Differences between the TPS54x40, TPS54x60 and the TPS54x40A, TPS54x60A

DC Solutions – CIADC

This document highlights the improvements made to the TPS54040, TPS54060, TPS54140, and TPS54160 in their A versions. The A version has an enhanced HBM ESD rating and a tighter enable threshold voltage. The tighter enable threshold in the A versions is also valid through the entire temperature range. This allows for a more predictable enable startup voltage across all operating conditions.

The parameters are detailed in Table 1 and Table 2. Other than these improvements, both versions have identical functionality. Please see the datasheets for further information on these ICs.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>TPS54040, TPS54060, TPS54140, TPS54160</th>
<th>TPS54040A, TPS54060A, TPS54140A, TPS54160A</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrostatic Discharge (HBM) QSS 009-105 (JESD22-A114A)</td>
<td>1</td>
<td>2</td>
<td>kV</td>
</tr>
</tbody>
</table>

Table 2. Improved Enable Threshold Voltage

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Part Number</th>
<th>Test Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable threshold voltage</td>
<td>TPS54040, TPS54060, TPS54140, TPS54160</td>
<td>25°C</td>
<td>0.9</td>
<td>1.25</td>
<td>1.55</td>
<td>V</td>
</tr>
<tr>
<td>Enable threshold voltage</td>
<td>TPS54040A, TPS54060A, TPS54140A, TPS54160A</td>
<td>-40°C to 150°C</td>
<td>1.11</td>
<td>1.25</td>
<td>1.36</td>
<td>V</td>
</tr>
</tbody>
</table>

References

1. TPS54040 Datasheet, 0.5-A, 42V Step Down SWIFT DC/DC Converter with Eco-Mode (SLVS918)
2. TPS54040A Datasheet, 0.5-A, 42V Step Down SWIFT DC/DC Converter with Eco-Mode (SLVSB58)
3. TPS54060 Datasheet, 0.5-A, 60V Step Down SWIFT DC/DC Converter with Eco-Mode (SLVS919)
4. TPS54060A Datasheet, 0.5-A, 60V Step Down SWIFT DC/DC Converter with Eco-Mode (SLVSB57)
5. TPS54140 Datasheet, 1.5-A, 42V Step Down SWIFT DC/DC Converter with Eco-Mode (SLVS889)
6. TPS54140A Datasheet, 1.5-A, 42V Step Down SWIFT DC/DC Converter with Eco-Mode (SLVSB55)
7. TPS54160 Datasheet, 1.5-A, 60V Step Down SWIFT DC/DC Converter with Eco-Mode (SLVS795)
8. TPS54160A Datasheet, 1.5-A, 60V Step Down SWIFT DC/DC Converter with Eco-Mode (SLVSB56)
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