



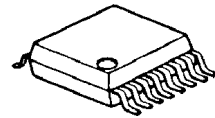
Sound Enhancement Processor For Telephone

GENERAL DESCRIPTION

The **NJU7087** is a Sound Enhancement Processor for telephone, using a low power C-MOS technology. Sound enhancement and LPF circuit improve quality of conversation without increasing noise.

The **NJU7087** is suitable for limited band-width application, such as telephone, and answer phone.

PACKAGE OUTLINE

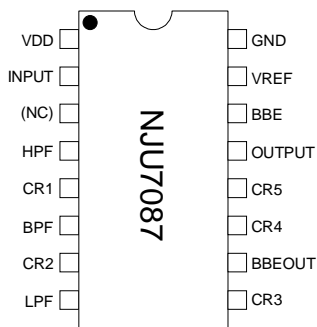


NJU7087

FEATURES

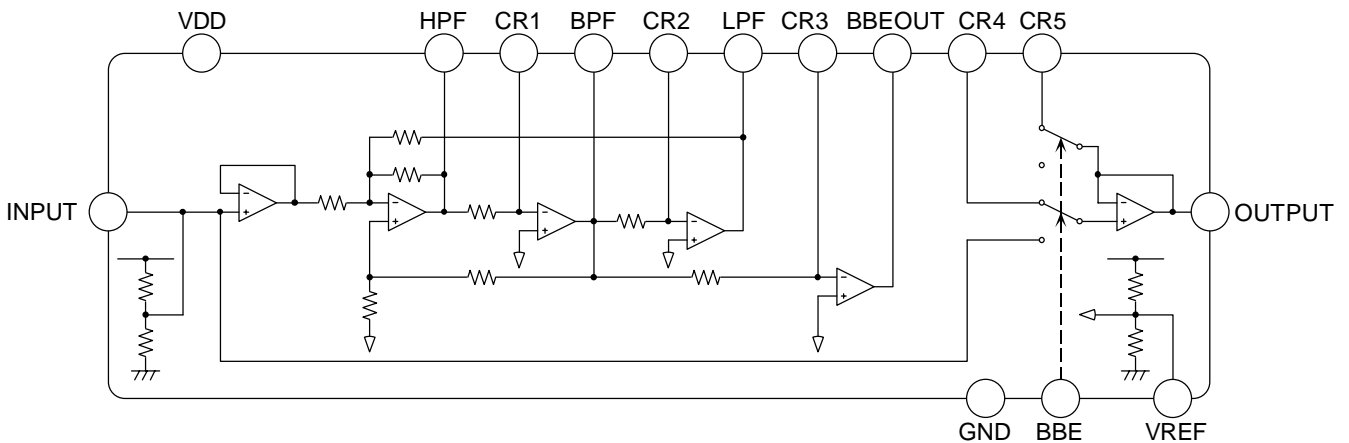
- Operating Voltage $(V_{DD}=2.4 \text{ to } 5.5\text{V})$
- Low Operating Current $(2\text{mA typ. at } V_{DD}=3\text{V})$
- Low Output Noise $(31.6\mu\text{Vrms typ. at BBE ON})$
- Bypass Gain (0dB typ.)
- Adjustable Boost Level(High)
- Package Outline (SSOP16)

PIN CONFIGURATION



No.	SYMBOL	FUNCTION	No.	SYMBOL	FUNCTION
1	VDD	Power Supply	9	CR3	Filter
2	INPUT	Signal Input	10	BBEOUT	BBE Output
3	(NC)	(No Connected)	11	CR4	Filter
4	HPF	HPF Output	12	CR5	Filter
5	CR1	Filter	13	OUTPUT	Signal Output
6	BPF	BPF Output	14	BBE	BBE ON/OFF
7	CR2	Filter	15	VREF	Reference Voltage
8	LPF	LPF Output	16	GND	GND

BLOCK DIAGRAM



■ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V _{DD}	7.0	V
Input Voltage	V _I	GND-0.5 to VDD+0.5	V
Power Dissipation	PD	300	mW
Operating Temperature Range	T _{opr}	-40 to +85	°C
Storage Temperature Range	T _{stg}	-55 to +125	°C

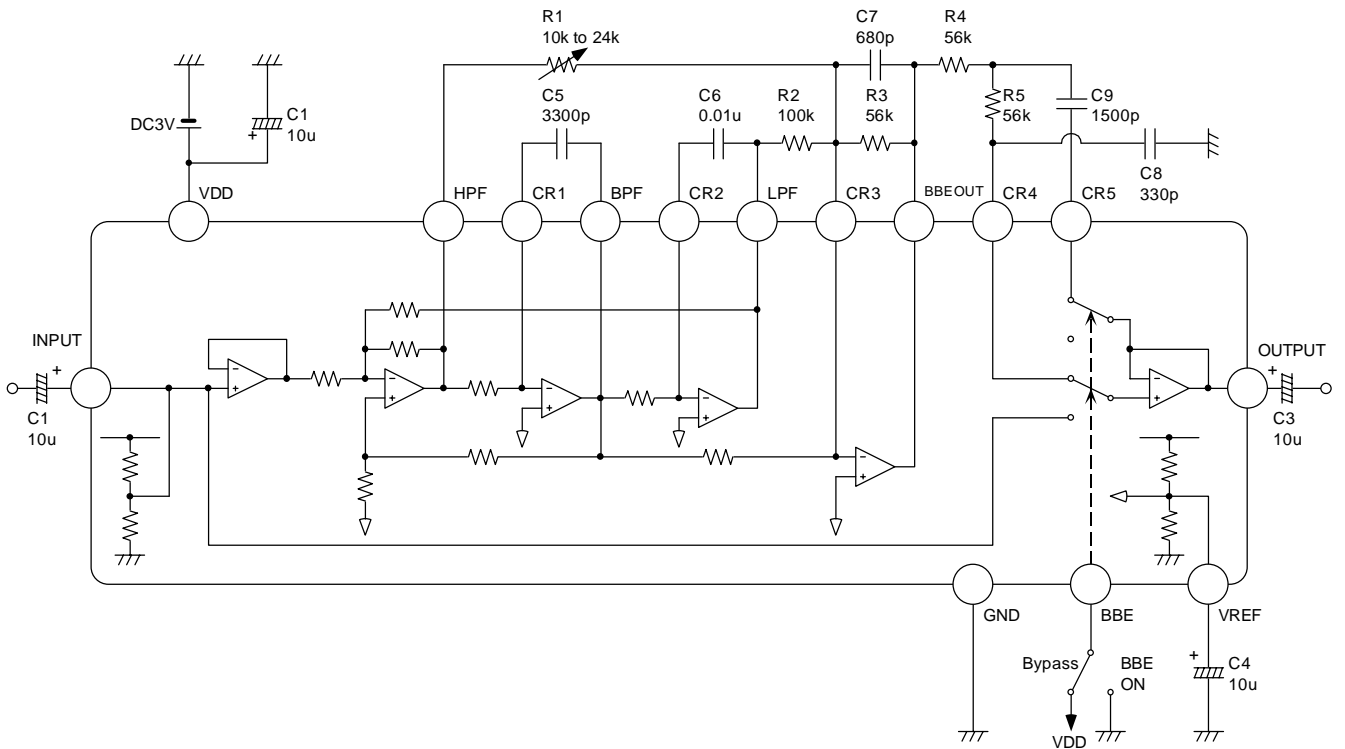
■ELECTRICAL CHARACTERISTICS(VDD=3V,Vss=0V,Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	BBE	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V _{DD}		-	2.4	-	5.5	V
Supply Current	I _{DD}	No Signal	-	-	2.0	4.0	mA
Reference Voltage	VREF		-	-	1.5	-	V
BBE Terminal Input Current	IBBE	BBE Terminal=3V	-	-	-1.0	-	μA
BBE Terminal Input Voltage	VBBEH		-	0.8V _{DD}	-	V _{DD}	V
	VBBEL		-	GND	-	0.2V _{DD}	V
Boost Level	Boost	R1=24kΩ,R3=56kΩ,f=3kHz	ON		4.0		dB
Maximum Input Voltage	VOMH	RL=50kΩ	Bypass	V _{DD} -0.1	-	-	V
	VOML	RL=50kΩ	Bypass	-	-	V _{ss} +0.1	V
Bypass Gain	G _{BYP}	f=1kHz	Bypass	-1	0	1	dB
Total Harmonic Distortion	THD	f=1kHz,Vin=0.1Vrms, Boost=4.0dB	ON	-	0.1	-	%
Output Noise	Vno	Input=GND,Boost=4.0dB, A-Weighting	ON	-	-90 (31.6)	-60 (100)	dBV (μVrms)

■SWITCH FUNCTION

Switch Terminal	Control Voltage Level	FUNCTION
BBE	High	BYPASS
	Low	BBE ON

APPLICATION CIRCUIT



R1	Boost Level
10kΩ	12dB
15kΩ	8dB
24kΩ	4dB

High Boost Level is adjusted by value of R1.
 Recommended High Boost Level : 4 to 12dB (R1 : 24k to 10kΩ)

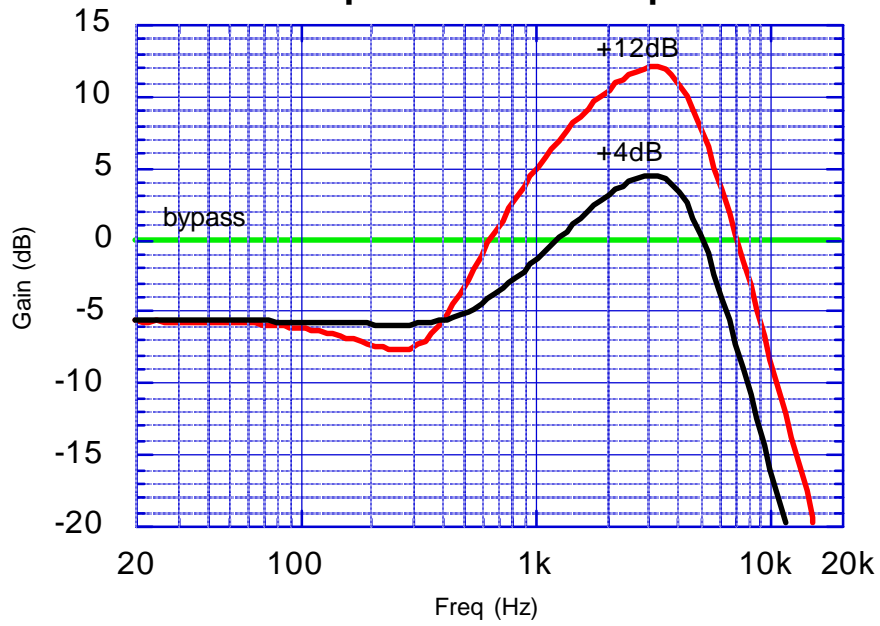
NOTE

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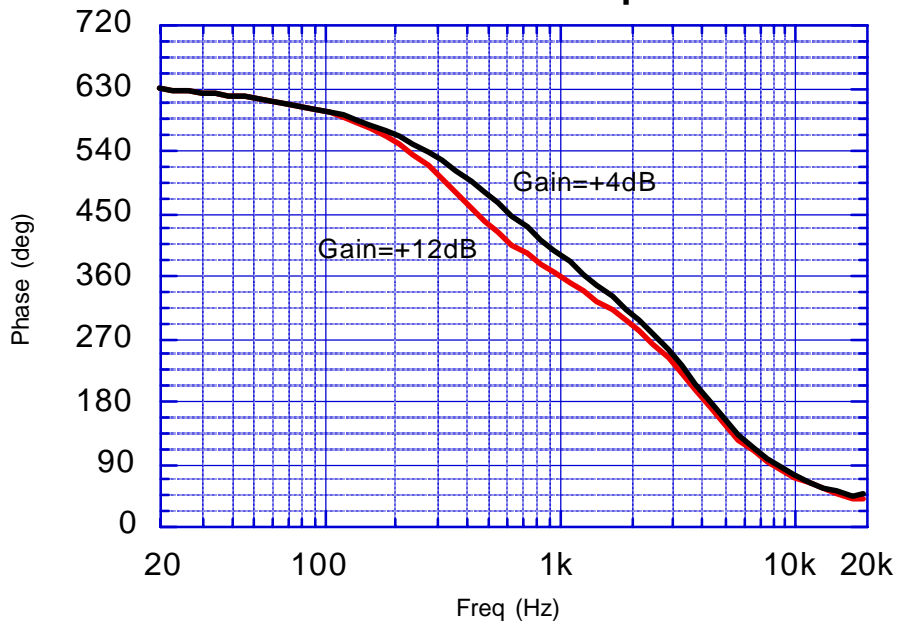
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■ TYPICAL CHARACTERISTICS

Output Gain vs Freq.



Phase vs Freq.



[CAUTION]
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