

- ◇Structure : Silicon Monolithic Integrated Circuit
- ◇Product : Audio Driver (Speaker AMP) for Mobile telephone
- ◇Type : BH7826FVM
- ◇Outside Dimension : Fig.-1 MSOP—8 (Plastic Mold)
- ◇Block Diagram : Fig.-2
- ◇Measurement Circuit Diagram : Fig.-3
- ◇Application Circuit Diagram : Fig.-4
- ◇機能 (Function) :
- BTL mono audio power amp.
 - High power 500mW/8Ω/BTL
 - ※Correspond to Dynamic Speaker(8/12Ω) load .
 - Wide operating voltage range.
 - Correspond to active/shutdown mode.
 - Built in softmute circuit.
 - Built in antipop/thermal shutdown circuit.
 - Most suitable for mobile telephone, palm PC, handheld games.

Application example

The application circuit is recommended for use. Make sure to confirm the adequacy of the characteristics.


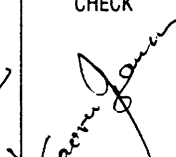
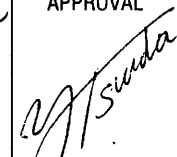
When using the circuit with changes to the external circuit constants, make sure to leave an adequate margin for external components including static and transitional characteristics as well as dispersion of the IC.

Note that ROHM cannot provide adequate confirmation of patents.

The product described in this specification is designed to be used with ordinary electronic equipment or devices (such as audio-visual equipment, office-automation equipment, communications devices, electrical appliances, and electronic toys).

Should you intend to use this product with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

ROHM assumes no responsibility for use of any circuits described herein, conveys no license under any patent or other right, and makes no representations that the circuits are free from patent infringement.

DESIGN 	CHECK 	APPROVAL 	DATE : MAR./27/2002	SPECIFICATION No. : TSZ02201-BH7826FVM-1-2
			REV. A	ROHM CO., LTD.

◇Absolute Maximum Rating

(Ta = +25°C)

Item	Symbol	Rating	Unit
Impressed Voltage	VccMAX	6.0	V
Power Dissipation	Pd	470(※1)	mW
Operating Temperature	TOPR	-30~+85(※2)	°C
Storage Temperature	TSTG	-55~+125	°C

(※1) Glass epoxy plate 70mm × 70mm × 1.6mm mounted.
Ta = 25°C or more, it is reduce at -4.7mW/°C.

(※2) The temperature range of 70 to 85 °C shall be normal operating range, not guarantee the specification. It is possible that Thermal Shutdown circuit is active if input level is bigger in this range.

◇Operating Voltage Range

(Ta = +25°C)

Item	Symbol	Rating	Unit
Operating Voltage Range	Vccs	+2.6~+5.5	V

※Radiation resistance is not included in the design.

◇ Electrical Characteristic

(Unless specified particularly, Ta= +27°C, Vcc=3.6V, f=1kHz, RL=8Ω)

Item	Symbol	Limit			Unit	monitor terminal	Condition
		Min.	Typ.	Max.			
Circuit current 1	ICC1	—	3.5	7	mA	6	No signal Active MODE
Circuit current 2	ICC2	—	0	2	uA	6	No signal Suspend MODE
Voltage gain	GV1	+9.5	+11.5	+13.5	dB	5, 8	VIN1=VIN2=-20 dBV Rf/Rs =100k/22k SE *1
Maximum output level 1	VOM1	+4.0	+6.0	—	dBV	5 & 8	DSTN=1% BTL *1
Maximum output level 2	VOM2	—	+5.1	—	dBV	5 & 8	VCC=3.4V DSTN=1% BTL *1
Distortion	DSTN	—	0.2	1.0	%	5, 8	VIN1=VIN2=-20 dBV SE *1
Output noise level	VNO	—	-94	-80	dBV	5, 8	No signal, SE Active MODE *2
Suspend attenuation	GS	—	-107	-80	dBV	5 & 8	VIN1=VIN2=-20 dBV BTL *2
Bias voltage	VBIAS	1.6	1.8	2.0	V	3	3PIN DC voltage
Suspend hold voltage/H	VSH	2.0	—	VCC	V	2	Active MODE Hold voltage
Suspend hold voltage/L	VSL	0	—	0.5	V	2	Suspend MODE Hold voltage

* 1: B.W.=0.4~30kHz, * 2: DIN AUDIO

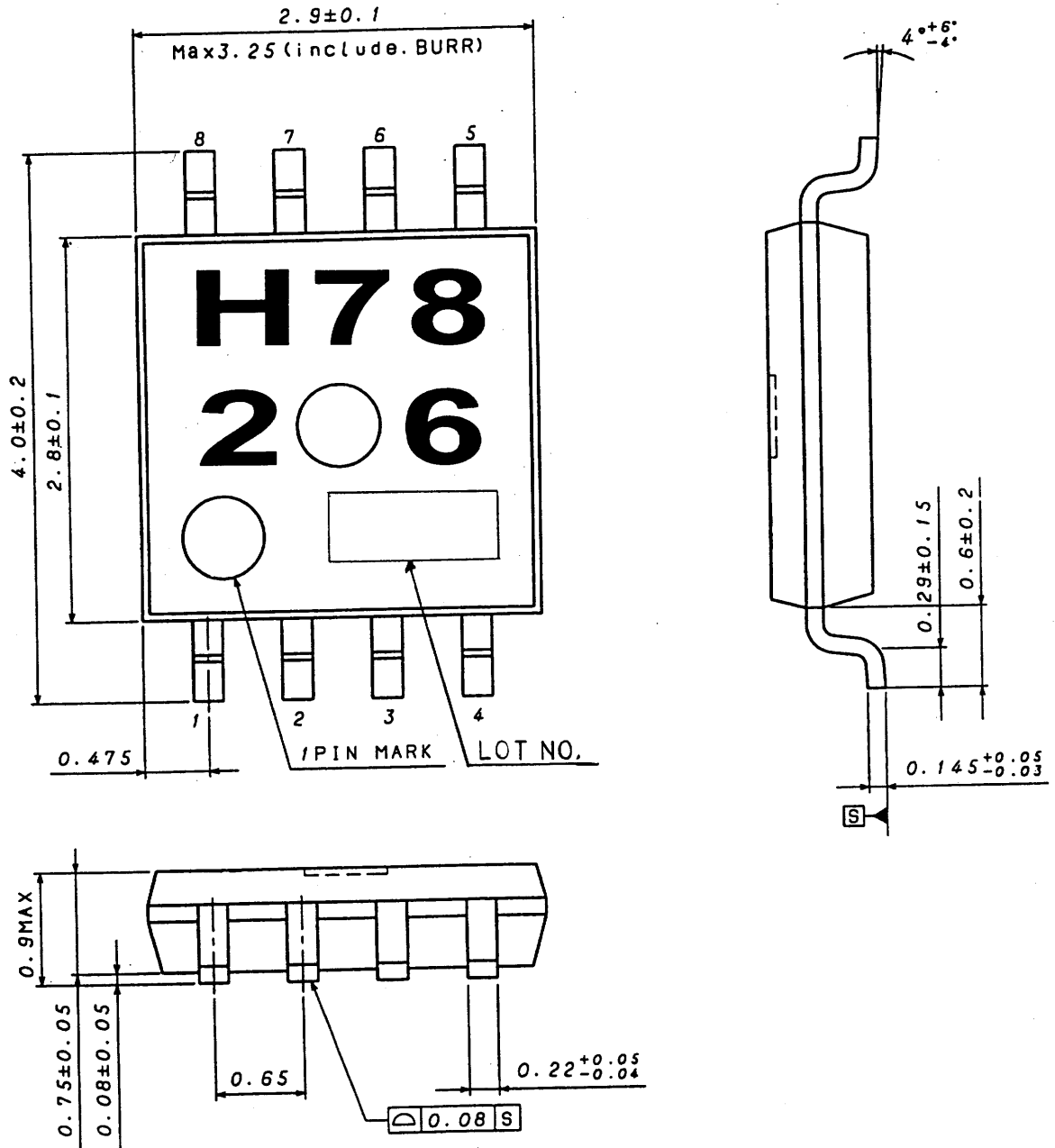


Fig-1 Outside Dimension

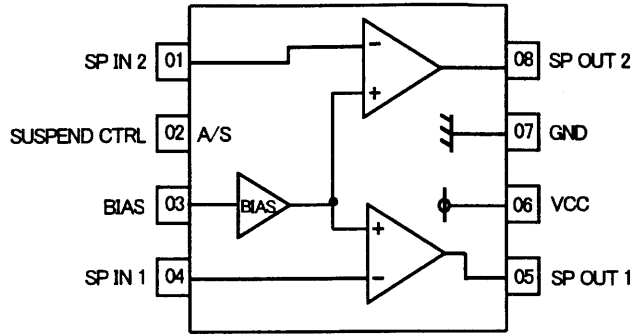


Fig-2 Block Diagram

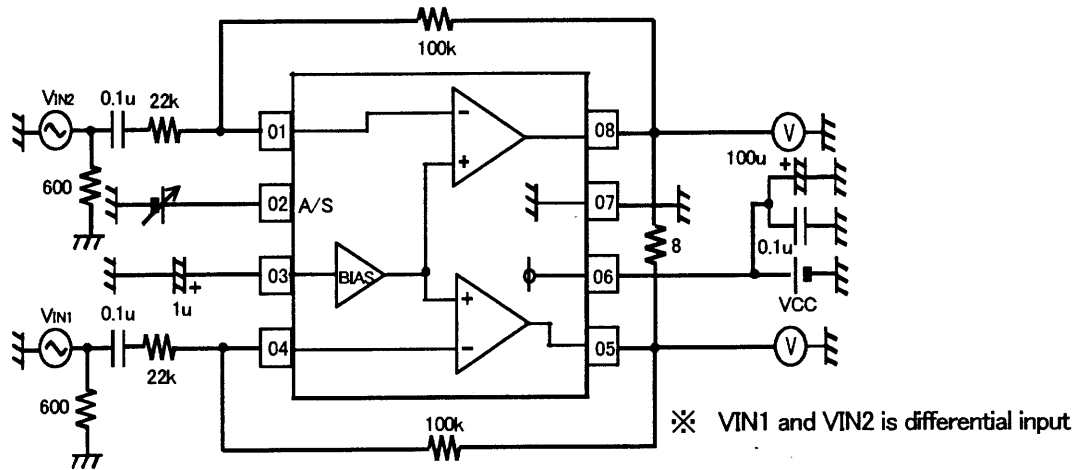


Fig-3 Measurement Circuit Diagram

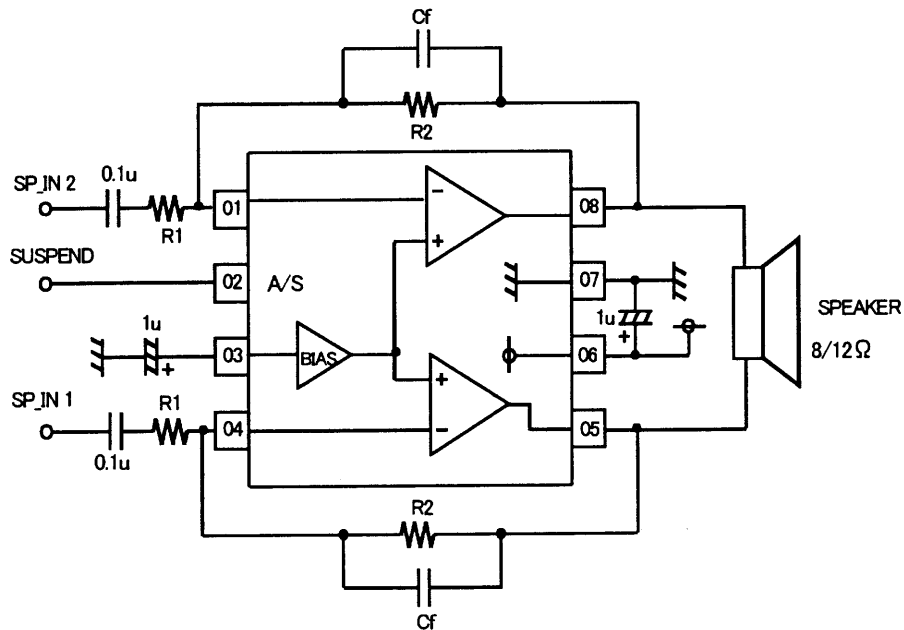


Fig-4 Application Circuit Diagram

◇NOTIFICATION ON USE

1. Please set within the following range.

$$10\text{k}\Omega \leq R_1 \leq 120\text{k}\Omega$$

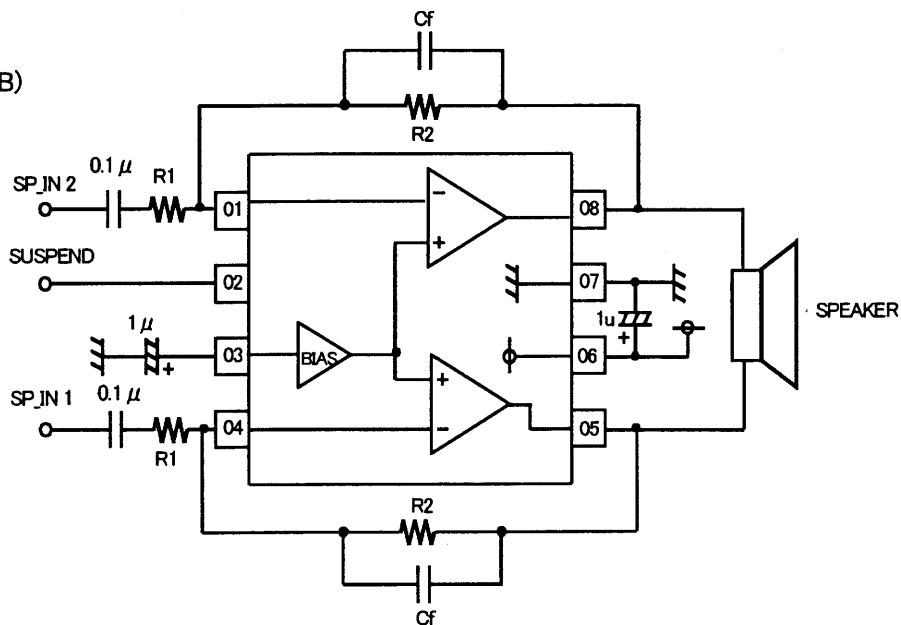
$$47\text{k}\Omega \leq R_2 \leq 120\text{k}\Omega$$

$$C_f \leq 560\text{pF} \quad (G > +6\text{dB})$$

$$C_f \leq 270\text{pF} \quad (0\text{dB} \leq G \leq +6\text{dB})$$

$$f_{\text{cutoff}} \geq 4\text{kHz}$$

$$f_{\text{cutoff}} = \frac{1}{2\pi R_2 C_f} [\text{Hz}]$$



2. Please do not connect more 100pF capacitive load to between an output terminal (5PIN or 8 PIN) and GND.
If you connect large capacitive load, it is possible that an amp oscillate, because of the multi-feedback structure.

3. Please do not use this IC on condition that there is no-load.

4. At less than $V_{CC}=2.6\text{V}$ and $T_a=-20^\circ\text{C}$, there is delay time when SUSPEND CTRL L→H
(SUSPEND mode → ACTIVE mode) switching mode.

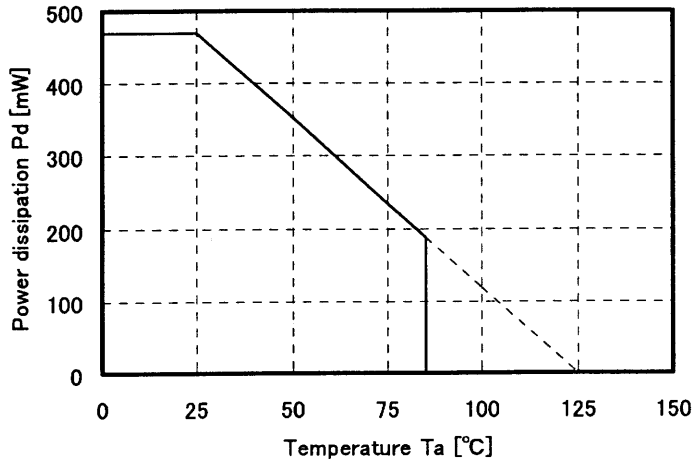
In the case of low voltage and low temperature, please make sure to confirm the adequacy of the characteristics.

5. This IC is suitable to Dynamic Speaker (8/12Ω) load , not suitable to the load except for Dynamic Speaker.

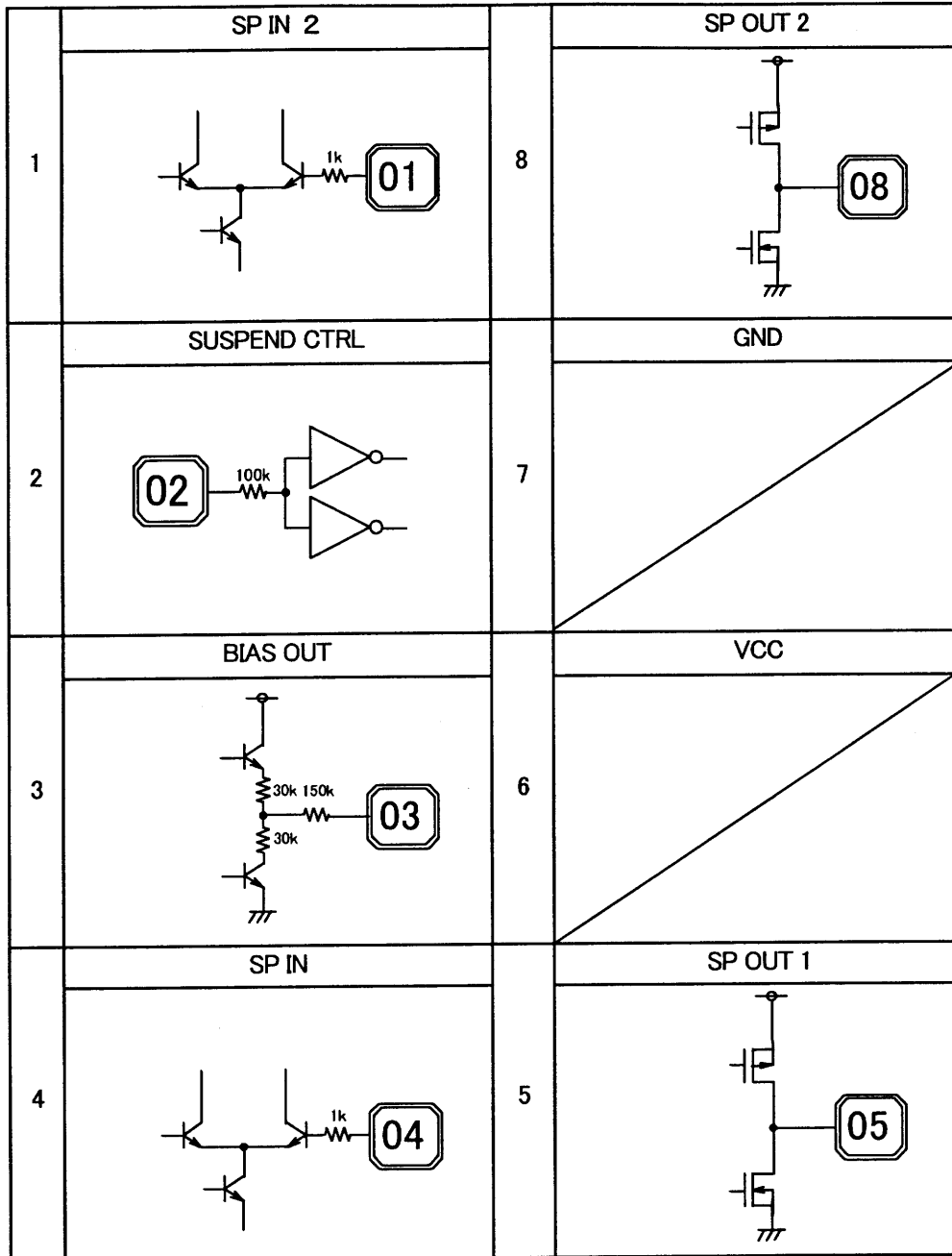
6. Please take enough measures against a radiation of heat because this IC is power amp.

Power dissipation of the package is reduced by $-4.7\text{mW}/^\circ\text{C}$ at $T_a = 25^\circ\text{C}$ or more, when mounted on glass epoxy plate $70\text{mm} \times 70\text{mm} \times 1.6\text{mm}$. See Graph 1.

Power dissipation is changed by plate mounted. This value become larger when the IC mounted on heat release designed plate.



Graph 1 $T_a - P_d$ at plate mounted



Note.) Any numeric in a drawing shall be design value and it shall not guarantee the specification.

Fig.-5 Circuit Diagram of around Terminal