

# eala

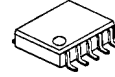
## Sound Enhancement Audio Processor for Compression Audio

### ■ GENERAL DESCRIPTION

The NJM2707 is a sound enhancement audio processor designed for compression audio. It includes mode control switch (Sound enhancement mode / Bypass mode).

The NJM2707 performs low noise and low distortion characteristics, and is suitable for car audio & home audio applications.

### ■ PACKAGE OUTLINE

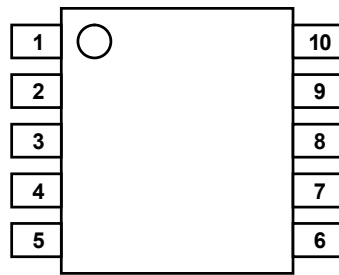


NJM2707RB2

### ■ FEATURES

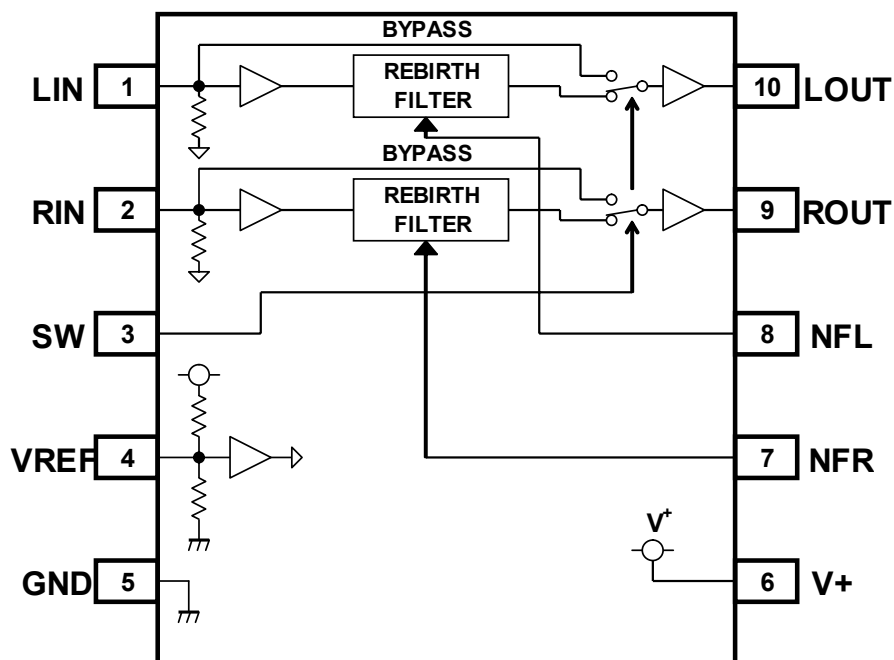
- Operating Voltage +1.8 to +13 V
- Low Operating Circuit 0.75 mA typ. (at Sound enhancement mode VR: Max.)
- Low output noise -100dBV typ. (at Sound enhancement mode VR: Max.)
- Low THD 0.01% typ.
- Variable Surround Effect by external resistor
- Internal Mode Control Switch
- Bipolar Technology
- Package Outline TVSP10

### ■ PIN CONFIGURATION



1. LIN
2. RIN
3. SW
4. VREF
5. GND
6. V+
7. NFR
8. NFL
9. ROUT
10. LOUT

### ■ BLOCK DIAGRAM (TVSP10)



# NJM2707

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

PARAMETER	SYMBOL	RATING	UNIT
Power Supply Voltage	V+	14	V
Power Dissipation	P <sub>D</sub>	410 NOTE: EIA/JEDEC STANDARD Test board (76.2x114.3x1.6mm, 2layer, FR-4) mounting	mW
Operating Temperature Range	Topr	-40 ~ +85	°C
Storage Temperature Range	Tstg	-40 ~ +125	°C

## ■ OPERATING VOLTAGE

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V+		1.8	9.0	13	V

## ■ ELECTRICAL CHARACTERISTICS (Ta=25°C, V<sup>+</sup>=9V, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	TEST CONDITION				MIN	TYP	MAX	UNIT	
			INPUT		OUTPUT	Mode					VR
			L	R							
Supply Current	I <sub>CC</sub>	No Signal	0	0	-	Bypass	-	0.75	1.3	mA	
			0	0	-	eala Rebirth	MAX	0.75	1.3		
Reference Voltage	V <sub>REF</sub>	No Signal	0	0	-	-	-	3.65	4.15	4.65	V

## ■ AC CHARACTERISTICS (Ta=25°C, V<sup>+</sup>=9V, V<sub>in</sub>= 1.5Vrms, f=1kHz, R<sub>L</sub>=10kΩ, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	TEST CONDITION				MIN	TYP	MAX	UNIT		
			INPUT		OUTPUT	Mode					VR	
			L	R								
Maximum Input Voltage	V <sub>IM</sub>	f=1kHz THD=1%	V <sub>IN</sub>	-	L	Bypass	-	2.2	3.0	-	Vrms	
			-	V <sub>IN</sub>	R							
		f=1kHz THD=1%	V <sub>IN</sub>	-	L	eala Rebirth	MAX	1.5	2.7	-		
			-	V <sub>IN</sub>	R							
		f=10kHz THD=1%	V <sub>IN</sub>	-	L	Bypass	-	2.2	3.0	-		
				V <sub>IN</sub>	-							R
		f=10kHz THD=1%	V <sub>IN</sub>	V <sub>IN</sub>	-	L	eala Rebirth	MAX	1.0	1.6		-
				-	V <sub>IN</sub>	R						
Output Noise	V <sub>NO</sub>	Rg=0Ω A-Weighted	0	0	L	Bypass	-	-	-112 (2.5)	-106 (5.0)	dBV (μVrms)	
			0	0	R							
		Rg=0Ω A-Weighted	0	0	L	eala Rebirth	MAX	-	-100 (10)	-94 (20)		
			0	0	R							
Total Harmonic Distortion	THD+N	V <sub>IN</sub> =1.5Vrms f=1kHz	V <sub>IN</sub>	-	L	Bypass	-	0.002	0.01	%		
			-	V <sub>IN</sub>	R							
		V <sub>IN</sub> =0.75Vrms f=10kHz	V <sub>IN</sub>	-	L	eala Rebirth	MAX	-	0.1		-	
			-	V <sub>IN</sub>	R							
Bypass Gain	G <sub>VBYP</sub>	V <sub>IN</sub> =1.5Vrms f=1kHz	V <sub>IN</sub>	-	L	Bypass	-	-1.0	0.0	1.0	dB	
			-	V <sub>IN</sub>	R							

PARAMETER	SYMBOL		TEST CONDITION				MIN	TYP	MAX	UNIT	
			INPUT		OUTPUT	Mode					VR
			L	R							
eala Rebirth Gain	$G_{eala}$	$V_{IN}=0.75V_{rms}$ $f=10kHz$	$V_{IN}$	-	L	eala Rebirth	MAX	3.0	5.0	7.0	dB
			-	$V_{IN}$	R						

■ **CONTROL CHARACTERISTICS** ( $T_a=25^\circ C$ ,  $V^+=9V$ , unless otherwise specified)

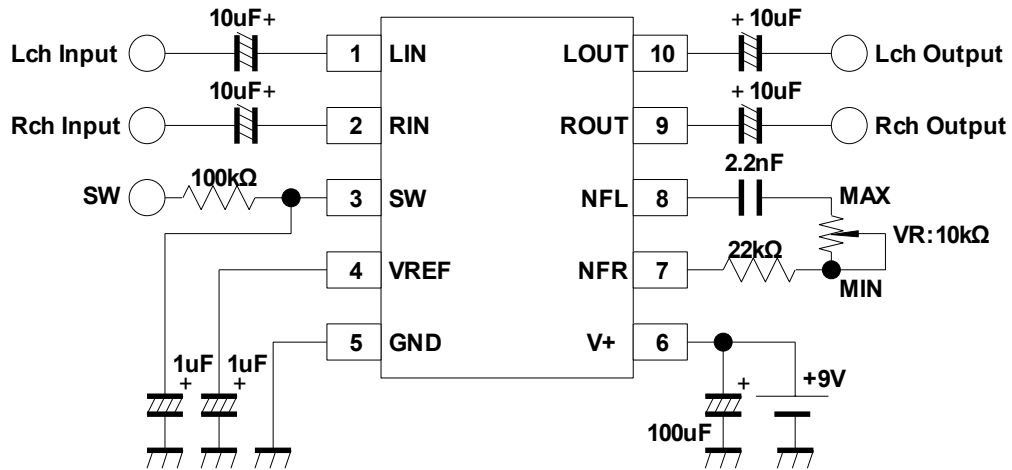
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Mode Select Control Voltage	$V_{MODE}$	$V_{IN}=\text{High Level}$	1.2	-	$V^+$	V
		$V_{IN}=\text{Low Level}$	0.0	-	0.3	V

■ **SWITCH FUNCTION**

MODE	SW	NOTES
Bypass	L, Open	Input Through
eala Rebirth	H	eala Rebirth (Stereo Input)

# NJM2707

## ■ APPLICATION CIRCUIT



## ■ TERMINAL DESCRIPTION

(Ta=25°C, V<sup>+</sup>=9V)

PIN No.	SYMBOL	FUNCTION	EQUIVALENT CIRCUIT	Voltage
1 2	LIN RIN	Lch Input Rch Input		4.15V
3	MODE SW	Mode Control Switch		0V
4	VREF	Reference Voltage		4.15V

# NJM2707

## ■ TERMINAL DESCRIPTION

(Ta=25°C, V<sup>+</sup>=9V)

PIN No.	SYMBOL	FUNCTION	EQUIVALENT CIRCUIT	Voltage
6	V+	Power Supply		V+
7 8	NFR NFL	Rch Filter Terminal Lch Filter Terminal		4.15V
9 10	ROUT LOUT	Rch Output Lch Output		4.15V

**[CAUTION]**

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