

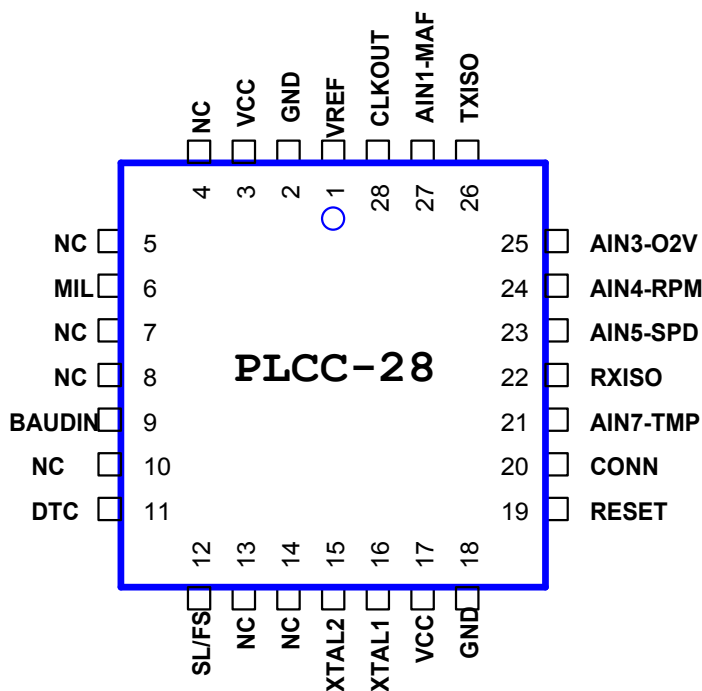


Features

- Compatible with ISO 14230-4
- 2.7 to 6V operating range
- MIL LED output
- Freeze Frame handling
- K Line communication
- Fixed or variable PIDs
- ECU address 0x33 EOBD Mode or 0x10
- Slow init / fast init selection possible
- Physical and functional addressing
- MODE 1..4

Description

OE91C1100 is intended to help the OBD protocol programmer. With a few external component , this chip simulate a ECU with K-Line diagnose output. Most of SAE J1979 PIDs are implemented. The PIDs are variable using a pot. When the DTC input is low , three DTC are generated and MIL LED is on till a erase DTC command comes. (MODE3 and 4). The OE91C1100 communicate at 10400 baud with keywords 0x8F and 0xE9 , respond to EOBD addressing (0x33) and direct addressing (0x10) With the slow/fast input user can select the init type of ECU.



**KWP2000 ECU
simulator according
to ISO14230 and
ISO15031-5**

OE91C1100



Pin description

Pin	Pin Name	Type	Description
1	VREF	I	2.5 V extern ref input for ADC
2	GND		Ground
3	VCC		Supply voltage
4	NC		
5	NC		
6	MIL	O	MIL LED max 5 mA for low current LED
7	NC		
8	NC		
9	BAUDIN *		16 x RS232 Baudrate input clock
10	NC		
11	DTC	I	A low on this input generates 3 DTCs
12	S/F init	I	Input to select slow or fast init
13	NC		
14	NC		
15	XTAL2	I	16 Mhz crystal input
16	XTAL1	I	16 MHz crystal input
17	VCC		Supply voltage
18	GND	I	Ground
19	RESET	I/O	A high level on this pin during 2 machine cycles while the oscillator is running resets the device.
20	LED2	O	LED output to indicate ECU connected to tester
21	AN7	I	Analog canal 7 input
22	RXISO	I	Input ISO receiver
23	AN5	I	Analog canal 5 input
24	AN4	I	Analog canal 4 input
25	AN3	I	Analog canal 3 input
26	TXISO	O	Output ISO K-Line
27	AN1	I	Analog canal 1 input
28	CLKOUT *	O	Clock output for RS232 baud rate in

* Pins 28 and 9 must be tied together



Description

MODE 1 : in this mode OE91C1100 chip responds with PIDs 00-1F. On the table below you see the fixed and the variable values.

PID	Description	Fixed Value	Variable Value
03	Fuel system status	00	-
05	Engine coolant temp.		-40 ... 215
0C	Engine RPM		0 ... 6000
0D	Speed		0... 255
10	Air flow rate of MAF sensor		0...655.35
13	Location of O2 sensors	Bank 1 sensor 1	-
14	O2 volt		0 ... 1.275 V
1C	OBDD Type	EOBD	-
1F	ECUSim Version	1.xx	

MODE 2: when the DTC input is low , P0100 cause a freeze frame storage as follow :

PID	Description	Stored Value
05	Engine coolant temp.	40 grad
0C	Engine RPM	1234 1/min
0D	Vehicle speed sensor	67 km/h

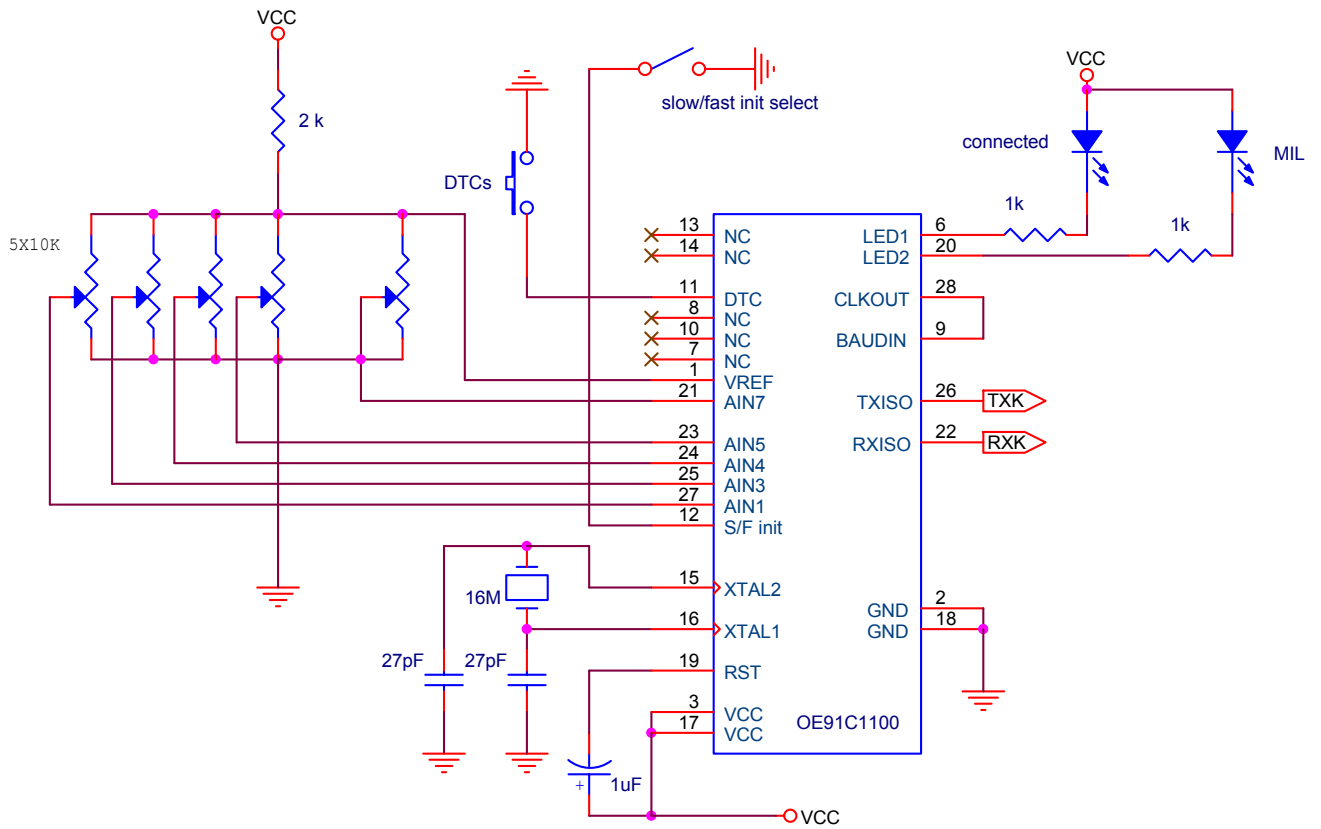
MODE 3 : when requesting this MODE the 3 DTCs come from simulator. P0100 , P0200 , P0300

MODE 4 : delete the DTC and freeze frame storage datas. MIL LED turns off.

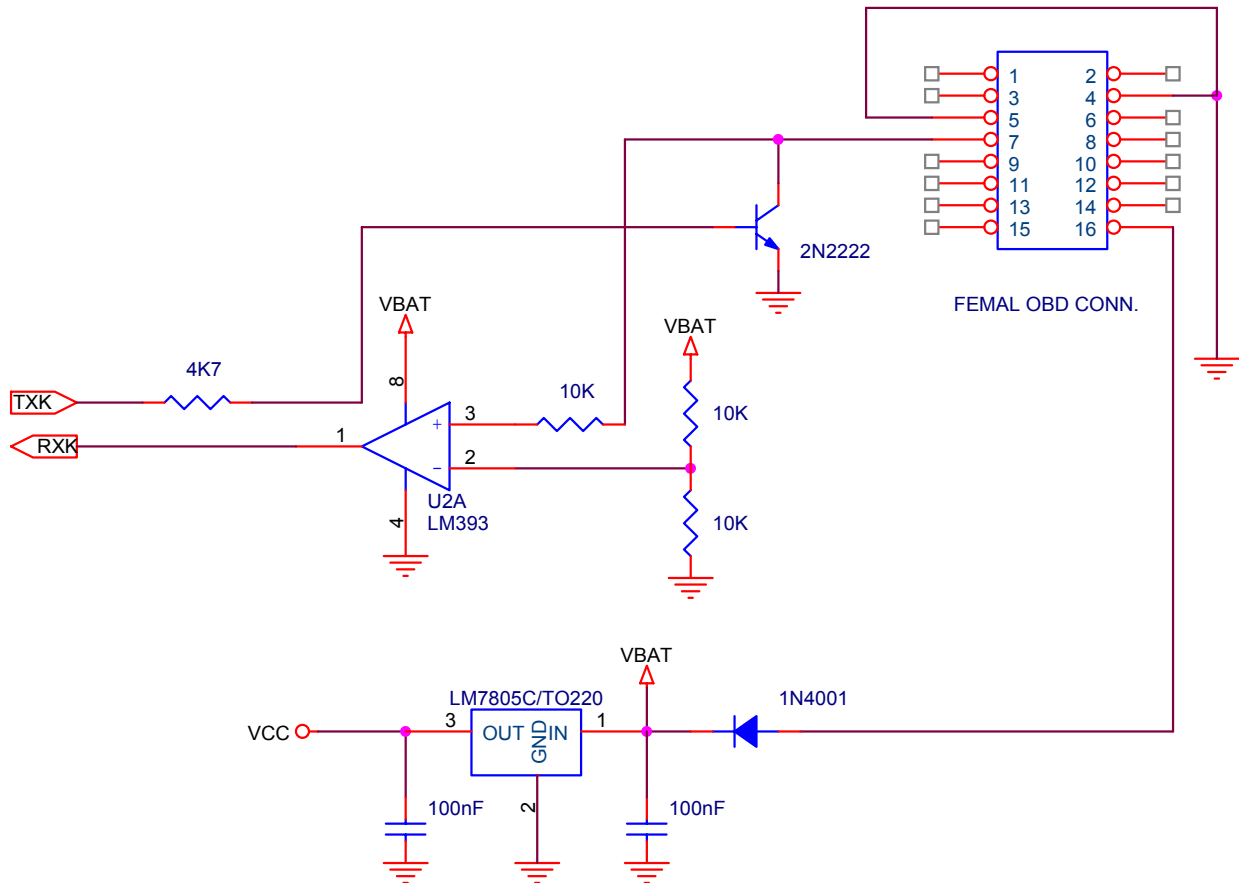
- interbyte time is 10 mS
- all timeout according to ISO15031-5 and SAE J1979



Application notes



- the both LEDs are low current $I_f < 5 \text{ mA}$.
- Don't change the value of crystal.
- Select Fast or slow init with switch



- use a 12 VDC / 500 mA Adapter to power the simulator and the tester.
- A femal OBD connector must be used.
- connect a resistor > 510 ohm on K-Line to vbat if iso signal is disturbed