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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sierra Circuits, Inc.**  1108 West Evelyn Ave., Sunnyvale, CA 94086, U.S.A.  Phone: 408-735-7137 Fax: 408-735-1408  Send RFQs to: files@protoexpress.com  www.ProtoExpress.com | | | | | | | | |  | | | | **Quotation**  **Quote Number:   Q219234-5**  **Quote Date:**Apr 10th, 2014  **Quote Valid Till:**May 10th, 2014 | | | | | | | |
| **Customer**  **UCSD/ Cornell**  **Payment Terms:** Net Credit Approved | | | | | | **Address:** : 323 Rhodes Hall, Ithaca, NY 14853 | | | **Buyer: Michael Taylor & Christopher Batten** | | | | | | | | **Account Manager : Justin Blakely**  **Phone:** 408 735-7137 x 9910  **Email:** justinb@protoexpress.com  **Fax:** 408-735-1408 | | | | |
|  | | | | | |
| **PART NUMBER:** UCSD001-BGA**REV:** 1.0 | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | |
| **Quote Line Item** | **Quantity** | | | | **Turn Time** | | | **Price** | | **NRE** | | | | **Testing** | | | | **Other** | **Line Total** | | |
| **Q219234-5A**  **PCB Fabrication** | 250 Board(s) | | | | 15 Days | | | $17.40 Piece Price | | $0.00 (Tooling waived) | | | | $0.00 (Testing will be done, charges waived) | | | | $0.00 | **$4350.00** | | |
| **Notes:** | | | | | | | | | | | | | | | | | | | | | |
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|  | | | | | | | | | | | | | | | | | | | | | |
| **Layers** | | | **:** | 4 | | | **Indv Brd Dimensions** | | | | | **:** | 0.944 in **x** 0.944 in | | | **Array** | | | | **:** | No |
| **PCB Fabrication Spec** | | | **:** | IPC-600 Class 2 ## | | | **Dicing** | | | | | **:** | No | | | **Min Space (Outer layer)** | | | | **:** | 3.4 mil |
| **Material** | | | **:** | N5000 | | | **Milling** | | | | | **:** | None | | | **Min Trace (Inner layer)** | | | | **:** | + ve plane |
| **Finished Thickness** | | | **:** | 0.031 inches | | | **UL Required** | | | | | **:** | No | | | **Min Space (Inner layer)** | | | | **:** | + ve plane |
| **Thickness Tolerance** | | | **:** | Plus or Minus 10% | | | **ROHS compliant** | | | | | **:** | No | | | **Solder Mask Type** | | | | **:** | LPI |
| **Surface Finish** | | | **:** | Soft Bondable Gold | | | **Edge Plating** | | | | | **:** | No | | | **Solder Mask Sides** | | | | **:** | Top and Bottom |
| **Surface Finish 2** | | | **:** | None | | | **Electrical Test** | | | | | **:** | Yes | | | **Solder Mask Color** | | | | **:** | Green |
| **Gold Thickness** | | | **:** | Flash w/ build up to 30 uin min on the wire bond pads | | | **Controlled Impedance** | | | | | **:** | 10% tolerance | | | **Solder Mask Finish** | | | | **:** | Standard (Semi-Gloss) |
| **Gold Fingers** | | | **:** | No | | | **Target impedance specified** | | | | | **:** | Yes | | | **Solder Mask Via Opens** | | | | **:** | Covered on both sides |
| **Outer Layer Finish Copper** | | | **:** | vendor choice | | | **Multiple impedance on same layer** | | | | | **:** | Yes | | | **Carbon Ink** | | | | **:** | No |
| **Inner Copper** | | | **:** | 3 oz Inners | | | **Target line width specified** | | | | | **:** | Yes | | | **Logo Allowed** | | | | **:** | In copper only |
| **Gerbers provided?** | | | **:** | Yes | | | **Number of target layers** | | | | | **:** | 1 Layers | | | **Via in Pad** | | | | **:** | No |
| **Layer order provided?** | | | **:** | Yes | | | **Number of Single-ended Impedances** | | | | | **:** | 1 | | | **Filled Vias** | | | | **:** | None |
| **Board outline provided?** | | | **:** | Yes | | | **Number of Differential Impedances** | | | | | **:** | 1 | | | **SM Plugged Vias** | | | | **:** | No |
| **Drill file provided?** | | | **:** | Yes | | | **Controlled Dielectric** | | | | | **:** | No | | | **Minimum Drill to Copper distance** | | | | **:** | 0.0063 inches |
| **Fab drawing provided?** | | | **:** | Yes | | | **# of Holes Per Board** | | | | | **:** | 348 | | | **Socket/BGA Pitch** | | | | **:** | 1mm |
| **IPC Netlist Provided?** | | | **:** | No | | | **Minimum Hole Size** | | | | | **:** | 5.9 mil | | | **Blind vias** | | | | **:** | No |
| **Additional Customer Specification** | | | **:** | No | | | **Aspect ratio** | | | | | **:** |  | | | **Buried vias** | | | | **:** | No |
| **Assembly BOM Available ?** | | | **:** | No | | | **Minimum Annular Ring Width (Component Holes)** | | | | | **:** | None | | | **Controlled depth drilling** | | | | **:** | No |
| **Flex Board?** | | | **:** | No | | | **Internal Slots** | | | | | **:** | None | | | **Photo plots** | | | | **:** | No |
| **ITAR?** | | | **:** | No | | | **Internal Cutouts** | | | | | **:** | None | | | **Solderpaste Files for Customer** | | | | **:** | No |
| **Arrays need to be created by Sierra ?** | | | **:** | No | | | **Counter Sink** | | | | | **:** | No | | | **Cross Section certificate** | | | | **:** | No |
| **Individual Route** | | | **:** | Yes | | | **Counter Bore** | | | | | **:** | No | | | **Micro Section Coupon** | | | | **:** | No |
| **Route and Retain** | | | **:** | No | | | **Edge Plated Holes** | | | | | **:** | No | | | **Medical Application** | | | | **:** | No |
| **Scoring** | | | **:** | No | | | **Min Trace (Outer layer)** | | | | | **:** | 3.15 mil | | |  | | | |  |  |
| # Not sure due to missing information        ## Not sure due to discrepancy | | | | | | | | | | | | | | | | | | | | | |
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| PCB Fabrication Terms & Conditions:  1. Sale subject to limited warranty. Warranty extends only to bare PCBs and does not apply after components are added by you or others. Our liability shall not exceed price paid by you for the ordered PCBs. No change or addition to these terms, or any additional or different terms on your purchase order, shall be binding on us unless executed in writing by one of our officers. 2. If Sierra Circuits is assembling the boards then we will also warranty the Assembly Labor workmanship. 3. If IPC Netlist is not provided in 356 format, Sierra Circuits will create a net-list from the incoming customer Gerber files to generate an electrical test program. In such cases, Sierra cannot guarantee, nor can it be liable for the electrical performance of the boards, since the test program itself is derived from the files submitted. 4. If you are ordering our “Web PCBs” product, the selection you made online, and the product you chose online, takes priority over your fab drawing or readme notes. Example: Say you chose material FR4 online and your fab drawing calls for Rogers material, we will simply process your order using FR4 material. The price quoted online is based on the specifications and product you chose online. 5. Manufacturing Optimizations: As with most other PCB manufacturers, we may make simple optimizations to your design to ensure boards are manufactured correctly. Such changes do not affect the electrical functionality of your design. These may include:       A)   Teardrops may be added to pad/trace interfaces to ensure better connectivity.       B)   Slivers less than .005” may be filled in to prevent resist slivers on the panels.       C)   Soldermask dams that are less than .004” wide between SMD pads which have a .003” minimum clearance may be gang relieved.       D)   Silkscreen may be clipped to ensure it does not get on top of pads/copper features. | | | | | | | | | | | | | | | | | | | | | |
| **Please contact me if you have any questions about this quote.** | | | | | | | | | | | | | | | | | | | | | |
| **Best Regards,** | | | | | | | | | | | | | | | | | | | | | |
| **Justin Blakely** | | | | | | | | | | | | | | | | | | | | | |
| **Account Manager** | | | | | | | | | | | | | | | | | | | | | |
| **Sierra Circuits, Inc.** | | | | | | | | | | | | | | | | | | | | | |
| **Email: justinb@protoexpress.com** | | | | | | | | | | | | | | | | | | | | | |
| **Phone: 408 735-7137 x 9910** | | | | | | | | | | | | | | | | | | | | | |
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