3.3 Volt SCSI Termpwr

- **3,3 Volts TERMPWR Source.**
  - 3,3 Volts minus JEDEC tolerance is 3,0 Volts.
  - 3,3 Volt systems should connect to 5 Volt SCSI termpwr requiring a regulator for 2,7 to 5,25 Volt operation.
- **Unidirectional Circuit Breaker Required for less than 0,2 Volt drop.**
  - Section reference SPI 7.3 Add note Use a Unidirectional Circuit Breaker for 3,3 Volt systems.
  - Circuit Breaker Maximum drop, 0,2 Volts under full load
  - Cable drop 0,1 Volts with 1/2 load
  - Terminator regulator drop less than 0,2 Volts, all lines 24 mA load.
- **Change from SPI Table 7 (add) 3,3 Volt Single-ended 2,80 VDC Min 5,25 VDC Max 1000 mA for 8 Data bit buses.**
- **Change from SPI Table 7 (add) 3,3 Volt Single-ended 2,80 VDC Min 5,25 VDC Max 1500 mA for 16 Data bit buses.**

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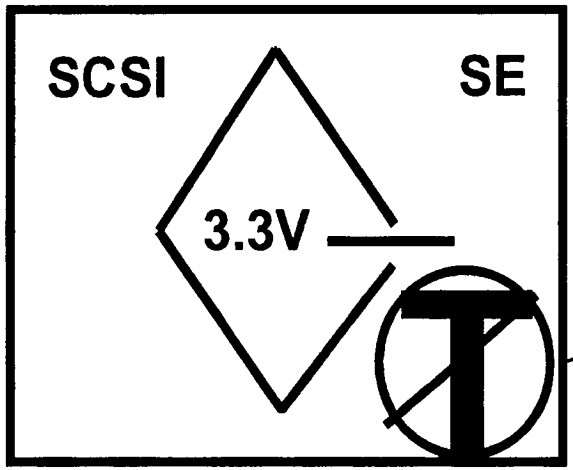
3.3 Volt Basics

- **3,3 Volt Requires 2,7 Volt terminators at the far end or power from an other device.**
  - **Standard termination requires at least 4,0 Volts.**
  - **Not all 3,3 Volt systems can provide adequate power for the terminators.**
  - **3,3 Volt Terminators must work to 5,25 Volts.**
  - **Addition Special Icons showing users the limitations instead of the symbols shown in SPI Annex H.**



Circle/Slash used when Termpwr is not adequate for the terminators.

Termination

- **Regulated Termination**
  - SCSI-3 SPI Maximum pull up current is 24 mA at 0,2V.
  - SCSI-3 SPI minimum pull up voltage is 2,5 Volts.
- **Battery systems often require TERMPWR to be supplied externally.**
  - Termpwr could be from a 5,25 Volt source, which requires all 3,3 Volt systems to run with 2,7 to 5,25 Volt TERMPWR.
- **Change from SPI section to 7.1.1 3.3 Volt Systems the terminators must regulate with TERMPWR from 2,7 VDC to 5,25 VDC**
- **The regulated terminators shall use source/sink regulators to reduce overshoot, high Active Negation Driver pull up voltage, and protect 3,3 Volt Logic.**
- **High voltage clamp to protect logic 3,6 Volts (AMD)**

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3.3 Volt Logic Issues

- **Maximum SPI-LV bus Voltage, ViH**
  - 3,6 Volts is the maximum recommended voltage for 3,3 Volt logic. The JEDEC standard is 3,3 Volts +/- 0,3 Volts.
  - Some controllers may require clamping when connected to 5 volt SCSI units that drive signal lines above 3,6 Volts.
- **Standard meet current standard levels except ViH maximum**
  - There is not problem using the standard thresholds for 3,3 Volt logic. 2,0 Volts is the maximum high Threshold.
  - Recommended termination reference voltage is 2,5 to 3,0 Volts.
  - Maximum pull up current with Termpwr from 2,7 to 5,25 Volts is 24 mA at 0,2 Volts.
  - Terminators shall not source current when the line is over 3,24 Volts.
  - Terminators shall sink current when the line is over 3,24 Volts, reducing overshoot. The terminator sink current shall not exceed 12 mA when the line is 3,5 Volts.

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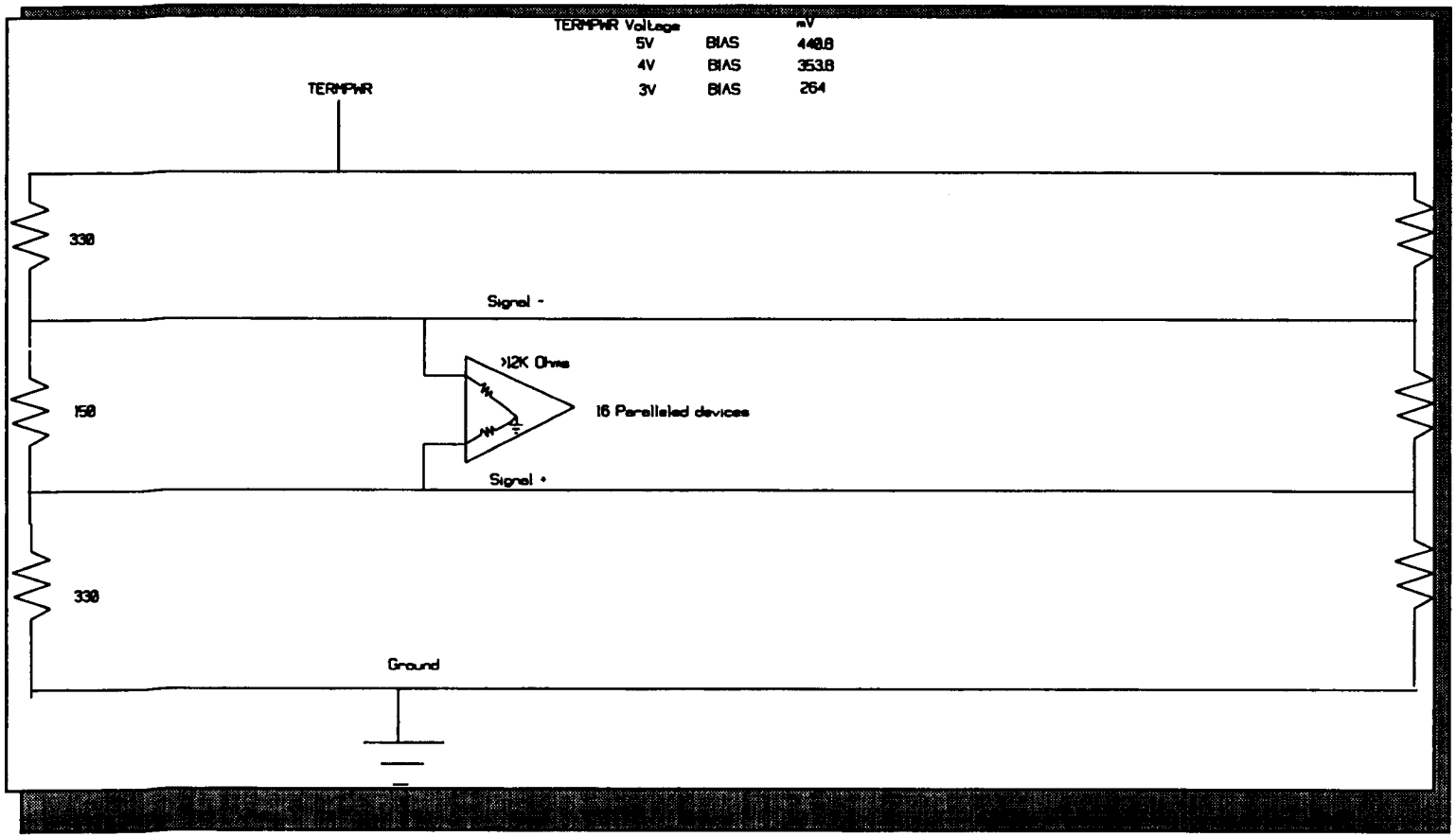
Differential Termination

- 3,3 Volt Differential Termination Works With Adequate Bias Voltage
  - TERMPWR = 5 Volts, Bias = 0,93 Volts
  - TERMPWR = 4 Volts, Bias = 0,735 Volts
  - TERMPWR = 3 Volts, Bias = 0,555 Volts
- Alternative Termination Should be defined
  - 0,5 to 1,0 Volt bias across 120 ohms
  - Common mode 120 ohms to a 2 volt bias point
- Alternate AC/DC Termination

Passive Differential Termination



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