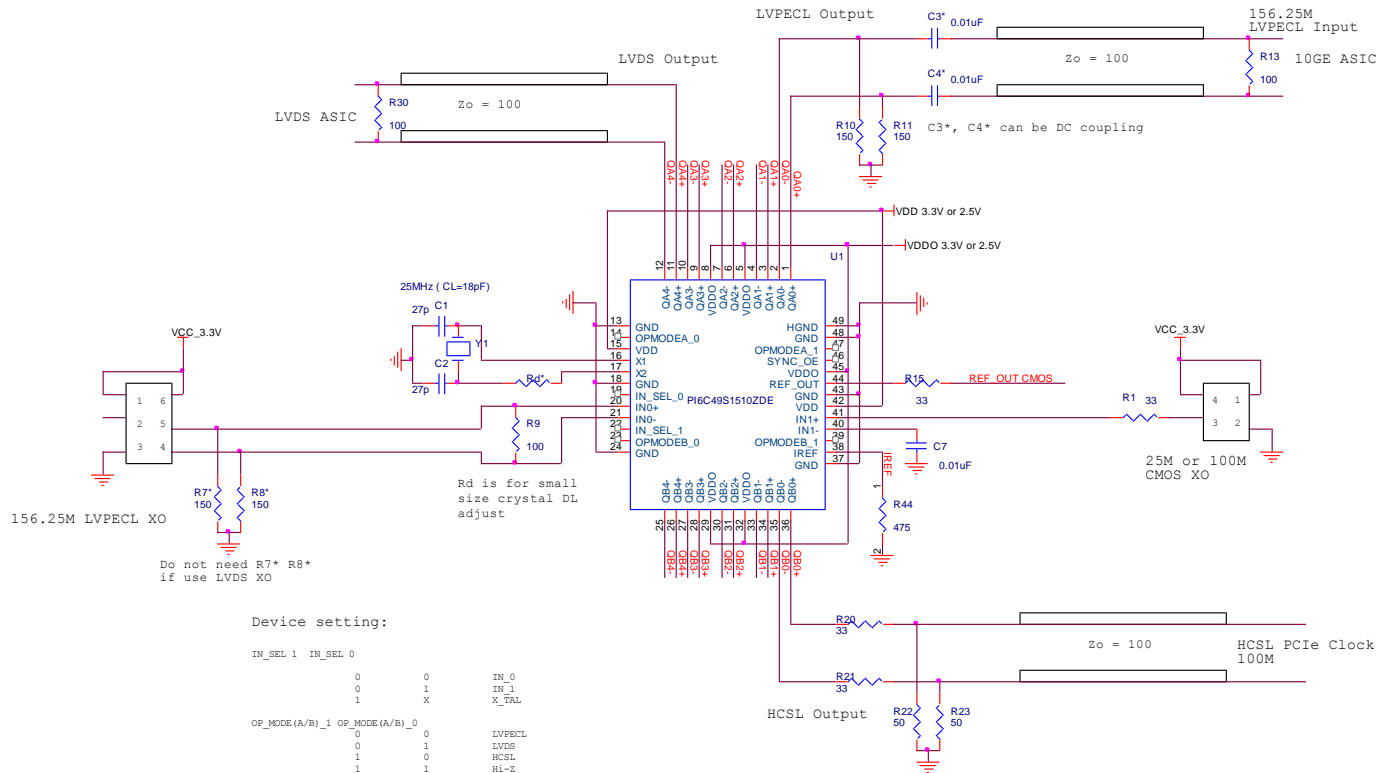


PI6C49S1510B Application and PCB Guide

1. Introduction

The PI6C49S1510B is 1.5GHz high performance differential output buffer with 2 bank of 10 outputs. The two bank's output can be configured in LVPECL, LVDS, and HCSL output according to application need. This feature can save customer inventory for multi project use of this part in different type output requirement.

2. Application Reference Circuit



Note:

- 1) For small size crystal app. please use $R_d=1k$ ohm for 100uW drive level adjust
- 2) Put 0.1uf + 1uf decoupling cap. on each VDD pin, put 0.1uf on comp. side
- 3) Leave un-used Qx and /Qx output just open in NC
- 4) LVPECL needs 150 pull-down to drive RX equiv. 100 diff. load, LVDS output does not need 150 pull-down
- 5) Put external pull-up/down to confirm IN_SEL and output mode selection
- 6) Bank QA and QB can be selected in different output type by setting "OPMODEA/B" pins
- 7) Remember that device thermal pad needs 4 to 6 vias connected to GND plane

3. Crystal Circuit Layout

- 1) X1 and X2 pins are connected to crystal trace loop which should be very narrow without any board via in the loop and need keep-out around the traces;
- 2) Place crystal closer to the IC X1, X2 pins as possible and route crystal C1 and C2 load caps. on the top layer without via to the crystal pins;
- 3) Keep load cap. C1 and C2 GND pins as close as possible to reduce board noise coupling into these caps. as the following diagram: Suggest $C1=C2=27pF$ for $CL=18pF$ 25M crystal, considering the PCB C_{stray} ;
- 4) For small size crystal application, please refer to Fig. 1 of DL vs. R_d curve to adjust drive level;

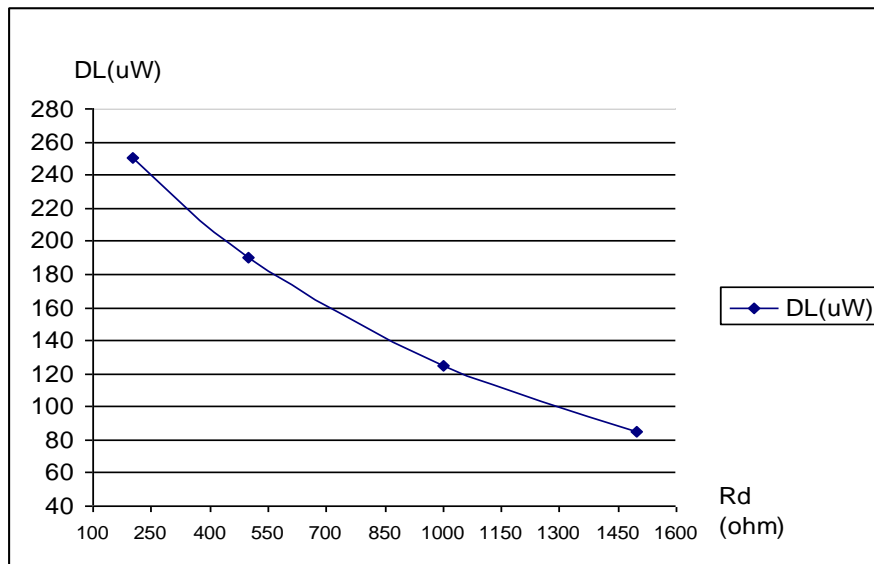
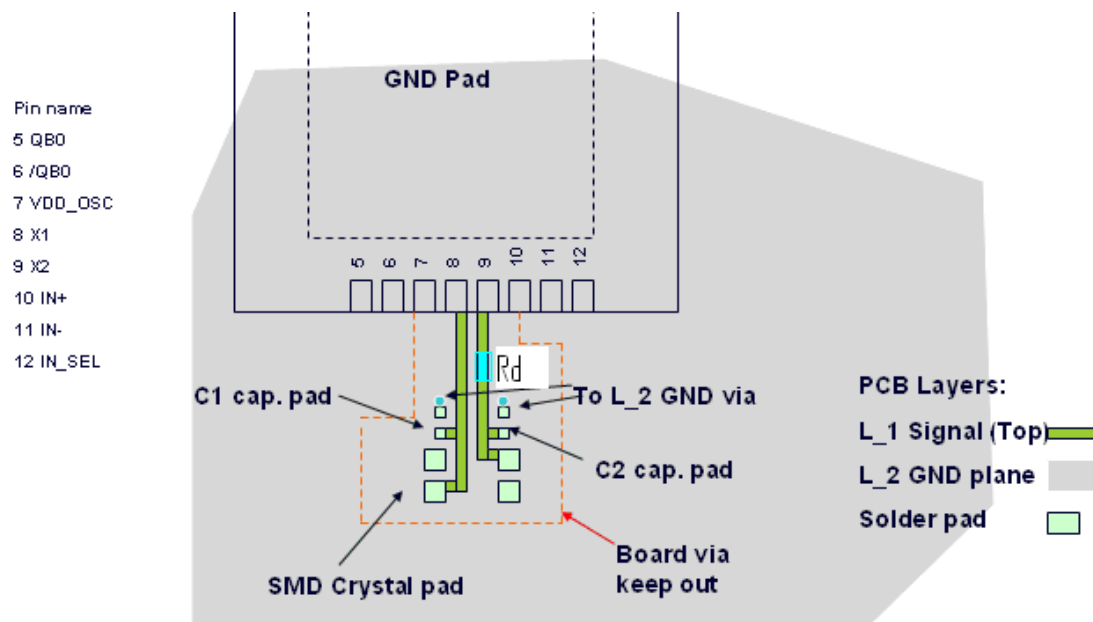


Fig. 1 Crystal OSC Drive Level vs. Rd ohm ref. curve

4. Crystal PCB Layout Example



5. PI6C49S1510 PCB Board Example

