1. General Description

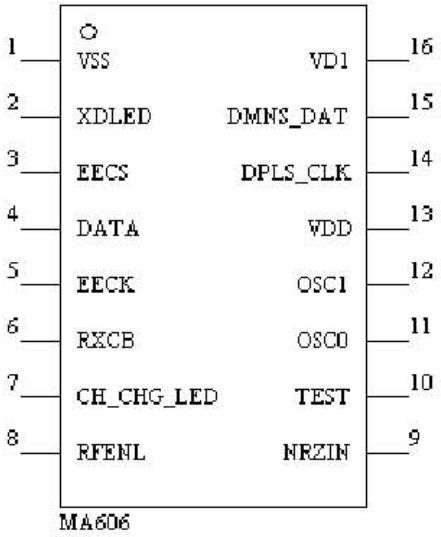
MA6162 is a wireless mouse receiver control IC. It operates using RF at a frequency of 27 MHZ, single channel. MA60H09, MA6121,MA6231 and MA6221 can be the transmitter.

MA6162 (packaged with SOP-16, 150mil) can be configured as USB or PS/2 mode. It's auto-detected. It can receive command and echo status or data format which are compatible with PS/2 mode or USB mode.

2. Features

- USB-PS/2 Auto-Detection Circuit.
- 5V -> 3.3V Regulator.
- 120KHz Ring Oscillator.
- Compatible with PS/2 protocol.
- Conforms to USB 1.5 Mbps Specification, Version 1.1.
- Supports 1 device address and 2 endpoints (1 control endpoint and 1 interrupt endpoint).
- Integrated USB transceiver.
- Built-in 1.5Kohm D- pull-high resistor.
- 6MHz clock rate (76.8KHz clock rate in PS/2 and air interface).
- Compatible with Microsoft scrolling and 5B mouse.
- Build-in error detection circuit (one way).
- Baud Rate: 4800 bps in air or 4096 bps as in optical mouse mode.

3. Pin Assignment : *MA6162 or MA6062 pin assignment*



4. Pin Out & Description

(▲=useless pin as without EEPROM)

Pin No.	Symbol	I/O	Description
1	VSS	P	Ground
2	XDLED	O	LED (When received data is valid)
3	EECS	O	EEPROM Chip Select (▲)
4	DATA	I/O	EEPROM Data Input/Output(▲)
5	EECK	O	EEPROM Clock (▲)
6	RXCB	I	Change to Received ID Button (▲)
7	CH_CHG_LED	O	Channel Change LED
8	RFENL	O	RF Module Power Control
9	NRZIN	I	Demodulated Digital Data Input
10	TEST	I	Test Mode
11	OSCO	O	6MHz Resonator Output
12	OSCI	I	6MHz Resonator Input
13	VDD	P	Power (3.3V)
14	DPLS_CLK	I/O	USB D+ or PS/2 Clock
15	DMNS_DAT	I/O	USB D- or PS/2 Data
16	VD1	P	Power (5V)

5. Absolute Maximum Ratings

Supply Voltage..... – 0.3V to 5.5V
Storage Temperature..... – 50°C to 125°C
Input Voltage.....VSS – 0.3 to VD1 +0.3V
Operating Temperature..... – 25°C to 75°C

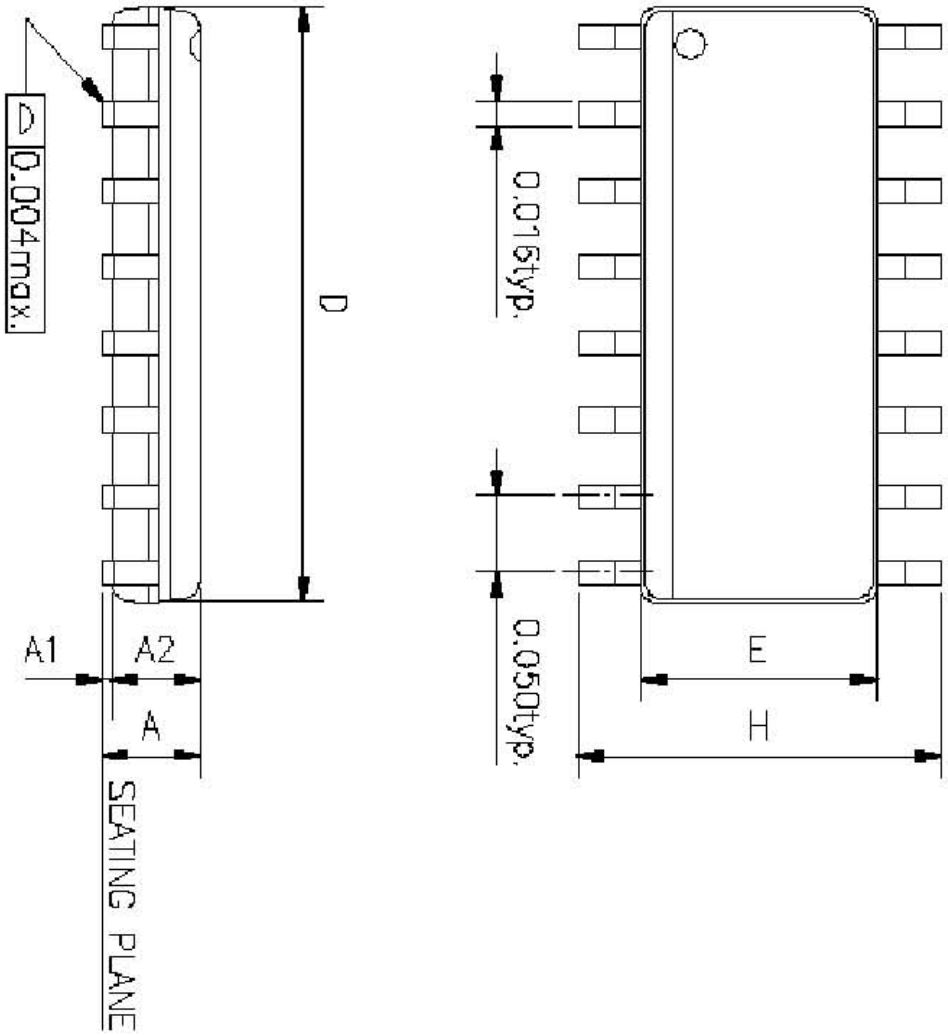
6. DC Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_{D1}	Operating Voltage	-	2.4	-	5.5	V
I_{D1}	Operating Current	F_{SYS} = 6MHz, No Load	10	20	30	uA
V_{IL}	Input Low Voltage for I/O ports	-	0	-	1.5	V
V_{IH}	Input High Voltage for I/O ports	-	3.5	-	5	V
I_{OL}	I/O Ports Sink Current	VD1=5V, VOL=0.5V	4	6	-	mA
I_{OH}	I/O Ports Source Current	VD1=5V, VOL=4.5V	-2	-3	-	mA
I_{OL1}	CLK, DATA Sink Current	VD1=5V, VOL=0.5V	8	-	-	mA
I_{OH1}	CLK, DATA Source Current	VD1=5V, VOL=4.5V	-1.5	-2.5	-	mA
R_{PH}	Pull-High Resistance of CLK, DATA	-		15		KΩ

7. AC Characteristics

Symbol	Parameter	Min.	Type	Max.	Unit
F_{SYS}	System Clock		6		MHz
T_{RES}	Power on reset	300	426	500	ms
Tmca	Mouse CLK Active Time	30	39	50	us
Tmci	Mouse CLK Inactive Time	30	39	50	us
Tmdc	Mouse sample Data from CLK rising	5	13	25	us
Tsdc	Time from Data transition to CLK falling	5	26	-	us
Tscd	Time from CLK rising to Data transition	5	13	-	us
Tr (Tf)	Rising (Falling) edge cross width	210			us

8. Package Type



SYMBOLS	MIN.	MAX.
A	0.053	0.069
A1	0.004	0.010
D	0.386	0.394
E	0.150	0.157
H	0.228	0.244
L	0.016	0.050
θ	0	8

UNIT : INCH