Differences Between the TPS54340/360/540/560 and TPS54340B/360B/540B/560B for Q1 and Non-Q1 Devices

1 Trademarks

PowerPAD is a trademark of Texas Instruments.
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2 Introduction

This document highlights the improvements made to the TPS54340, TPS54360, TPS54540, and TPS54560 in their B versions. The TPS54340B, TPS54360B, TPS54540B, and TPS54560B from Texas Instruments are pin-to-pin drop in upgrade to the existing TPS54340, TPS54360, TPS54540, and TPS54560 buck converter family. The TPS54340B, TPS54360B, TPS54540B, and TPS54560B are available in an eight-terminal, thermally-enhanced HSOIC PowerPAD™ package, like the current generation TPS54340, TPS54360, TPS54540, and TPS54560.

As TI continues to innovate and improve its manufacturability and processes, the TPS54340B, TPS54360B, TPS54540B, and TPS54560B offer higher reliability and performance. Hence, TI recommends the TPS54340B, TPS54360B, TPS54540B, and TPS54560B for new designs to our customers in the industrial, automotive, and communications markets. TI also recommends to update the status of TPS54340, TPS54360, TPS54540, and TPS54560 to NRND (Not Recommended for New Designs). The status of the TPS54340, TPS54360, TPS54540, and TPS54560 will not be changed to EOL (End Of Life).

3 Differences - TPS54340 and TPS54340B (Q1 and Non-Q1)

The following are the differences between the TPS54340 and TPS54340B:

- Addition of Poly-Imide (PI) coat on the top layer of the IC

4 Differences - TPS54360 and TPS54360B (Q1 and Non-Q1)

The following are the differences between the TPS54360 and TPS54360B:

- Addition of Poly-Imide (PI) coat on the top layer of the IC

5 Differences - TPS54540 and TPS54540B (Q1 and Non-Q1)

The following are the differences between the TPS54540 and TPS54540B:

- Addition of Poly-Imide (PI) coat on top layer of the IC
- Increased reliability: Improved output OVP (overvoltage) circuit for high load transients (5 A to 0 A) at greater than 800 kHz switching frequency
- Increased current limit: 7.5 A to 7.9 A (typical), 8.8 A to 9.5 A (maximum)

6 Differences - TPS54560 and TPS54560B (Q1 and non-Q1)

The following are the differences between the TPS54560 and TPS54560B:

- Addition of Poly-Imide (PI) coat on the top layer of the IC
- Increased reliability: Improved output OVP (overvoltage) circuit for high load transients (5 A to 0 A) at greater than 800 kHz switching frequency
- Increased current limit: 7.5 A to 7.9 A (typical), 8.8 A to 9.5 A (maximum)

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7 References

- Texas Instruments, *TPS54340B 42-V Input, 3.5-A, Step-Down DC/DC Converter With Eco-Mode™ Data Sheet*
- Texas Instruments, *TPS54360B 60-V Input, 3.5-A, Step-Down DC/DC Converter With Eco-Mode™ Data Sheet*
- Texas Instruments, *TPS54540B 4.5-V to 42-V Input, 5-A step-down dc/dc converter with Eco-mode™ Data Sheet*
- Texas Instruments, *TPS54560B 4.5-V to 60-V Input, 5-A step-down dc/dc converter with Eco-mode™ Data Sheet*
- Texas Instruments, *TPS54340B-Q1 4.5-V to 42-V Input, 3.5-A, Step-Down DC-DC Converter With Eco-Mode™ Data Sheet*
- Texas Instruments, *TPS54360B-Q1 60 V Input, 3.5 A, Step Down DC-DC Converter with Eco-mode™ Data Sheet*
- Texas Instruments, *TPS54540B-Q1 4.5-V to 42-V Input, 5-A, Step-Down DC-DC Converter With Eco-mode™ Data Sheet*
- Texas Instruments, *TPS54560B-Q1 4.5 V to 60 V Input, 5 A, Step Down DC-DC Converter with Eco-mode™ Data Sheet*

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