

AN93C02NSB

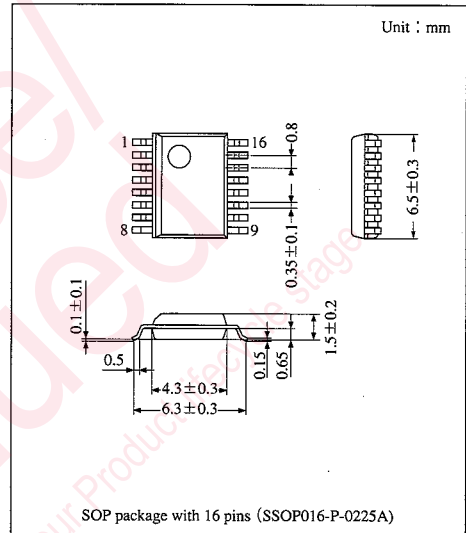
Pager IF IC

Overview

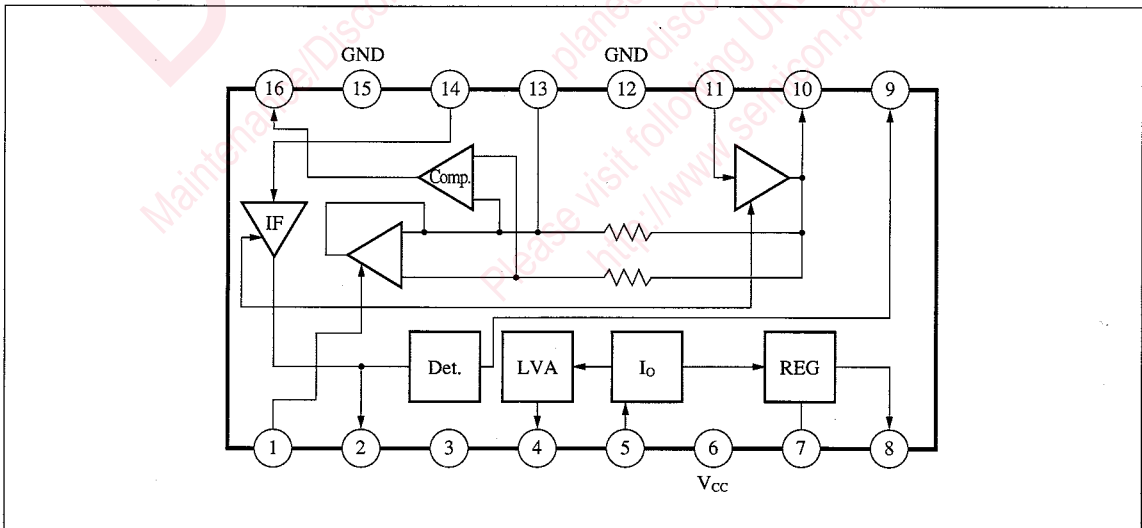
The AN93C02NSB is a pager IF IC. It incorporates an RF bipolar process to minimize current consumption.

Features

- Operates on low voltage ($V_{CC}=1.0V$ to $1.8V$)
- Low current consumption (I_{CC} =typically $450\mu A$)
- Battery saving function : zero current consumption
- Low voltage alarm (LVA)



Block Diagram



Mobile
Communi-
cation

Pin Description

Pin No.	Description	Pin No.	Description
1	QCC	9	AF output
2	IF amp. output	10	LP output
3	DET	11	LP input
4	LVA low voltage alarm output DET	12	GND2
5	BSV input	13	REF
6	V _{CC}	14	IF input
7	REG control	15	GND1
8	REG output	16	NRZ output

Absolute Maximum Ratings (T_a=25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	V _{CC}	2.0	V
Supply current	I _{CC}	2.0	mA
Power dissipation	P _D	5.0	mW
Operating ambient temperature	T _{opr}	-20 to 70	°C
Storage temperature	T _{stg}	-55 to 125	°C

Operating Supply Voltage Range

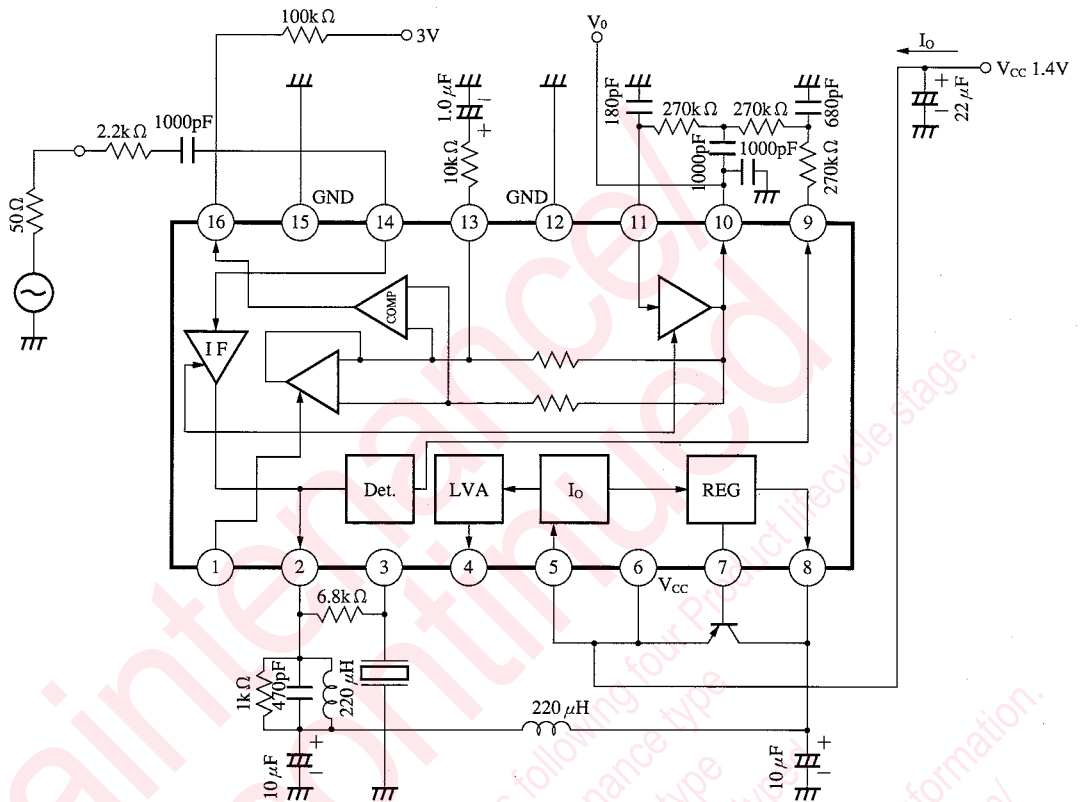
Parameter	Symbol	Range
Operating supply voltage range	V _{CC}	1.0V to 1.8V

Electrical Characteristics (T_a=25±2°C, V_{CC}=1.4V)

Parameter	Symbol	Condition	min	typ	max	Uni
Current consumption (operating)	I _O		300	450	500	μA
Current consumption (quiescent)	I _S	SW1 : b	—	0	10	μA
Low voltage alarm output voltage (L)	V _L	V _{CC} =1.03V	—	—	0.2	V
Low voltage alarm output voltage (H)	V _H	V _{CC} =1.11V	2.8	—	—	V
Low voltage alarm voltage	V _{LVA}		1.02	1.07	1.13	V
Regulated output voltage	V _{REG}		1.00	1.05	1.10	V
Demodulation output voltage	V _O		-26	-22	-18	dBs
Limiting sensitivity	V _L	V _O =-3dB (input)	—	—	-72	dBm
Demodulation output noise voltage	V _{NO}	Not modulated	—	—	-60	dBs
Waveform shaping duty (1)	DR1	ΔT=±2.0kHz	40	50	60	%
Waveform shaping duty (2)	DR2	ΔT=±4.0kHz, V _{in} =-25dBm	40	50	60	%
Total harmonic distortion	THD		—	—	-22	dB
Waveform shaping output voltage (L)	V _{nL}	V1=0.6V, V2=0V	—	—	0.2	V
Waveform shaping output voltage (H)	V _{nH}	V1=1.05V, V2=0V	2.8	—	—	V
Quick-charge/discharge current	I _{QH}	V1=1.1V, V2=3V	35	—	—	μA
Quick-charge/discharge current	I _{QL}	V1=0.3V, V2=3V	—	—	-35	μA

Note) Input signal f_c=455kHz, Δf=±7.0kHz, f_{mod}=400Hz, V_{in}=-45dBm

■ Application Circuit



Maintenance/Discontinued includes following four Product lifecycle stage.
 planned maintenance type
 maintenance type
 planned discontinued type
 discontinued type
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Pin Descriptions

Pin No.	Symbol	Description	Equivalent circuit
1	QCC	Quick-charge/discharge control Quick-charge ON when high, and OFF when low.	
2	IF amp. output	IF amplifier output	
3	DET	To be connected to a detector coil.	
4	LVA	Low voltage alarm output	
5	BSV	Battery saving control	
6	V _{CC}	Supply voltage	—————
7	REG control	Regulator control	
8	REG output	Regulator output	
9	AF output	Detector output	
10	LP output	Filter buffer output	
11	LP input	Filter buffer input	
12	GND2	Ground	—————

■ Pin Descriptions (cont.)

Pin No.	Symbol	Description	Equivalent circuit
13	REF	Comparator reference	
14	IF input	IF amplifier input	
15	GND1	Ground	
16	NRZ output	NRZ output	

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