



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN# 20141203000
TPS2592AA/B/Z Datasheet change
Information Only Datasheet**

Date: 12/4/2014
To: Newark/Farnell PCN

Dear Customer:

This is an information-only announcement of a change to a device that is currently offered by Texas Instruments.

The changes discussed within this PCN are for your information only.

Any negotiated alternative change requirements will be provided via the customer's defined process. Customers with previously negotiated, special requirements will be handled separately. Any inquiries should be directed to your local Field Sales Representative.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Manager (PCN_ww_admin_team@list.ti.com).

Sincerely,

PCN Team
SC Business Services
Phone: +1(214) 480-6037
Fax: +1(214) 480-6659

20141203000
Information Only Datasheet
Attachments

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
TPS2592AADRCT	null
TPS2592ALDRCT	null
TPS2592BLDRCT	null

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

PCN Number:	20141203000	PCN Date:	12/04/2014
Title:	TPS2592AA/B/Z Datasheet change		
Customer Contact:	PCN Manager	Phone:	+1(214) 480-6037
Dept:	Quality Services		
Change Type:			
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design
<input type="checkbox"/>	Assembly Process	<input checked="" type="checkbox"/>	Data Sheet
<input type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Site
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Material
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Process
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Site
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Materials
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments Incorporated is announcing an information only notification, etc.

The product datasheet(s) is being updated to Split the datasheet into A, B, Z versions and reduce the current limit ranges.

The datasheet number will be changing.

Device Family	Change From:	Change To:
TPS2592AA/AL	SLVSC11B	SLVSC11C
TPS2592BA/BL	SLVSC11B	SLVSCU2
TPS2592ZA/ZL	SLVSC11B	SLVSCU3

These changes may be reviewed at the datasheet links provided.

<http://www.ti.com/product/tps2592aa?qqpn=tps2592aa>

<http://www.ti.com/product/tps2592ba?qqpn=tps2592ba>

<http://www.ti.com/product/tps2592za?qqpn=tps2592za>

The following section provides further details on specification changes.



TPS2592AA, TPS2592AL

SLVSC11C – JUNE 2013 – REVISED DECEMBER 2014

www.ti.com

Primary Spec Changes from Revision B (2013) to Revision C

Page

- Added Maximum power dissipation in Absolute Maximum Ratings..... 5

		MIN	MAX	UNIT
Maximum power dissipation ⁽³⁾ , P _D = (V _{IN} – V _{OUT}) x I _{OUT}	T _A = -40°C to +85°C		40	W
	T _A = 0°C to +85°C		50	

(3) Refer detailed explanation in the application section [Maximum Device Power Dissipation Considerations](#)

Change From: (page 3)

- Changed Continuous output current and Change Resistance values.....3

		MIN	TYP	MAX	UNIT
Continuous output current	I _{OUT}	0		5	A
Resistance	ILIM	40.2	100	162	kΩ

Change To: (page 5)

- Changed Continuous output current and Change Resistance values.....5

		MIN	TYP	MAX	UNIT
Continuous output current	I _{OUT}	T _A = -40°C to +85°C	0	2.8	A
		T _A = 0°C to +85°C	0	3.4	
Resistance	ILIM	T _A = -40°C to +85°C	10	80.6	kΩ
		T _A = 0°C to +85°C	10	100	

Updated (page 23)

10.3 Maximum Device Power Dissipation Considerations

To prevent damage to the TPS2592x, it is necessary to keep internal power dissipation (P_D) below the levels specified in below Table. The power dissipation is defined as (P_D = (V_{IN} – V_{OUT}) x I_{OUT}).

During normal operation P_D is low (typically < ½ Watt) because the FET is fully on with low (V_{IN} – V_{OUT}). However, during short circuit and surge protection the FET may be only partially on and (V_{IN} – V_{OUT}) can be high.

Example 1: Short Circuit on Output → VIN = 12 V, I_{LIMIT} = 3 A. T_J = -40°C

- P_D = 12 V x 3 A = 36 W
- OK → (P_D = 36 W) < (P_{D_MAX} = 40 W)

Example 2: Short Circuit on Output → VIN = 13.2 V, I_{LIMIT} = 3.7 A

- P_D = 13.2 V x 3.7 A = 49 W
- OK at T_J = 0°C → (P_D = 49 W) < (P_{D_MAX} at 0°C = 50 W)
- NOT OK at T_J = -40°C → (P_D = 51 W) > (P_{D_MAX} at -40°C = 40 W)

Example 3: Surge Clamp VIN = 12 V, I_{LIMIT} = 3 A. T_J = 0°C, V_{SURGE} = 19 V, V_{CLAMP} = 15 V

- P_D = (19 – 15) x 3 A = 12 Watt
- OK at 0°C → (PD = 12 W) < (PD_MAX at 0°C = 50 W)

5 Revision History

DATE	REVISION	NOTES
December 2014	*	Initial release

Primary Spec Changes

Page

- Added Maximum power dissipation in Absolute Maximum Ratings..... **5**

	MIN	MAX	UNIT
Maximum power dissipation ⁽³⁾ , P_D		40	W
$= (V_{IN} - V_{OUT}) \times I_{OUT}$	$T_A = -40^\circ\text{C to } +85^\circ\text{C}$	50	

(3) Refer detailed explanation in the application section [Maximum Device Power Dissipation Considerations](#)

Updated (page 23)

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To prevent damage to the TPS2592x, it is necessary to keep internal power dissipation (P_D) below the levels specified in below Table. The power dissipation is defined as ($P_D = (V_{IN} - V_{OUT}) \times I_{OUT}$).

During normal operation P_D is low (typically $< \frac{1}{2}$ Watt) because the FET is fully on with low ($V_{IN} - V_{OUT}$). However, during short circuit and surge protection the FET may be only partially on and ($V_{IN} - V_{OUT}$) can be high.

Example 1: Short Circuit on Output → $V_{IN} = 12\text{ V}$, $I_{LIMIT} = 3\text{ A}$. $T_J = -40^\circ\text{C}$

- $P_D = 12\text{ V} \times 3\text{ A} = 36\text{ W}$
- OK → ($P_D = 36\text{ W}$) $<$ ($P_{D_MAX} = 40\text{ W}$)

Example 2: Short Circuit on Output → $V_{IN} = 13.2\text{ V}$, $I_{LIMIT} = 3.7\text{ A}$

- $P_D = 13.2\text{ V} \times 3.7\text{ A} = 49\text{ W}$
- OK at $T_J = 0^\circ\text{C}$ → ($P_D = 49\text{ W}$) $<$ (P_{D_MAX} at $0^\circ\text{C} = 50\text{ W}$)
- NOT OK at $T_J = -40^\circ\text{C}$ → ($P_D = 51\text{ W}$) $>$ (P_{D_MAX} at $-40^\circ\text{C} = 40\text{ W}$)

Example 3: Surge Clamp $V_{IN} = 12\text{ V}$, $I_{LIMIT} = 3\text{ A}$. $T_J = 0^\circ\text{C}$, $V_{SURGE} = 19\text{ V}$, $V_{CLAMP} = 15\text{ V}$

- $P_D = (19 - 15) \times 3\text{ A} = 12\text{ Watt}$
- OK at 0°C → ($P_D = 12\text{ W}$) $<$ (P_{D_MAX} at $0^\circ\text{C} = 50\text{ W}$)

5 Revision History

DATE	REVISION	NOTES
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Primary Spec Changes

Page

- Added Maximum power dissipation in Absolute Maximum Ratings..... 5

	MIN	MAX	UNIT
Maximum power dissipation ⁽³⁾ , P _D = (V _{IN} – V _{OUT}) x I _{OUT}	T _A = -40°C to +85 °C	40	W
	T _A = 0°C to +85 °C	50	

(3) Refer detailed explanation in the application section [Maximum Device Power Dissipation Considerations](#)

Updated (page 23)

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- P_D = 12 V x 3 A = 36 W
- OK → (P_D = 36 W) < (P_{D_MAX} = 40 W)

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Example 3: Surge Clamp V_{IN} = 12 V, I_{LIMIT} = 3 A. T_J = 0°C, V_{SURGE} = 19 V, V_{CLAMP} = 15 V

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Change From: (page 3)

- Changed Continuous output current and Change Resistance values.....3

	MIN	TYP	MAX	UNIT
Continuous output current I _{OUT}	0		5	A
Resistance I _{LIM}	40.2	100	162	kΩ

Change To: (page 4)

- Changed Continuous output current and Change Resistance value..... 4

	MIN	TYP	MAX	UNIT
Continuous output current I _{OUT}	0		1.7	A
Resistance I _{LIM}	10		45.3	kΩ

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:			
TPS2592AADRCR	TPS2592ALDRCT	TPS2592BLDRCR	TPS2592ZADRCT
TPS2592AADRCT	TPS2592BADRCR	TPS2592BLDRCT	
TPS2592ALDRCR	TPS2592BADRCT	TPS2592ZADRRCR	

For questions regarding this notice, e-mails can be sent to the regional contacts shown below or your local Field Sales Representative.

Location	E-Mail
USA	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com