

Sound processor for car audio

BD3805F

The BD3805F is a sound processor developed for car audio. High S/N and low distortion rate of parametric equalizer can be composed without an external capacitor. Pop noise when switching volume, fader, mute and tone gain can't be heard due to the integrated soft switching circuit.

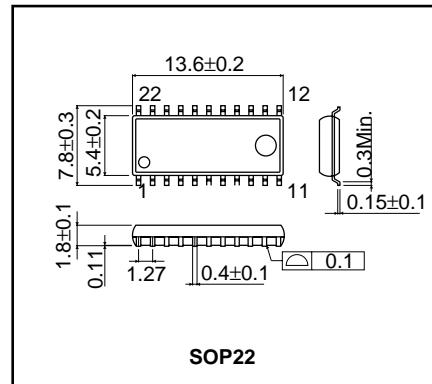
●Applications

Car audio, Mini component stereo, Micro component stereo, DVD, TV

●Features

- 1) Noise when switching, attenuation of fader and fader, and gain (middle bass and treble) can be reduced by soft switching circuit..
- 2) Perfect due low current consumption (Typ.12mA) and energy saving design due to Bi-CMOS process.
- 3) Available for Rear Entertainment System due to I²C BUS control that can use two ICs at maximum.
- 4) Noise occurred through tone pass can be reduced (5 μ Vrms)
- 5) External components reduced largely by incorporating external filter due to the switched capacitor circuit technology.
Bass, treble and middle can be controlled freely.
- 6) Integrated Ground Isolation Amplifier input idea for external stereo signal input.
- 7) SOP22 package is adopted Pins for voice input and signal output are located together to arrange the flow of signal in a same direction. It enables to make layout of board pattern easier and to save space of the board.

●External dimensions (Unit : mm)



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V _{cc}	10	V
Power dissipation	P _d	550 *	mW
Operating temperature range	T _{opr}	-40 to +85	°C
Storage temperature range	T _{stg}	-55 to +150	°C

* Derating 5.5mW / °C for operation above Ta=25°C.

When standard board(size : 70×70×1.6mm) is mounted.

●Operating Voltage Range (Ta=25°C)

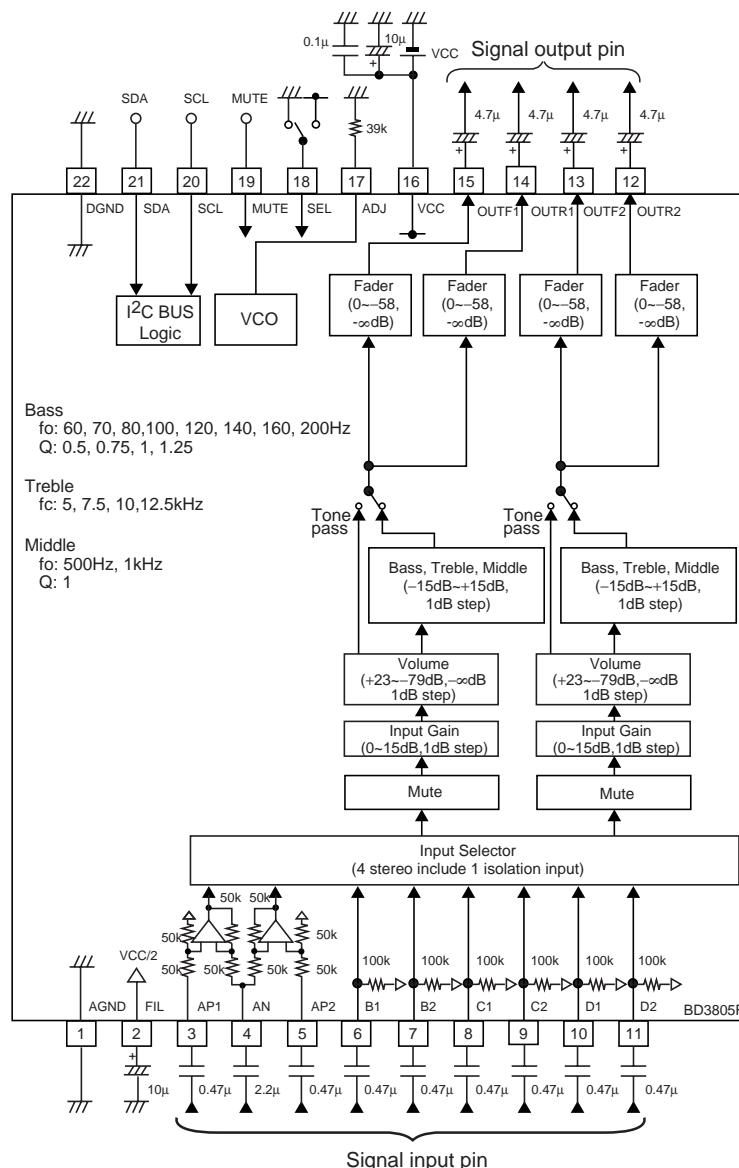
Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	V _{cc}	7.0	—	9.5	V

* It must be operated at Ta=25°C.

●Electrical characteristic curves (Unless otherwise noted : $T_a=25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Circuit current at no signal	IQ	—	12	30	mA	VIN=0Vrms
Voltage gain	GV	-1.5	0	+1.5	dB	$Gv=20\log(V_{\text{OUT}}/V_{\text{IN}})$
Channel balance	CB	-1.5	0	+1.5	dB	$CB=Gv_1-Gv_2$
Total harmonic distortion rate	THD	—	0.008	0.1	%	$V_{\text{OUT}}=1\text{Vrms}, \text{BW}=400\text{--}30\text{kHz}$
Output noise voltage	VNO	—	5	26	μVrms	$R_g=0\Omega, \text{BW}=\text{IHF}\text{A}$
Residual noise voltage	VNOR	—	2	10	μVrms	$\text{Fader}=-\infty\text{dB}, R_g=0\Omega, \text{BW}=\text{IHF-A}$
Cross talk between channel	CTC	—	-100	-80	dB	$R_g=0\Omega, \text{CTC}=20\log(V_{\text{OUT}}/V_{\text{IN}}), \text{BW}=\text{IHF}\text{A}$

●Application Circuit



Appendix

Notes

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