

E-CMOS

EC3586

EC3586 3D Serial Mouse Controller With Auto-Ref

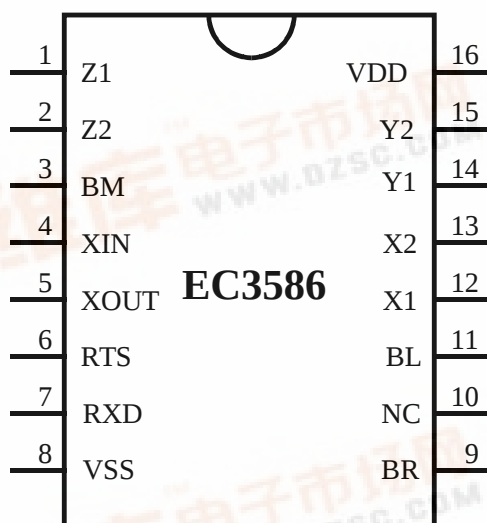
FEATURES

- . Auto-reference function for X-, Y-, Z-axis.
- . 5 types of Z-axis encoders: button, optical 1:1, 2:1, 4:1 & mechanical 2:1
- . Built-in Zener diode.

Ordering Information:

Encoder type	32768 Hz
2:1 Optical/Mechanical	EC3586AX
Button	EC3586BX
4:1 Optical	EC3586CX
1:1 Optical	EC3586EX

1. PIN ASSIGNMENT



2. PIN DESCRIPTION

PIN NO	PIN NAME	I/O	FUNCTION
1	Z1	I	Input from Z-axis photo / mechanical encoder .
2	Z2	I	Input from Z-axis photo / mechanical encoder.
3	BM	I	Middle button input.
4	XIN	I	Crystal oscillator input.
5	XOUT	O	Crystal oscillator output.
6	RTS	I	When once a rising edge sent to RTS within 15ms then the mouse will return a series PnP ID code to identify the mouse mode in Microsoft IntelliMouse.
7	RXD	O	Serial data output to Receive Data of RS232C.
8	VSS		Negative power supply.
9	Br	I	Left button input.
10	NC	I	NC
11	BL	I	Left button input.
12	X1	I	Input from the first X axis photo-encoder.
13	X2	I	Input from the second X axis photo-encoder.
14	Y1	I	Input from the first Y axis photo-encoder.
15	Y2	I	Input from the second Y axis photo-encoder.
16	VDD		Positive power supply.

3. DATA FORMAT

3.1 Intelli 3D (Serial,1200bps):

byte	Bit						
	6	5	4	3	2	1	0
1	1	BL	BR	Y7	Y6	X7	X6
2	0	X5	X4	X3	X2	X1	X0
3	0	Y5	Y4	Y3	Y2	Y1	Y0
4	0		BM	Z3	Z2	Z1	Z0

3.2 Transmit sequence of each byte:

	Intelli 3D
1 st bit	Start bit
	Data bit 0
Last bit	Data bit 6
	Stop bit

3.3 BR/BM/BL Data format:

Intelli 3D
1=Depressed
0=Released

4. ABSOLUTE MAXIMUM RATINGS

PARAMETER	MIN	MAX	UNIT
Supply Voltage	0	6.5	V
Ambient Temperature	0	70	°C
Storage Temperature	-40	125	°C
Power Dissipation (Tamb = 70 °C)		100	mW

Note: This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operation sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended for extended periods of time may affect reliability.

5.DC ELECTRICAL CHARACTERISTICS

(NOTE: VDD = 5V, unless otherwise specified)

PARAMETER	MIN	TYP	MAX	UNIT
Operating Voltage	4.5	5	5.5	V
Operating Current (No load)			2.0	mA
BL/BM/BR Internal Pull-down Resistor	150	200	270	Kohm
Z1/Z2(A/C/E type) Internal Pull-down resistor		12		Kohm
Z1/Z2(B type) Internal Pull-up resistor	75	100	150	Kohm
X1,X2,Y1,Y2,Z1,Z2 Input Range	0.1		3.2	V
X1,X2,Y1,Y2,Z1,Z2 Input Amplitude	0.6			V
X1,X2,Y1,Y2 Internal Pull-down resistor		12		Kohm
RXD Output Current (source) (Voh=(RTS-1)V)	1.0			mA
RXD Output Current (sinking) (Vol=0.5v)	1.0			mA
Zener Diode Voltage (Iz=4mA)	5.0	5.2	5.4	V

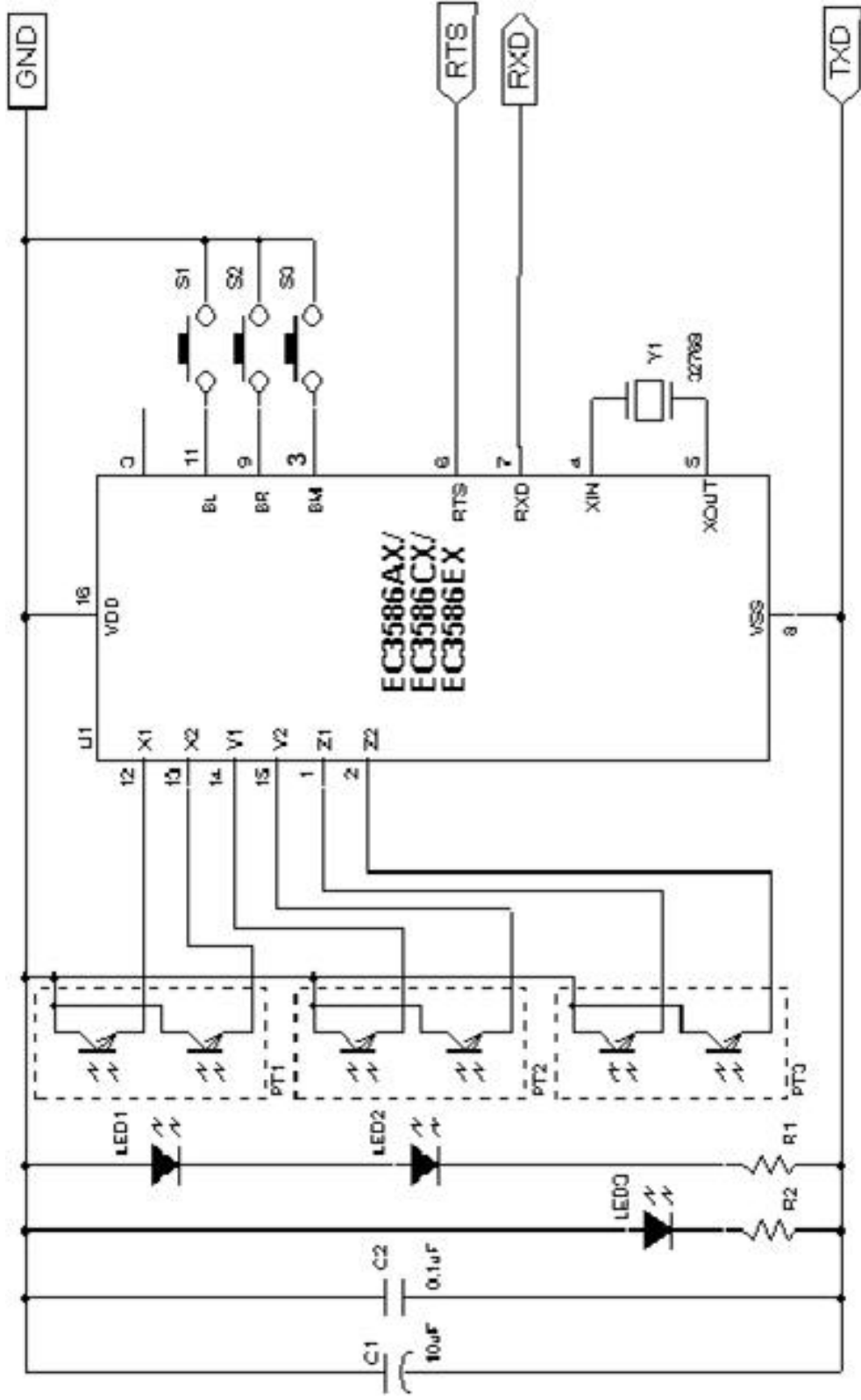
6.AC ELECTRICAL CHARACTERISTICS

PARAMETER	MIN	TYP	MAX	UNIT
Oscillator Frequency		32.768		KHz
BR/BL/BM/Z1/Z2 Button Debounce Time	32			ms
RXD Transmission Rate(Intelli)		1215		Hz

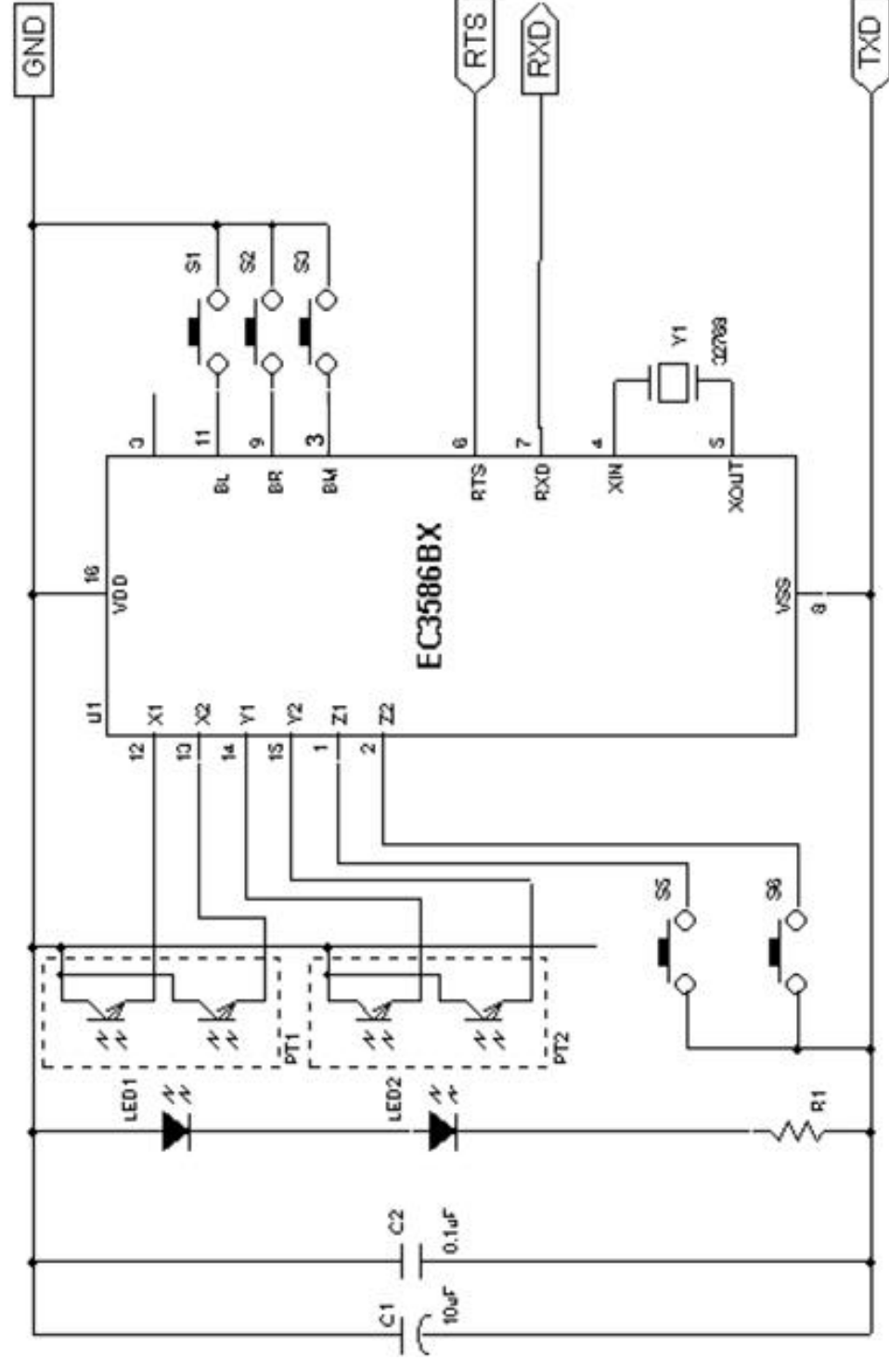
7.PnP CODE

Non-PnP ID	“M”, “Z”, “@”, “”, “”, “”, “”	4D,5A,40,00,00,00
Begin PnP	08h	08
PnP Rev	1.0	01,24
EISA ID	“ECM”	25,23,2D
Product ID	0002	10,10,10,12
Extend	“\”	3C
Extend	“\”	3C
Class Name	“MOUSE”	2D,2F,35,33,25
Extend	“\”	3C
Driver ID	“PNP0F0A”	30,2E,30,10,26,10,21
Checksum	37F	17,26
End PnP	09h	09

Typical Application Circuit (For Reference Only)



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