

## LVDS ESD Performance

Table 1: Cross Reference of Applicable Products

| Product Name:                                | Manufacturer Part Number | SMD #      | Device Type    | Internal PIC           |
|--|--------------------------|------------|----------------|------------------------|
| 3.3V QUAD DRIVER                             | UT54LVDS031LV/E          | 5962-98651 | 02, 03, 04, 05 | WD03, WD07, WD28, WD30 |
| 3.3V QUAD RECEIVER                           | UT54LVDS032LV/E          | 5962-98652 | 02, 03, 04, 05 | WD04, WD08, WD29, WD31 |
| 3.3V QUAD RECEIVER with TERMINATION RESISTOR | UT54LVDS032LVT           | 5962-04201 | 01, 02         | WD06, WD10             |
| 3.3V BUS QUAD DRIVER                         | UT54LVDM031LV            | 5962-06201 | 01             | WD21                   |
| 3.3V DUAL DRIVER and RECEIVER                | UT54LVDM055LV            | 5962-06202 | 01             | WD22                   |
| 5.0V QUAD DRIVER                             | UT54LVDS031              | 5962-95833 | 02             | JR05, JR08             |
| 5.0V QUAD RECEIVER                           | UT54LVDS032              | 5962-95834 | 02             | JR06, JR09             |
| 5.0V QUAD DRIVER with COLD SPARE             | UT54LVDS031              | 5962-95833 | 03             | JR10                   |
| 5.0V QUAD RECEIVER with COLD SPARE           | UT54LVDS032              | 5962-95834 | 03             | JR11                   |
| 3.3V QUAD BUS LVDS CROSSPOINT SWITCH         | UT54LVDM228              | 5962-01537 | 01             | WD15, WD16             |
| 3.3V OCTAL BUS LVDS REPEATER                 | UT54LVDM328              | 5962-01536 | 01             | WD17, WD18             |
| 3.3V SERIALIZER                              | UT54LVDS217              | 5962-01534 | 01, 02         | WD11, WD13             |
| 3.3V DESERIALIZER                            | UT54LVDS218              | 5962-01535 | 01, 02         | WD12, WD14             |

### **1.0 Overview**

One of the primary concerns surrounding devices that provide off board interface capabilities is ESD sensitivity. Given these concerns Aeroflex Colorado Springs has identified the need to specify ESD performance on a pin-by-pin basis. The following Application Note summarizes the ESD performance on the various pin types available for each device in the LVDS Family.

### **2.0 ESD Performance Cross Reference**

Table 2 shows Aeroflex LVDS devices and their respective ESD performance. All Aeroflex Colorado Springs LVDS devices have ESD tests performed as part of Qualification. The ESD tests determine the classification of each device based on the worst performing pin on the part.

Table 2. Summary of ESD Performance for Aeroflex LVDS Devices

| Part Number              | Model | SMD        | Device Types   | LVDS Inputs | LVDS Outputs | CMOS Inputs | CMOS Outputs | PWR GND | Class |
|--------------------------|-------|------------|----------------|-------------|--------------|-------------|--------------|---------|-------|
| UT54LVDS031 <sup>3</sup> | HBM   | 5962-95833 | 03             | N/A         | 250V         | 6000V       | N/A          | 1000V   | 1A    |
| UT54LVDS032 <sup>3</sup> | HBM   | 5962-95834 | 03             | 250V        | N/A          | 1500V       | 1500V        | 1500V   | 1C    |
| UT54LVDS031              | HBM   | 5962-95833 | 02             | N/A         | 500V         | 6000V       | N/A          | 1000V   | 1B    |
| UT54LVDS032              | HBM   | 5962-95834 | 02             | 1500V       | N/A          | 1500V       | 1500V        | 1500V   | 1C    |
| UT54LVDS031LV/E          | HBM   | 5962-98651 | 02, 03, 04, 05 | N/A         | >8000V       | 1100V       | N/A          | >8000V  | 1C    |
| UT54LVDS032LV/E          | HBM   | 5962-98652 | 02, 03, 04, 05 | >8000V      | N/A          | 1200V       | 2750V        | >8000V  | 1C    |
| UT54LVDS228              | HBM   | 5962-01537 | 01             | 1200V       | 1200V        | 1200V       | 1200V        | 1200V   | 1C    |
| UT54LVDM328              | HBM   | 5962-01536 | 01             | 1200V       | 1200V        | 1200V       | 1200V        | 1200V   | 1C    |
| UT54LVDM031              | HBM   | 5962-06201 | 01             | N/A         | >8000V       | 1200V       | N/A          | >8000V  | 1C    |
| UT54LVDM055              | HBM   | 5962-06202 | 01             | >8000V      | >8000V       | 1200V       | 1200V        | >8000V  | 1C    |
| UT54LVDS217              | HBM   | 5962-01534 | 01, 02         | N/A         | 750V         | 750V        | 750V         | 750V    | 1B    |
| UT54LVDS218              | HBM   | 5962-01535 | 01, 02         | 1000V       | N/A          | 1000V       | 1000V        | 1000V   | 1C    |

Notes

<sup>1</sup> HBM =Human Body Model

<sup>2</sup> ESD levels based on the worst case pin. LVDS pins may be higher.

<sup>3</sup> Machine Model testing confirmed these devices are rated Class 0, these devices are not recommended for new designs.