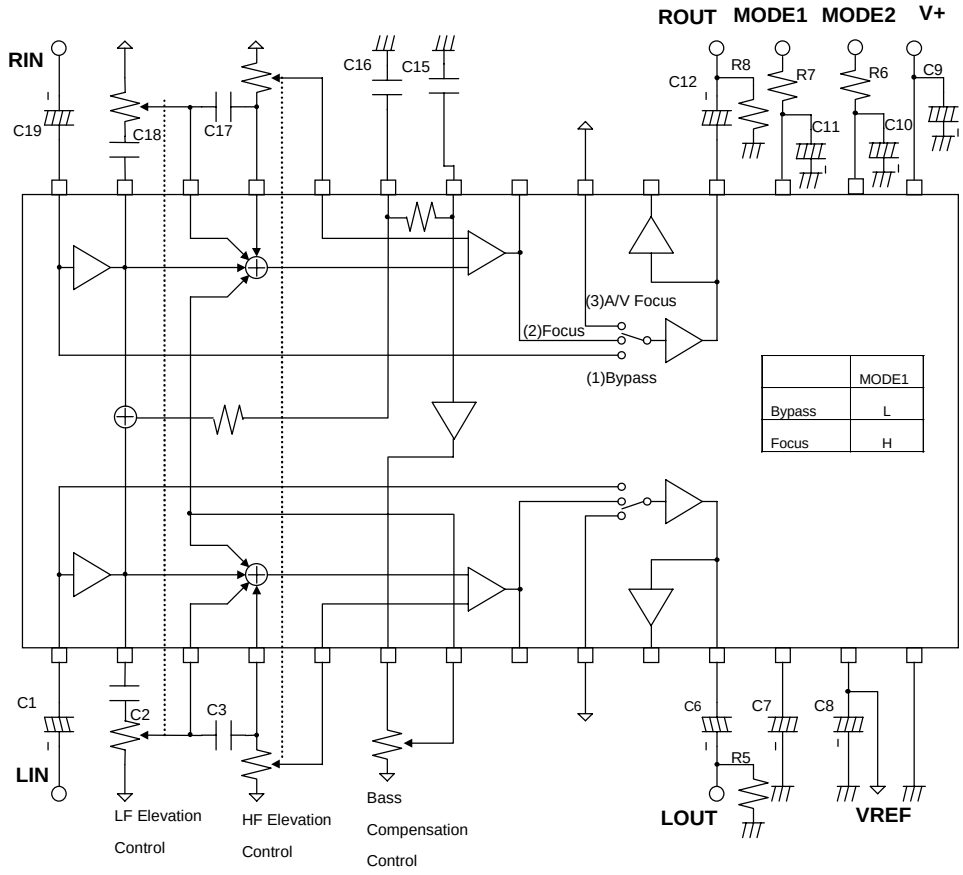
	MODE1	MODE2
Bypass	L	-
Focus	H	L
A/V Focus	H	H

PART No.	VALUE	Tolerance	PART No.	VALUE	Tolerance
C1,C6,C7	10uF		R5,R6,R8	10kΩ	
C10,C11,C12,C19	10uF		R1,R12	1.8kΩ	±5%
C8	33uF		R2,R3,R7,R10,R11	22kΩ	±5%
C9	100uF		R4,R9	5.6kΩ	±5%
C2,C18	0.22uF	±5%			
C3,C17	3900pF	±5%			
C4,C14,C15	0.01uF	±5%			
C5,C13	0.47uF	±5%			
C16	0.1uF	±5%			

- LF Elevation Control: 1kB Single-shaft Dual-unit
- HF Elevation Control: 10kB Single-shaft Dual-unit
- Bass Compensation Control: 1kB Single-shaft Single-unit

■APPLICATION CIRCUIT(Without A/V Focus Filter)

SDIP28

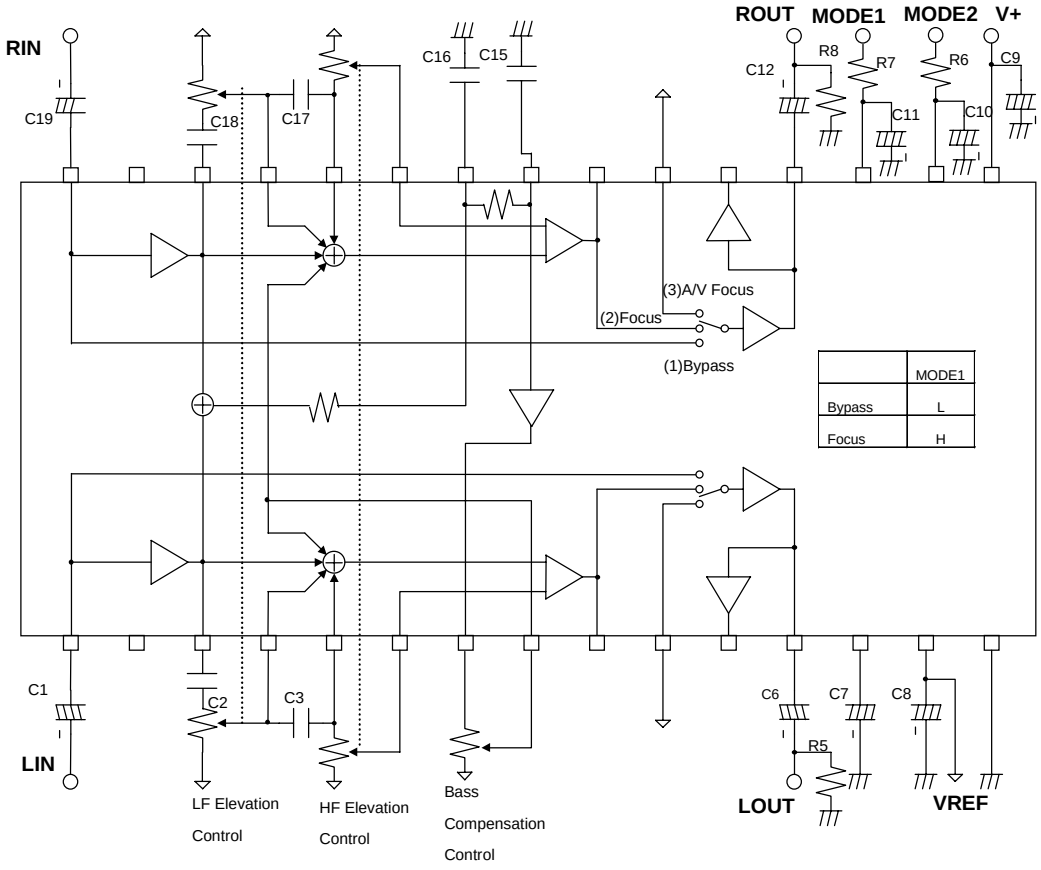


PART No.	VALUE	Tolerance	PART No.	VALUE	Tolerance
C1,C6,C7	10uF		R5,R6,R8	10kΩ	
C10,C11,C12,C19	10uF		R7	22kΩ	±5%
C8	33uF				
C9	100uF				
C2,C18	0.22uF	±5%			
C3,C17	3900pF	±5%			
C15	0.01uF	±5%			
C16	0.1uF	±5%			

- LF Elevation Control: 1kB Single-shaft Dual-unit
- HF Elevation Control: 10kB Single-shaft Dual-unit
- Bass Compensation Control: 1kB Single-shaft Single-unit

■APPLICATION CIRCUIT(Without A/V Focus Filter)

SDMP30

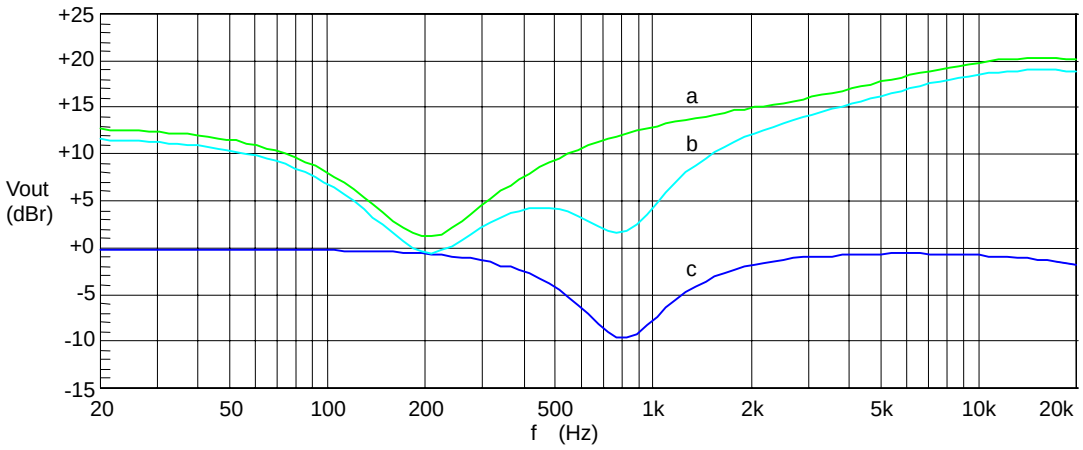


PART No.	VALUE	Tolerance	PART No.	VALUE	Tolerance
C1,C6,C7	10uF		R5,R6,R8	10kΩ	
C10,C11,C12,C19	10uF		R7	22kΩ	±5%
C8	33uF				
C9	100uF				
C2,C18	0.22uF	±5%			
C3,C17	3900pF	±5%			
C15	0.01uF	±5%			
C16	0.1uF	±5%			

- LF Elevation Control: 1kB Single-shaft Dual-unit
- HF Elevation Control: 10kB Single-shaft Dual-unit
- Bass Compensation Control: 1kB Single-shaft Single-unit

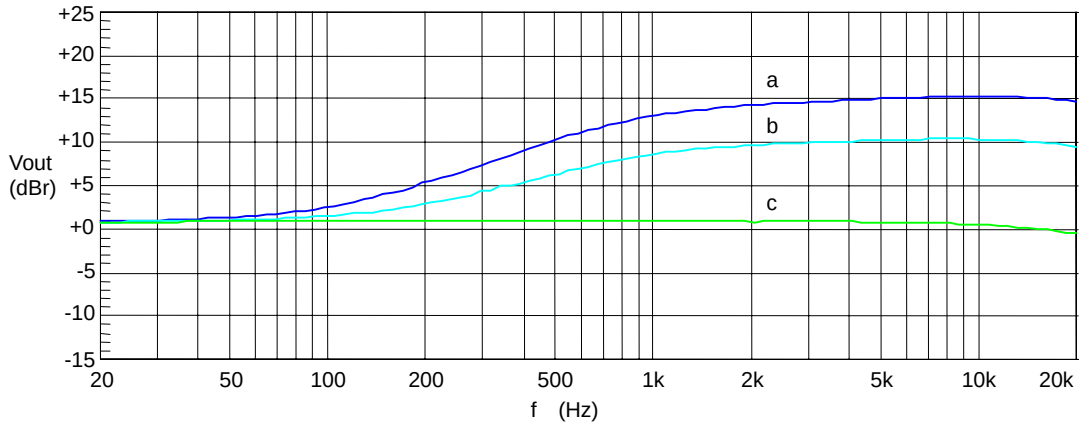
■CHARACTERISTICS

Performance Curves



V+=12V Vin=-20dBV(=0dBr) Left in Left Out
a:Focus Mode (Controls Maximum) (HF:10kΩ LF:1kΩ BC:1kΩ) *
b:A/V Focus Mode (Controls Maximum) (HF:10kΩ LF:1kΩ BC:1kΩ)
c:A/V Focus Filter Curve (A/V Focus Mode Controls 0) (HF:0Ω LF:0Ω BC:0Ω)

LF Elevation Control Performance Curves

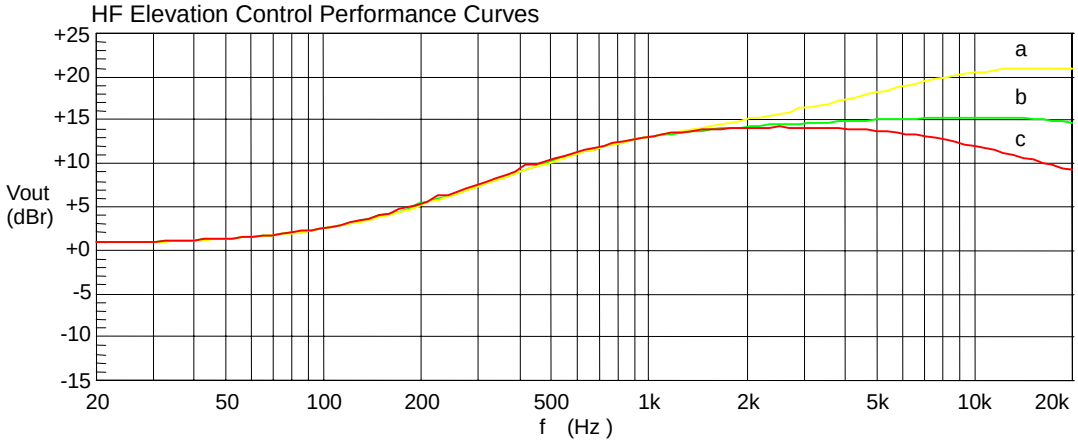


V+=12V Vin=-20dBV(=0dBr) Left in Left Out
Focus Mode Bass Compensation : Minimum (0Ω) HF Elevation : Center (5kΩ)
a:LF Elevation Control Maximum (1kΩ)
b:LF Elevation Control Center (0.5kΩ)
c:LF Elevation Control Minimum (0Ω)

*HF:HF Elevation
LF:LF Elevation
BC:Bass Compensation

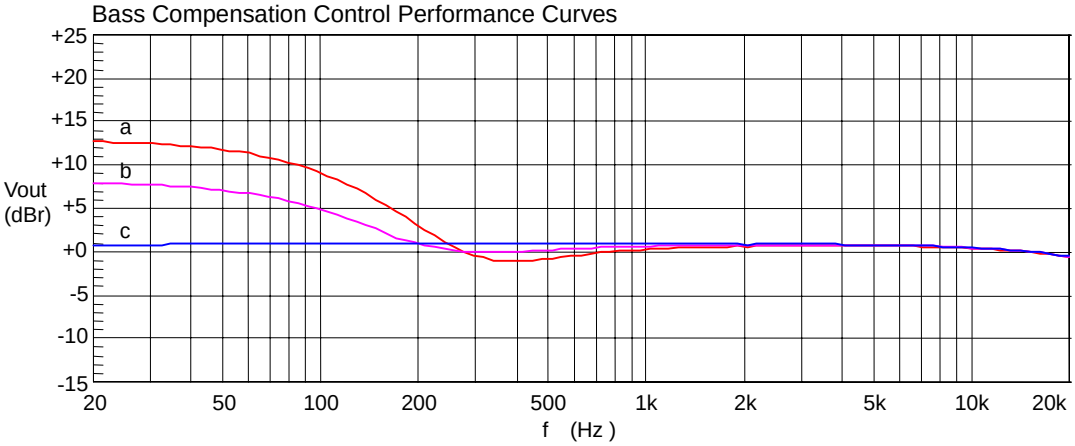
■CHARACTERISTICS

HF Elevation Control Performance Curves



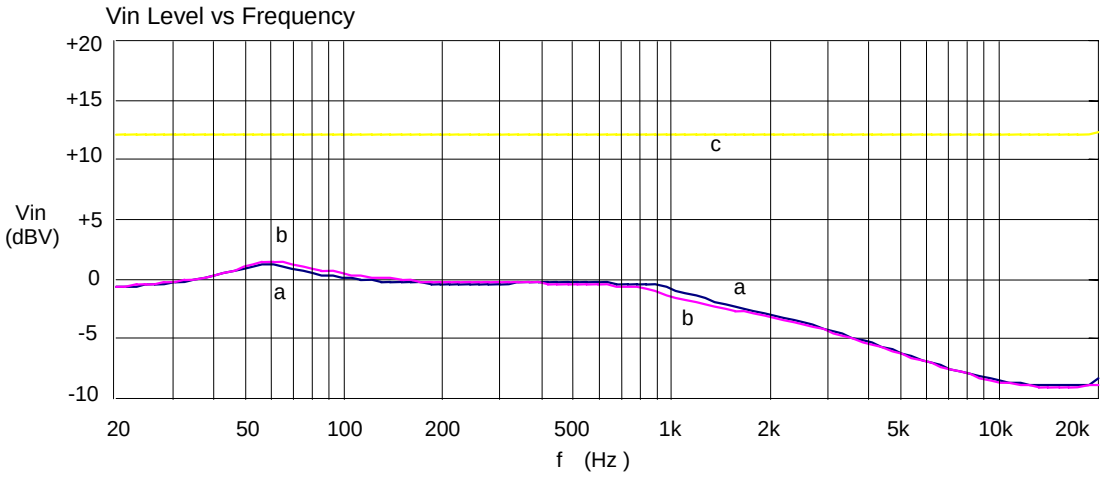
V+=12V Vin=-20dBV(=0dBr) Left in Left Out
Focus Mode bass Compensation : Minimum (0Ω) LF Elevation : Maximum (1kΩ)
a:HF Elevation Control Maximum (10kΩ)
b:HF Elevation Control Center (5kΩ)
c:HF Elevation Control Minimum (0Ω)

Bass Compensation Control Performance Curves

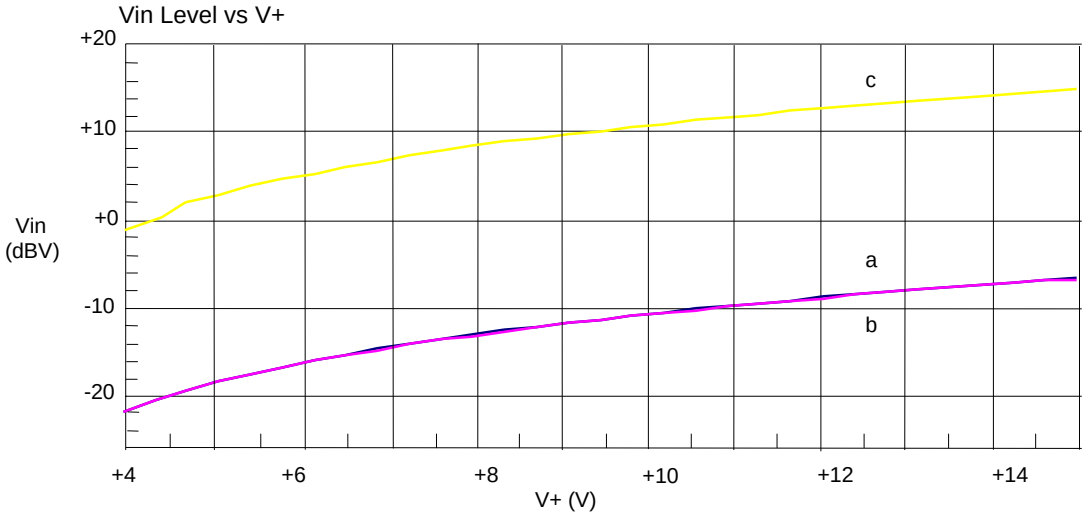


V+=12V Vin=-20dBV(=0dBr) Left in Left Out
Focus Mode LF Elevation : Minimum (0Ω)
a:Bass Compensation Control Maximum (1kΩ)
b:Bass Compensation Control Center (0.5kΩ)
c:Bass Compensation Control Minimum (0Ω)

■CHARACTERISTICS



V+=12V , THD=3%
a:Focus Mode (Controls Maximum) (HF:10kΩ LF:1kΩ BC:1kΩ)
b:A/V Focus Mode (Controls Maximum) (HF:10kΩ LF:1kΩ BC:1kΩ)
c:Bypass Mode



f=20kHz , fin=20kHz , THD=3%
a:Focus Mode (Controls Maximum) (HF:10kΩ LF:1kΩ BC:1kΩ)
b:A/V Focus Mode (Controls Maximum) (HF:10kΩ LF:1kΩ BC:1kΩ)
c:Bypass Mode

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微波光电部专业代理经销高频、微波、光纤、光电元器件、组件、部件、模块、整机；电磁兼容元器件、材料、设备；微波 CAD、EDA 软件、开发测试仿真工具；微波、光纤仪器仪表。欢迎国外高科技微波、光纤厂商将优秀产品介绍到中国、共同开拓市场。长期大量现货专业批发高频、微波、卫星、光纤、电视、CATV 器件： 晶振、VCO、连接器、PIN 开关、变容二极管、开关二极管、低噪晶体管、功率电阻及电容、放大器、功率管、MMIC、混频器、耦合器、功分器、振荡器、合成器、衰减器、滤波器、隔离器、环行器、移相器、调制解调器；光电子元器件和组件：红外发射管、红外接收管、光电开关、光敏管、发光二极管和发光二极管组件、半导体激光二极管和激光器组件、光电探测器和光接收组件、光发射接收模块、光纤激光器和光放大器、光调制器、光开关、DWDM 用光发射和接收器件、用户接入系统光光收发器件与模块、光纤连接器、光纤跳线/尾纤、光衰减器、光纤适 配器、光隔离器、光耦合器、光环行器、光复用器/转换器；无线收发芯片和模组、蓝牙芯片和模组。

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