FUJITSU

5.8 W DUAL AUDIO POWER AMPLIFIER

MB3722

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Edition 1.0

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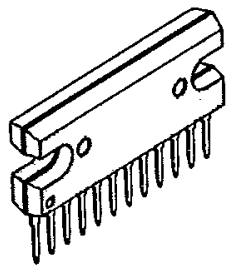
The Fujitsu MB3722 is designed for a dual low-frequency high-power amplifier which is packed in 12 pin single in line plastic package. The MB3722 requires a few external components, this enables high density mounting. Design for heat radiation is easy because thermal resistance is low.

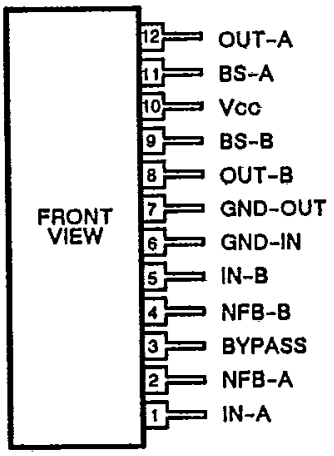
The MB3722 contains internal power-on pop noise protection circuitry and various protection circuitry. The device is suitable best for car-stereo.

- High power output: 5.8 W typ.
- Low Noise Output Voltage: 0.8 mV typ.
- Low Total Harmonic Distortion: 0.2 % typ.
- Minimum external components
- On chip power on pop noise protection circuit
- Audio mute function is provided
- Separated GND pins for Input/Output circuit
- Various protection circuits
  - — Over voltage protection
  - — Thermal protection
  - — Load short protection
  - — Output pin-to-DC short protection



PLASTIC PACKAGE
SIP-12P-M01

PIN ASSIGNMENT



ABSOLUTE MAXIMUM RATINGS (see NOTE) (Tc = 25°C)

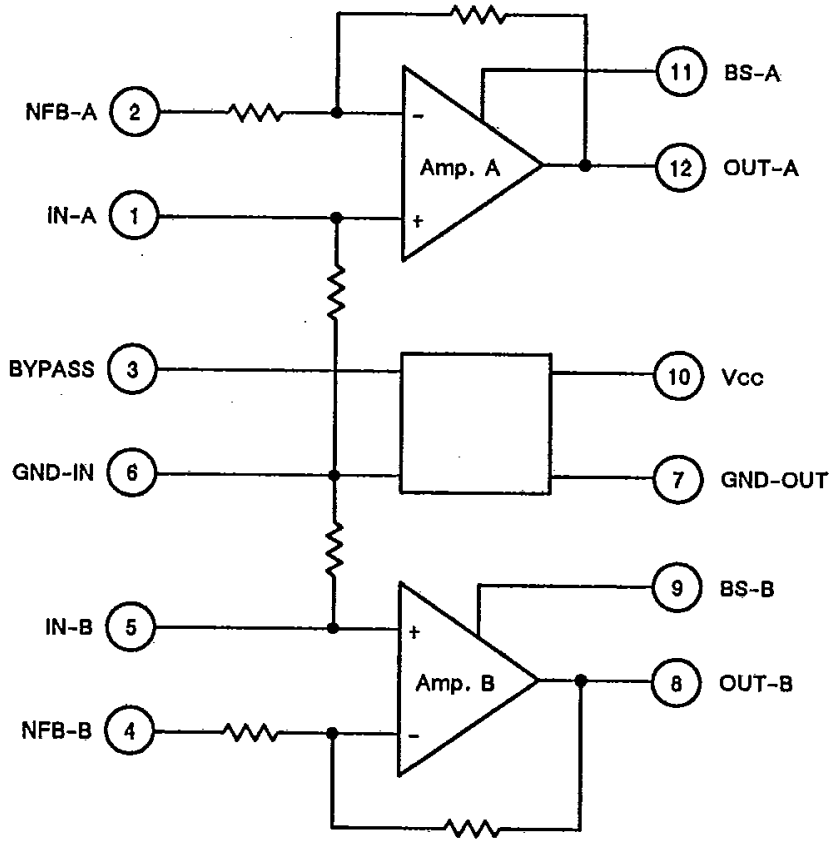
Rating	Symbol	Value	Unit
Power Supply Voltage (No signal)	V_{CCDC}	24	V
Power Supply Voltage (Operation)	V_{CC}	18	V
Power Supply Voltage (Surge)	V_{CCS}	40 *	V
Output Current (Peak)	I_{OPEAK}	4.5	A
Power Dissipation	P_D	18	W
Operating Temperature(Case)	T_c	-20 to +75	°C
Storage Temperature	T_{STG}	-55 to +150	°C

NOTE: * $t_s \leq 0.2$ sec, $t_r \geq 1$ msec

Permanent device damage may occur if the above Absolute Maximum Ratings are exceeded. Functional operation should be restricted to the conditions as detailed in the operational sections of this data sheet. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

This device contains circuitry to protect the inputs against damage due to high static voltages or electric fields. However, it is advised that normal precautions be taken to avoid application of any voltage higher than maximum rated voltages to this high impedance circuit.

Fig. 1 — MB3722 BLOCK DIAGRAM



RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Value	Unit
Power Supply Voltage	Vcc	8 to 16	V
Operating Temperature	Tc	-20 to +75	°C
Output Load	RL	2 to 8 *	Ω

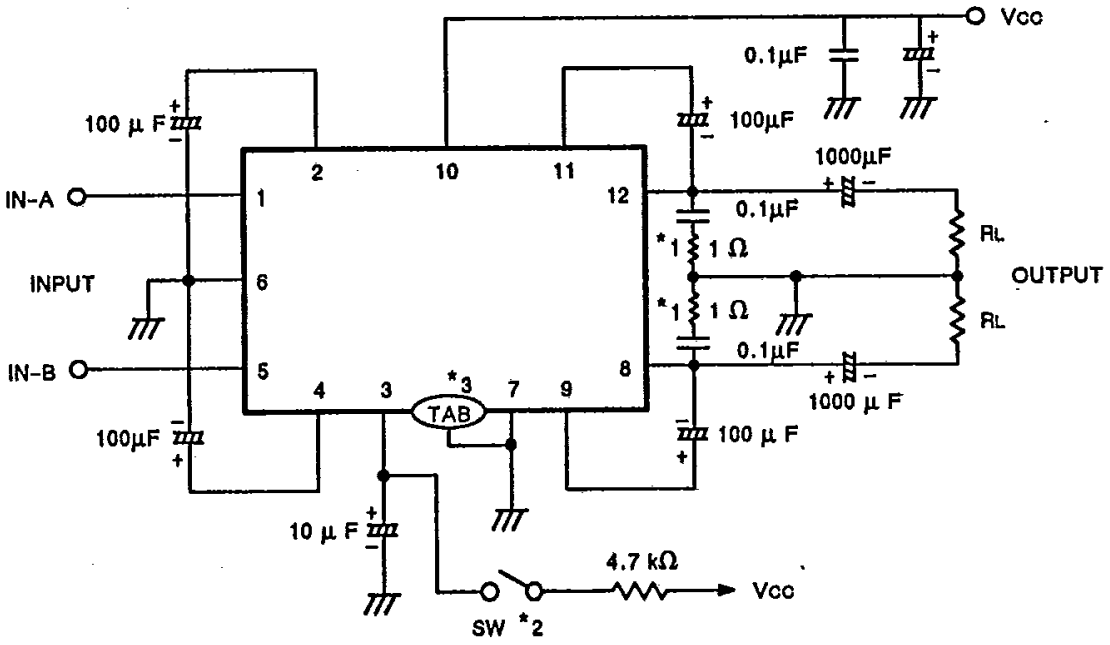
Note:
* Dual operation.

ELECTRICAL CHARACTERISTICS

(Vcc = 13.2 V, f = 1 kHz, RL = 4Ω, Tc = 25°C, One channel operation)

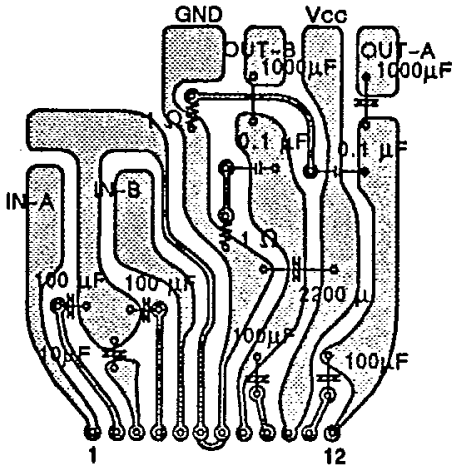
Parameter	Symbol	Condition	Value			Unit
			Min	Typ	Max	
Quiescent Power Supply Current	IQ	VIN=0V		80	160	mA
Voltage Gain	AV	PO=1W	48.5	50.5	52.5	dB
Difference Voltage Gain	ΔAV	PO=1W		0	1.5	dB
Output Power	PO	THD=10%	5.0	5.8		W
Total Harmonic Distortion	THD	PO=1W		0.2	1.0	%
Output Noise Voltage	VNO	Rg=10kΩ, BW = 20 Hz to20 kHz		0.8	1.6	mV
Input Resistance	RIN		20	30		kΩ
Cross Talk		Rg=600Ω	40	50		dB
Audio Mute Attenuation		Rg=600Ω		40		dB

Fig. 2 — TYPICAL APPLICATION EXAMPLE



Notes:
*1 Use Mylar condenser.
*2 When Vcc is apply to the pin 3, Audio mute (40dB) is available.
*3 The TAB should be connected with the GND.

Fig. 3 — TYPICAL APPLICATION CIRCUIT PATTERN (BOTTOM VIEW)



TYPICAL CHARACTERISTICS CURVES

Fig. 4 – TOTAL HARMONIC DISTORTION vs.OUTPUT POWER

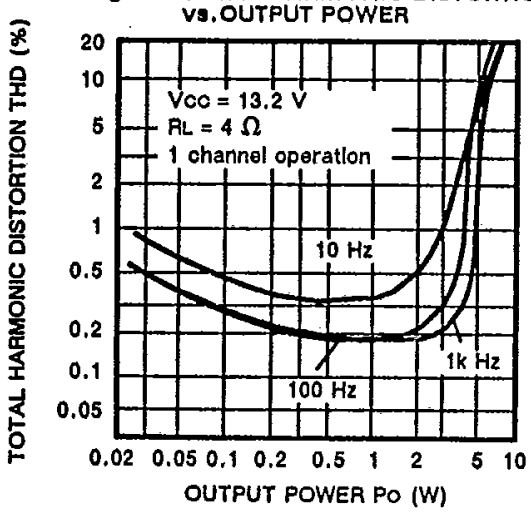


Fig. 5 – TOTAL HARMONIC DISTORTION vs.FREQUENCY

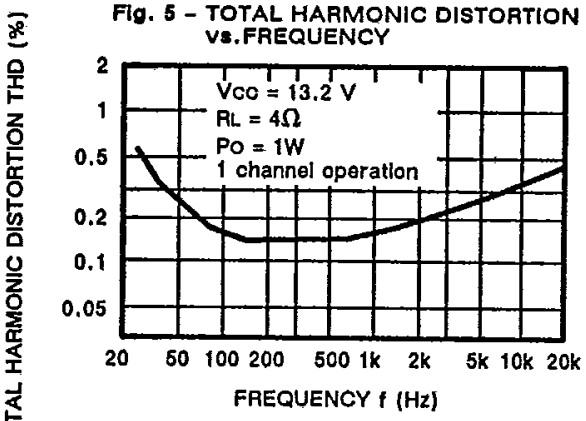
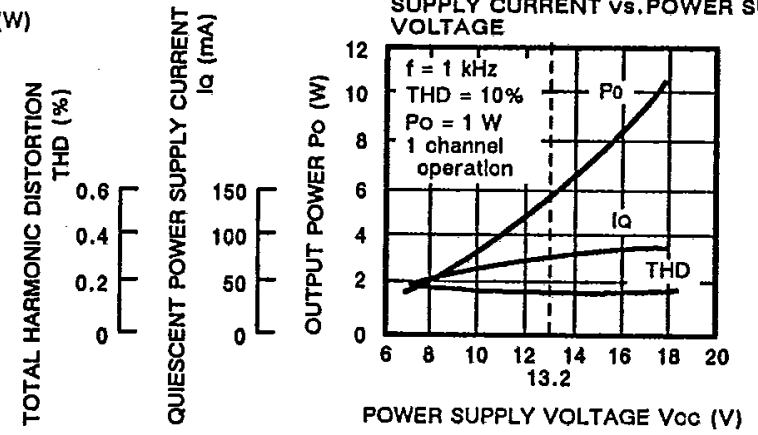
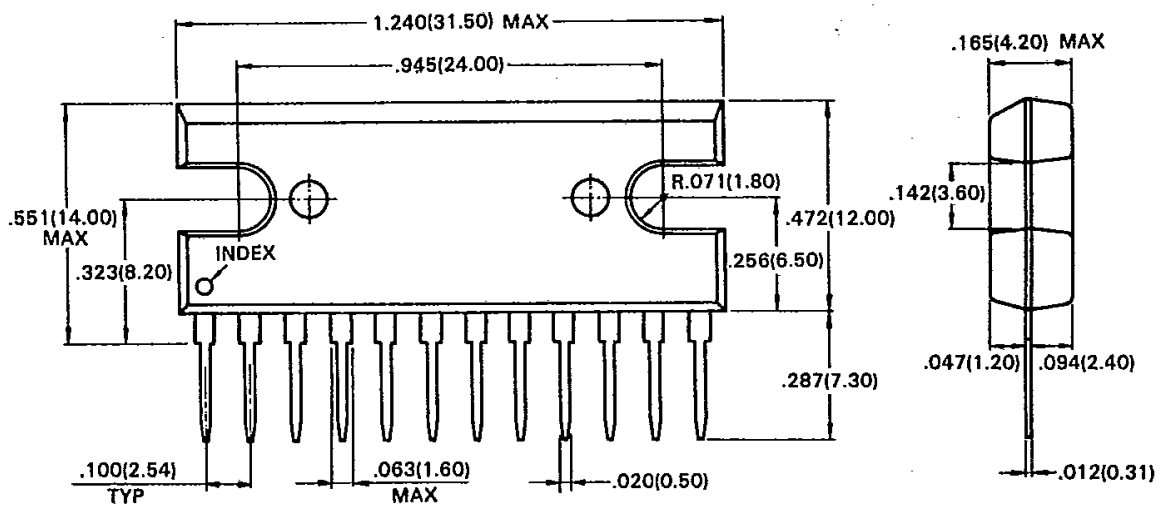


Fig. 6 – OUTPUT POWER/TOTAL HARMONIC DISTORTION/QUIESCENT POWER SUPPLY CURRENT vs.POWER SUPPLY VOLTAGE



12-LEAD PLASTIC SINGLE IN-LINE PACKAGE

(Case No. : SIP-12P-M01)



Dimensions in inches (millimeters)