

DATA SHEET

Typical Applications

- Generic ASK demodulators
- Gain-controlled ISM demodulators
- ID MOS's SW161 based 433MHz receivers

Features

- Transmission and reception at
- Typical carrier frequency: 10.7 MHz
- Data rate: up to 256 kbps
- Differential input sensitivity: 1mV
- Embedded AGC with controlled current output for external variable gains
- Power supply: 2.7-3.3 V



Product Description

SW220 is an integrated discriminator designed for ASK receivers. Working with a standard input frequency of 10.7 MHz, it can withstand bit rates up to 256 kbps. SW220 also includes an imbedded AGC generating a controlled

output current, specifically tailored to drive external variable gains. Together with ID MOS's SW161, it comes as a complementary part for fully integrated ISM receivers.

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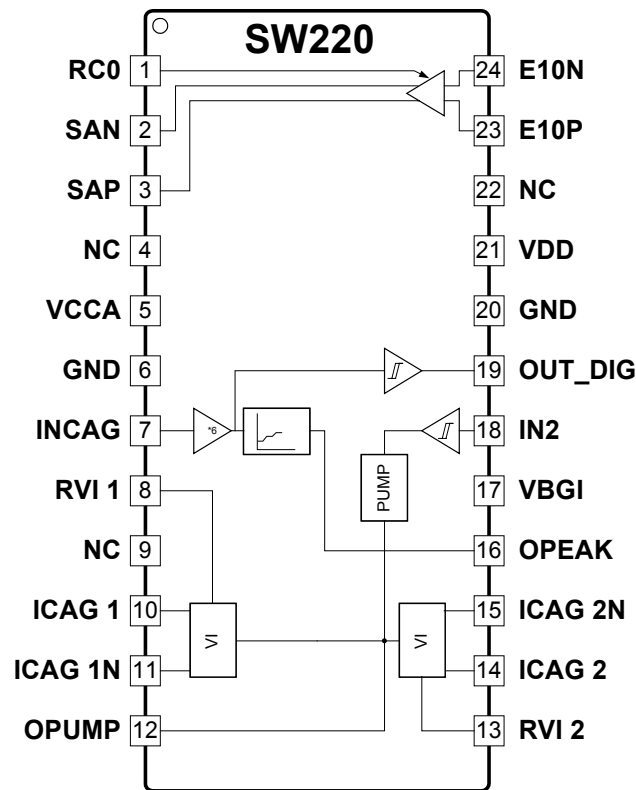


Fig. 2 : Bloc diagram:

1.2 I/O Description

Name	Pin	Type	Function
RCO	1	Analog i/o	gain adjustment
SAN	2	Analog i/o	Negative output amplifier 1
SAP	3	Analog i/o	Positive output amplifier 1
VCCA	5	Power	Power
GND	6	Power	Ground
INCAG	7	Analog i/o	Input amplitude detector
RVI 1	8	Analog i/o	adjust courant gain control 1
ICAG1	10	Analog i/o	positive courant gain control 1
ICAG 1N	11	Analog i/o	negative courant gain control 1
OPUMP	12	Analog i/o	output pump
RVI 2	13	Analog i/o	adjust courant gain control 2
ICAG 2	14	Analog i/o	positive courant gain control 2
ICAG 2N	15	Analog i/o	negative courant gain control 2
OPEAK	16	Analog i/o	
VBGI	17	Analog i/o	DO NOT CONNECTED
IN2	18	Analog i/o	Input Amplifier 2
OUT_DIG	19	Digital Output output CMOS buffer	Digital Output
GND	20	Power	Ground
VDD	21	Power	power
E10P	23	Analog i/o	Positive input
E10N	24	Analog i/o	Negative input

1.3 Package outline

The SW220 is provided in a 24 pins SOIC ceramic package.
The following drawing gives the product pinout and package's mechanical outlines:

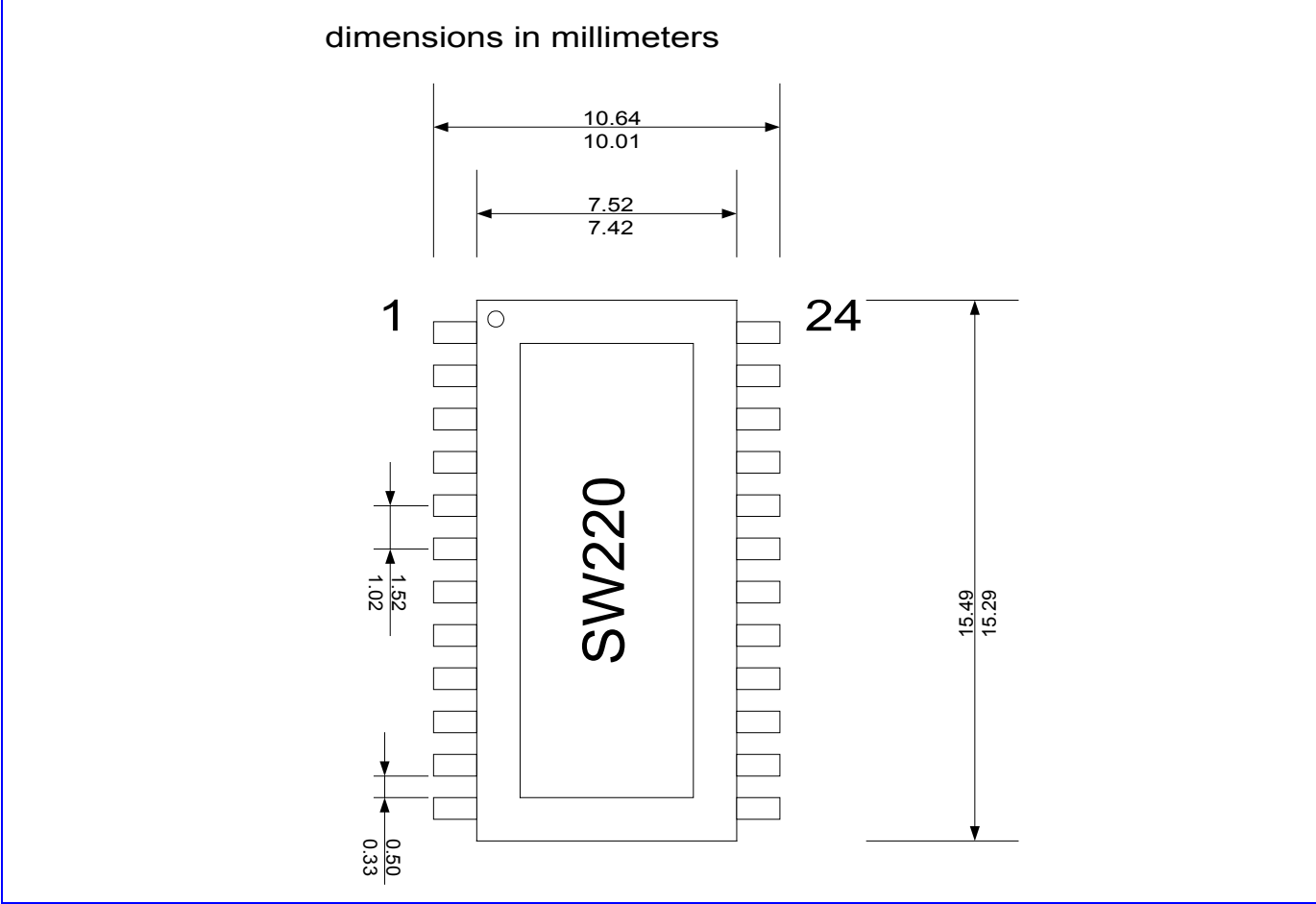


Fig. 3 : Package outline

2 Device characteristics

2.1 Absolute maximum ratings

Maximum ratings are the extreme limits to which the device can be exposed without permanent damages. It is not guaranteed to operate properly at the maximum ratings. Refer to next chapter for guaranteed conditions.

Parameter	Min	Max	Unit	Note
Supply voltage	-0.5	7	V	1)
Storage temperature	-55	125	°C	
electrostatic discharge (ESD)		1000	V	2)

1) Exposure to absolute maximum rating conditions for extended periods may affect device reliability (e.g hot carrier degradation).

2) According to MIL STD 883C, method 3015.7 .

2.2 Operating conditions

Parameter	Min	Typ	Max	Unit
Operating ambient temperature	-20	25	+80	°C
Supply voltage	2.7	3	3.3	V

All parameters given in the following sections are only valid up on respect to those operating conditions.

2.3 Electrical AC characteristics

($T_A = 25\text{ °C}$, $V_{CC} = 3\text{ V}$)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Frequency carrier	FC			10.7	11.0	MHz	
ASK Modulation Frequency	F_{ASK}		-	128	-	KHz	
Input Signal Amplitude	IS		-	1		mV	
Supply current		11		mA			

3 Application notes

Typical implementation for SW220 device.

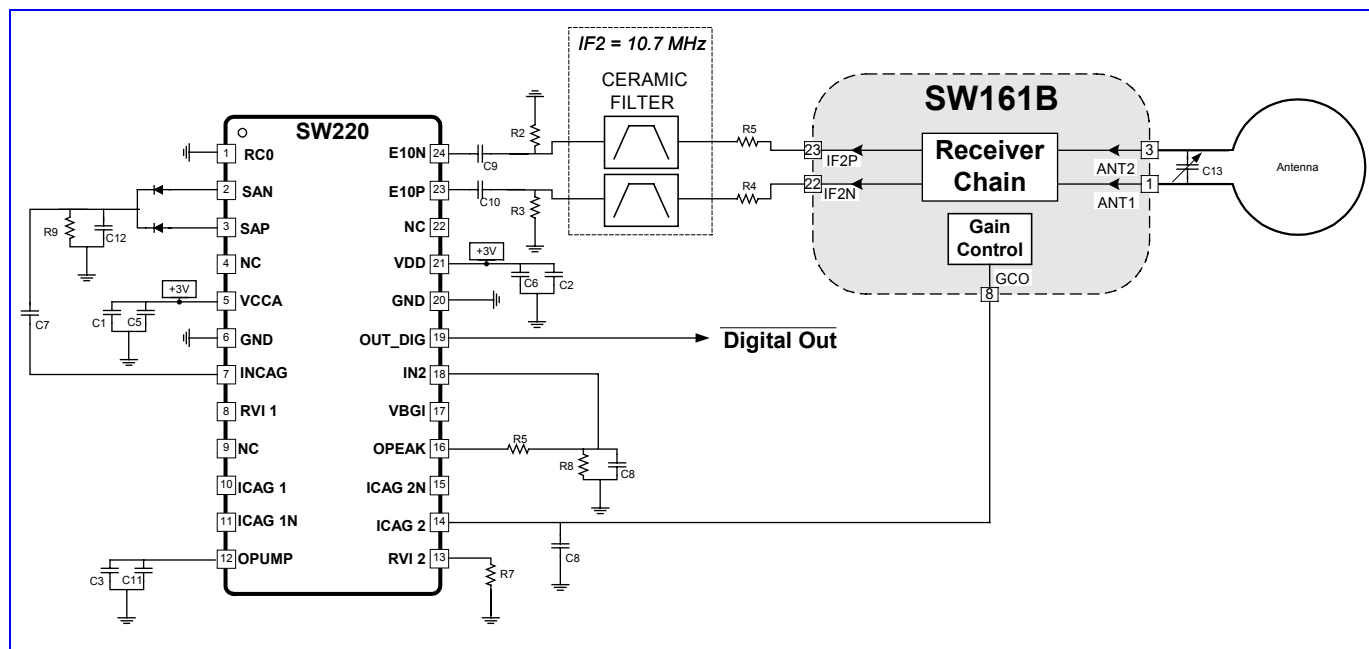


Fig. 4 : SW161B circuit connections

The value of each external component is given in the following table:

Component Name	Value	Unit
C1, C2	10	pF
C3	100	pF
C4	1	nF
C5, C6	100	nF
C7, C8, C9, C10	1	μF
C11	4,7	μF
C12	TBD*	pF
C13	TBD	pF
R1	100	Ω
R2, R3, R4, R5	330	Ω
R7	12	kΩ
R8	5	MΩ
R9	TBD*	kΩ
Ceramic Filter	10.7	MHz
Ceramic Filter	10.7	MHz
SW161B (433MHz receiver)		

(*) according to application bit-rate.

NOTE: envelope detection diodes shall be any standard switching diode.

WARNING: pin 17 shall remain unconnected at all times.

