



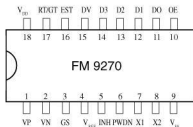
DTMF Receiver FM9270

FM9270 is Dual Tone Multiple Frequency (DTMF) receivers integrated with digital decoder and bandsplit filter function. It uses digital counting techniques to detect and decode all the 16 DTMF tone pairs into a 4 - bit coded output. Highly accurate switched capacitor filters are employed to divide DTMF signals into low and high group signals. A built - in dial tone rejectan circuit is provided to eliminate the need for pre - filtering.

FEATURES

- ◆ 3.58MHz Crystal or ceramic resonator
- ◆ Operating voltage: 2.5 - 5.5V
- ◆ Minimal external components
- ◆ No external filter is required
- ◆ Tristate data output for μ c interface
- ◆ Low standby current
- ◆ 1633Hz can be inhibited by the INH pin
- ◆ Excellent performance
- ◆ DIP 18 package

PIN ASSIGNMENT



PIN FUNCTIONS

Pin	Symbol	I/O	Inside connection	Description
1	VP	I	Amplifier	Non - inverting input
2	VN	I	Amplifier	Inverting input
3	GS	O	Amplifier	Output terminal
4	V _{REF}	I	Vref	Reference voltage output VDD/2
5	INH	I	CMOS IN, Pull down	A B C D signals inhibited,logic high
6	PWDN	I	CMOS IN, Pull down	Stand by reduce power dissipation,active high
7 - 8	X1/X2	I	OSC	Osc 3.58MHz
9	V _{SS}	I	Power	Ground
10	OE	I	CMOS IN, Pull up	Data output enable,active high
11 - 14	DO - D3	O	CMOS OUT, Tristate	Data output
15	DV	O	CMOS OUT	Data valid output
16	EST	O	CMOS OUT	Output controller
17	RT/GT	I/O	CMOS OUT/IN	Tone acquisition time controller
18	V _{EXT}	I	Power	Power

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions		Min	Typ	Max	Unit
		VDD	Conditions				
V_{DD}	Operating voltage	—	—	2.5	5.0	5.5	V
I_{DD}	Operating current	5V	—	—	4.0	7.0	mA
V_{IL}	Low voltage input	5V	—	—	—	1.0	V
V_{IH}	High voltage input	5V	—	4.0	—	—	V
I_{IL}	Low input current	5V	$V_{DD}=V_{DD}=0V$	—	—	0.1	μA
I_{IH}	High input current	5V	$V_{DD}=V_{DD}=5V$	—	—	0.1	μA
R_{OE}	Pull-up resistor of OE port	5V	$V_{DD}=0V$	60	100	150	$K\Omega$
R_{in}	Input impedance	5V	—	—	10	—	$M\Omega$
I_{OH}	Source current	5V	$V_{out}=4.6V$	-0.4	-0.8	—	mA
I_{OL}	Sink current	5V	$V_{out}=0.4V$	1.0	2.5	—	mA
f_{osc}	System frequency	5V	$Cry=3.5795$	3.5795	3.5795	3.5831	MHz

APPLICATION CIRCUIT

