

Structure: Silicon Monolithic Integrated Circuit

Product: Band-pass filter for spectrum analyzer for car audio systems

Type: BA3830F

Function: 1. Built-in band pass filter for spectrum analyzer

2. Designed for 5V microcomputer power voltage

3. SOP18 package requiring few external parts

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Power Supply voltage	Vcc	9	V
Power dissipation	Pd	450 [*]	mW
Operating temperature	Topr	−25~+75	°C
Storage temperature	Tstg	−55 ~+12 5	°C

^{*}This value decreases 4.5 mW/°C for Ta=25°C or more.

Operating Voltage Range (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	Vcc	4.5	_	8.0	V

Application example

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).

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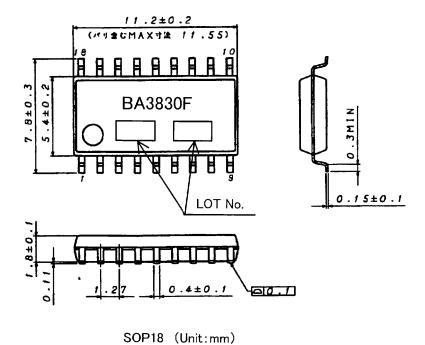
Electrical Characteristics

(Unless specified particularly, Ta=25°C, V_{cc} =5V, R_L =10M Ω , $R\phi_1$ =270k Ω , $R\phi_2$ =270k Ω)

Parameter	Symbol	Limit		Unit	Conditions		
T drameter	Gylfibol	Min.	Тур.	Max.	Offic	Conditions	
Quiescent current	I _Q	_	3.8	5.2	mA		
Reference output level(LEVEL)	V _{ol}	-3	0	3	dB	V _{IN} =−30dBV、V _o =1.5V(0dB) When f=center frequencies is input	
Max. output level(LEVEL)	VolMax	3.2	4.2	_	>	V _{IN} =−14dBV, When f=center frequencies is input	
Reference output level (REC LEVEL)	V _{or}	-3	0	3	dB	V_{IN} =-30dBV, V_{O} =1.5V(0dB) f=1kHz	
Max. output level(REC LEVEL)	V_{orMax}	3.8	4.8	1	>	$V_{IN} = -14 dBV \cdot f = 1 kHz$	
Output offset voltage	$V_{\rm off}$	-	30	90	mV	With no signal	
Center frequency 1	fo1	49	63	77	Hz	V _{IN} =-30dBV	
Center frequency 2	fo2	117	150	183	Hz	V _{IN} =-30dBV	
Center frequency 3	fo3	257	330	403	Hz	V _{IN} =-30dBV	
Center frequency 4	fo4	0.78	1	1.22	kHz	V _{IN} =-30dBV	
Center frequency 5	fo5	2.55	3.3	4.03	kHz	V _{IN} =-30dBV	
Center frequency 6	fo6	7.8	10	12.2	kHz	V _{IN} =-30dBV	
Input current when Reset pin is HIGH	I _{IN}	150	215	280	μΑ	V _{th} =5V	
Threshold level when Reset pin is ON	V_{th}	_	1.4	1.8	٧		
Threshold level when Reset pin is OFF	V_{th}	1.0	1.4		V		

[※]Q is set to 4.5.

Outline Dimension

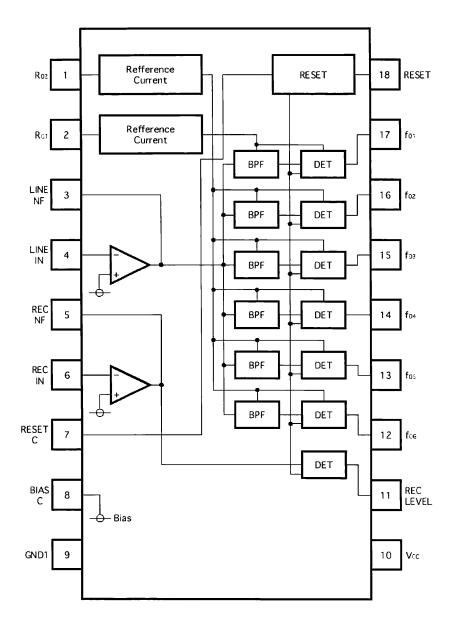


Rev.B

O Not designed for radiation resistance.



Block Diagram



Terminal Number/ Terminal Name

Terminal Number	Terminal Name	Terminal Number	Terminal Name	Terminal Number	Terminal Name
1	Ro2	7	RESETC	13	fo5
2	Ro1	8	BASIC	14	fo4
3	LINENF	9	GND1	15	foз
4	LINEIN	10	VCC	16	fo ₂
5	RECNF	11	RECLEVLE	17	fo1
6	RECIN	12	fo ₆	18	RESET



Application example

- (1) Numbers and data in entries are representative design values and are not guaranteed values of the items.
- (2) Although we are confident in recommending the sample application circuits, carefully check their characteristics further when using them. When modifying externally attached component constants before use, determine them so that they have sufficient margins by taking into account variations in externally attached components and the Rohm LSI, not only for static characteristics but also including transient characteristics.
- (3) Absolute maximum ratings
 - If applied voltage, operating temperature range, or other absolute maximum ratings are exceeded, the LSI may be damaged. Do not apply voltages or temperatures that exceed the absolute maximum ratings. If you think of a case in which absolute maximum ratings are exceeded, enforce fuses or other physical safety measures and investigate how not to apply the conditions under which absolute maximum ratings are exceeded to the LSI.
- (4) GND potential
 - Make the GND pin voltage such that it is the lowest voltage even when operating below it. Actually confirm that the voltage of each pin does not become a lower voltage than the GND pin, including transient phenomena.
- (5) Thermal design
 - Perform thermal design in which there are adequate margins by taking into account the allowable power dissipation in actual states of use.
- (6) Shorts between pins and misinstallation
 - When mounting the LSI on a board, pay adequate attention to orientation and placement discrepancies of the LSI. If it is misinstalled and the power is turned on, the LSI may be damaged. It also may be damaged if it is shorted by a foreign substance coming between pins of the LSI or between a pin and a power supply or a pin and a GND.
- (7) Operation in strong magnetic fields
 - Adequately evaluate use in a strong magnetic field, since there is a possibility of malfunction.

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