



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20240424000.1
Datasheet for TPS5410, TPS5420, TPS543x
Change Notification

Date: April 24, 2024
To:

Dear Customer:

This is a notice of change to a product data sheet for a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

We request you acknowledge receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance and approval of this change. If samples or additional data are required, requests must be received within **30 days** of this notification.

The proposed first ship date is indicated on page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the Change Management team.

Sincerely,

Change Management Team
SC Business Services

20240424000.1
Data Sheet Change Notification
Attachments

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, you have recently purchased these devices. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
TPS5410D	NULL
TPS5410DG4	NULL
TPS5410DRG4	NULL
TPS5420DG4	NULL
TPS5420DRG4	NULL
TPS5430DDAG4	NULL
TPS5430DDARG4	NULL

Technical details of this Product Change follow on the next page(s).

PCN Number:	20240424000.1		PCN Date:	April 24, 2024																								
Title:	Datasheet for TPS5410, TPS5420, TPS543x																											
Customer Contact:	Change Management team	Dept:	Quality Services																									
Proposed 1st Ship Date:	July 23, 2024																											
Change Type:																												
☐	Assembly Site	☐	Design	☐																								
☐	Assembly Process	☒	Data Sheet	☐																								
☐	Assembly Materials	☐	Part number change	☐																								
☐	Mechanical Specification	☐	Test Site	☐																								
☐	Packing/Shipping/Labeling	☐	Test Process	☐																								
PCN Details																												
Description of Change:																												
The product datasheet(s) is being updated as summarized below. The following change history provides further details.																												
 TEXAS INSTRUMENTS TPS5410 SLVS675E – AUGUST 2006 – REVISED JANUARY 2024 <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Changes from Revision D (November 2014) to Revision E (January 2024)</th> <th style="text-align: right;">Page</th> </tr> </thead> <tbody> <tr> <td>• Updated the numbering format for tables, figures, and cross-references throughout the document.....</td> <td style="text-align: right;">1</td> </tr> <tr> <td>• Updated to new format which does not include specific parameter names and does include min and max columns; TJ called out in header Pin names are used rather than signal names; BOOT and PH voltages now marked as output voltage; Footnotes updated and Note 2 removed.....</td> <td style="text-align: right;">3</td> </tr> <tr> <td>• Changed BOOT to PH Absolute Maximum to 6 V maximum.....</td> <td style="text-align: right;">3</td> </tr> <tr> <td>• Changed CDM ESD to ±750 V.....</td> <td style="text-align: right;">4</td> </tr> <tr> <td>• Added Recommended operating V_I input voltage.....</td> <td style="text-align: right;">4</td> </tr> <tr> <td>• Updated footnotes to match current TI standards, replaced custom board specifications with EVM information and JEDEC standard information.....</td> <td style="text-align: right;">4</td> </tr> <tr> <td>• Changed R_{θJC(top)}, R_{θJB}, ψ_{JT}, ψ_{JB}</td> <td style="text-align: right;">4</td> </tr> <tr> <td>• Added condition for typical specifications EC table's header, added parameter names, and used pin names in parameter descriptions. Footnote added.....</td> <td style="text-align: right;">4</td> </tr> <tr> <td>• Updated the following test conditions: V_{FB}, D_{MAX}, and R_{DSON(HS)}.....</td> <td style="text-align: right;">4</td> </tr> <tr> <td>• Updated the following typical specifications in the EC table: I_{Q(VIN)}, I_{SD(VIN)}, V_{INUVLO(H)}, V_{EN(H)}, and R_{DSON(HS)}.....</td> <td style="text-align: right;">4</td> </tr> <tr> <td>• Updated typical and maximum ISH(OC) in the EC table.....</td> <td style="text-align: right;">4</td> </tr> </tbody> </table>					Changes from Revision D (November 2014) to Revision E (January 2024)	Page	• Updated the numbering format for tables, figures, and cross-references throughout the document.....	1	• Updated to new format which does not include specific parameter names and does include min and max columns; TJ called out in header Pin names are used rather than signal names; BOOT and PH voltages now marked as output voltage; Footnotes updated and Note 2 removed.....	3	• Changed BOOT to PH Absolute Maximum to 6 V maximum.....	3	• Changed CDM ESD to ±750 V.....	4	• Added Recommended operating V _I input voltage.....	4	• Updated footnotes to match current TI standards, replaced custom board specifications with EVM information and JEDEC standard information.....	4	• Changed R _{θJC(top)} , R _{θJB} , ψ _{JT} , ψ _{JB}	4	• Added condition for typical specifications EC table's header, added parameter names, and used pin names in parameter descriptions. Footnote added.....	4	• Updated the following test conditions: V _{FB} , D _{MAX} , and R _{DSON(HS)}	4	• Updated the following typical specifications in the EC table: I _{Q(VIN)} , I _{SD(VIN)} , V _{INUVLO(H)} , V _{EN(H)} , and R _{DSON(HS)}	4	• Updated typical and maximum ISH(OC) in the EC table.....	4
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 TEXAS INSTRUMENTS TPS5420 SLVS642F – APRIL 2006 – REVISED JANUARY 2024																												

Changes from Revision E (September 2013) to Revision F (January 2024)	Page
Updated the numbering format for tables, figures, and cross-references throughout the document.....	1
Updated to new format which does not include specific parameter names and does include min and max columns. TJ called out in header. Pin names are used rather than signal names. BOOT and PH voltages now marked as output voltage. Footnotes updated and Note 2 removed.....	5
Changed BOOT to PH Absolute Maximum to 6 V maximum.....	5
Deleted Absolute Maximum BOOT to GND maximum voltage.....	5
Added ESD table.....	5
Added Recommended operating V_I input voltage.....	5
Updated footnotes to match current TI standards, replaced custom board specifications with EVM information and JEDEC standard information.....	5
Changed $R_{\theta JC(top)}$, $R_{\theta JB}$, ψ_{JT} , ψ_{JB}	5
Added condition for typical specifications EC table's header, added parameter names, and used pin names in parameter descriptions. Footnote added.....	6
Updated the following test conditions: V_{FB} , D_{MAX} , and $R_{DS(ON)(HS)}$	6
Updated the following typical specifications in the EC table: $I_{Q(VIN)}$, $I_{SD(VIN)}$, $V_{INUVLO(H)}$, $V_{EN(H)}$, and $R_{DS(ON)(HS)}$	6



TPS5430, TPS5431

SLVS632K – JANUARY 2006 – REVISED JANUARY 2024

Changes from Revision J (July 2022) to Revision K (January 2024)	Page
Updated WEBENCH® links throughout the data sheet. Added "integrated circuit" when the PowerPAD™ package is mentioned. Changed MOSFET resistance 110mΩ to 100mΩ. Changed I_Q from 18μA to 15μA.....	1
Changed Pin Configuration figure title to "DDA Package 8-Pin SOIC with Thermal Pad Top View" and repositioned the title to the correct position. Changed "PowerPAD" to "DAP".	3
Updated Absolute Maximum Ratings table to new format which does not include specific parameter names and does include min and max columns. TJ called out in header. Pin names are used rather than signal names. BOOT and PH voltages now marked as output voltage. Updated footnotes and removed Note 2.....	4
Changed BOOT to PH Absolute Maximum from 10 V to 6 V.....	4
Changed PH to GND Absolute Maximum (transient < 10 ns) from -4 V to -1.2 V.....	4
Changed CDM ESD from ±1500 V to ±750 V.....	4
Changed recommended operating " V_I " to "input voltage".....	4
Updated thermal information footnotes to match current TI standards which include JEDEC standard information. Changed custom board information to EVM $R_{\theta JA}$ information.....	4
Changed $R_{\theta JC(top)}$ from 46.4 to 46, $R_{\theta JB}$ from 20.8 to 15, ψ_{JT} from 4.9 to 5.2, ψ_{JB} from 20.7 to 15.3, and $R_{\theta JC(bot)}$ from 0.8 to 6.....	4
Added condition for typical specifications EC table's header, added parameter names, and used pin names in parameter descriptions. Footnote added.....	5
Changed test condition for V_{FB} from " $I_Q = 0$ A to 3 A" to " $T_J = -40^{\circ}\text{C}$ to 125°C ", Changed $r_{DS(ON)}$ to $R_{DS(ON)(HS)}$ and test condition to for $R_{DS(ON)(HS)}$ from " $V_{IN} = 5.5$ V" to " $V_{IN} = 5.5$ V, $V_{BOOT-SW} = 4.0$ V".....	5
Changed the name of I_Q to $I_{SD(VIN)}$ if ENA is low and $I_{Q(VIN)}$ if the chip is active.....	5
Added test condition for D_{MAX} , " $f_{SW} = 500$ kHz" and for second $R_{DS(ON)(HS)}$ spec " $V_{IN} = 12$ V, $V_{BOOT-SW} = 4.5$ V".....	5
Changed $I_{Q(VIN)}$ typical from 3 mA to 2 mA, $I_{SD(VIN)}$ typical from 18 μA to 15 μA, $V_{INUVLO(H)}$ from 330 mV to 0.35 V, and $V_{EN(H)}$ from 450 mV to 325 mV.....	5
Changed $R_{DS(ON)}$ with $V_{IN} = 5$ V typical from 150 mΩ to 125 mΩ and with $V_{IN} = 12$ V from 110 mΩ to 100 mΩ.....	5
Changed "110-mΩ high-side MOSFET" to "100-mΩ high-side MOSFET" and 18 μA to 15 μA in <i>Overview</i>	8
Changed shutdown current from 18 μA to 15 μA in <i>Enable (ENA) and Internal Slow Start</i> section.....	9
Changed UVLO hysteresis from 330 mV to 350 mV in UVLO description.....	9
Changed "PwPd" to "DAP" on the TPS5430DDA package drawing in Figure 7-1 and "exposed PowerPAD™" to DAP in circuit description	13
Changed "PwPd" to "DAP" on the TPS5430DDA package drawing in Figure 7-9	21
Changed "PwPd" to "DAP" on the TPS5431DDA package drawing in Figure 7-10	22
Changed "PwPd" to "DAP" on the TPS5430DDA package drawing in Figure 7-11	23
Changed "PowerPAD" to "DAP" in <i>Layout Guidelines</i>	25

The datasheet number will be changing.

Device Family	Change From:	Change To:
TPS5410	SLVS675D	SLVS675E
TPS5420	SLVS642E	SLVS642F
TPS543x	SLVS632J	SLVS632K

These changes may be reviewed at the datasheet links provided.

<http://www.ti.com/product/TPS5410>

<http://www.ti.com/product/TPS5420>

<http://www.ti.com/product/TPS5430>

Reason for Change:

To more accurately reflect device characteristics.

Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):

Electrical specification performance changes as indicated above.

Changes to product identification resulting from this PCN:

None.

Product Affected:

TPS5410DRG4	TPS5410D	TPS5410DG4	TPS5410DR
TPS5420DR	TPS5420DRG4	TPS5420D	TPS5420DG4
TPS5430DDAG4	TPS5430DDAR	TPS5430DDARG4	TPS5430DDA
TPS5431DDAG4	TPS5431DDAR	TPS5431DDARG4	TPS5431DDA

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