Title: Datasheet for TPS65381-Q1  Customer Contact: PCN Manager Dept: Quality Services  Change Type:  Assembly Site Design Wafer Bump Site Assembly Process Data Sheet Wafer Bump Material Assembly Materials Part number change Wafer Bump Process Mechanical Specification Test Site Wafer Fab Site Packing/Shipping/Labeling Test Process Wafer Fab Materials  Description of Change:  Texas Instruments Incorporated is announcing an information only notification.  The product datasheet(s) is being updated as summarized below.  The following change history provides further details.  Changes from Revision F (May 2016) to Revision G Page  Changed the Features list for Supply rails to show output current instead of current limit. Added general current limit bullet in the FEATURES list 1  Added acronym definitions 1  Changed the Order of Change History provides to Starty device operation 2  Changed the Distortion table descriptions to clarify device operation 2  Changed the max value for the charge-pump voltages from 52 V to lesser of VBATP + 16V or 52 V with football in the Recounter and the charge-pump voltages from 52 V to lesser of VBATP + 16V or 52 V with football in the Recounter and the charge-pump voltages from 52 V to lesser of VBATP + 16V or 52 V with					
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Conditions table     Changed the PIN Function table descriptions to clarify device operation					
<ul> <li>Changed the PIN Function table descriptions to clarify device operation</li></ul>					
<ul> <li>Changed the max value for the charge-pump voltages from 52 V to lesser of VBATP + 16V or 52 V with</li> </ul>					
footnote in the ABSOLUTE MAXIMUM RATINGS table					
<ul> <li>Changed M1.12 and M1.13 Sensor supply feedback and supply voltage by combining in M1.12 with conditions</li> </ul>					
of use for the Sensor supply output and feedback voltage to match how the sensor supply is used. Changed the					
maximum to 18 V in the ABSOLUTE MAXIMUM RATINGS table					
table					
Changed the table note for Absolute Maximum Ratings					
Changed changed recommended operating condition descriptions for R1.1, R1.2 and R1.3 to make the					
operation of device more clear in the Recommended Operating Conditions					
<ul> <li>Deleted recommended operating condition R1.3a and R1.3b, VBAT_SAFING impact to device operation was included in R1.2 and R1.3 to make the operation of device more clear in the Recommended Operating Conditions 30</li> </ul>					
Changed link formats throughout document					
Changed link formats throughout document     Changed recommended maximum voltage for VBATP and VBAT_SAFING in the Recommended Operating					
Conditions table					
Conditions table					
Conditions table					
Conditions table					
Conditions table     Changed the Thermal Metric table and Derating Profile for Power Dissipation Based on High-K JEDEC PCB in the Thermal Information section.      Changed application report link					

	Switching Characteristics sections	32
	Changed VDD6, POS 1.1 to only volts as units for consistency in the ELECTRICAL CHARACTERISTICS table	
	Deleted Hysteresis parameter from Tprot <sub>VDD8</sub> (POS 1.7) in the <i>ELECTRICAL CHARACTERISTICS</i> table	
	Changed VDD5, POS 2.1 to only volts as units for consistency in the ELECTRICAL CHARACTERISTICS table	
	Changed POS 2.3 test condition to Load step 20% to 80% in 5 $\mu$ s, with C <sub>VDD5</sub> = 5 $\mu$ F for VDD5 output voltage	02
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•	Deleted Hysteresis parameter from Tprot <sub>VDD5</sub> (POS 2.13) in the <i>ELECTRICAL CHARACTERISTICS</i> table	
•	Changed all references of VDD3_5 to VDD3/5 for consistency in the datasheet	32
•	Added clarification on VDD6 current limit and duty cycle in the Electrical Characteristics section	<u>32</u>
•	Added clarification on I <sub>VDD5_limit</sub> current limit in the <i>Electrical Characteristics</i> section	32
•	Changed VDD3/5, POS 3.1 to only volts as units for consistency in the ELECTRICAL CHARACTERISTICS table	33
•	Changed POS 3.3 into 3.3a for 3.3 V setting and 3.3v for 5 V setting for VDD3/5 output voltage dynamic	
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•	Changed POS 3.3a and 3.3b test condition to Load step 20% to 80% in 5 µs, with C <sub>VDD3/5</sub> = 5 µF for VDD3/5	_
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•	Changed VDD1dyn, POS 4.7, to typical due to dependency on external FET choice in the Electrical	
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•	Changed I <sub>VSOUT1_limit</sub> , POS 5.14 minimum from 100 mA to 120 mA in the <i>ELECTRICAL CHARACTERISTICS</i> table	
•	Added clarification on I <sub>VSOUT1</sub> load current and power dissipation in the <i>Electrical Characteristics</i> section	34
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	adding SEL_VDD3/5 pin to 10.1 and 10.2 in the ELECTRICAL CHARACTERISTICS table	
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•	Changed VBATP_deglitch minimum from 200 μs to 180 μs and maximum from 280 μs to 260 μs in the <i>Timing</i>	
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•	Changed the description of VDD5_OT in the Internal Error Signals table for clarity	<u>50</u>
•	Changed the VMON_TRIM_ERR deglitch time minimum from 15 to 5 μs and maximum from 30 to 10 μs in the	
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•	Changed NRST_EXT_IN to NRES_EXT_IN for consistency with pin name	
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	Added clarify to the PIN Function table descriptions  Added clarification in Recommended Operating Conditions that GND = PGND  Changed (¹¹maximum VBAT_SAFING to 36 V in the Recommended Operating Conditions table for parameter 1.3a to be consistent with VBATP  Added VBAT_SAFING input supply voltage range for normal operation RECOMMENDED OPERATING CONDITIONS table  Added clarification in statement for the ELECTRICAL CHARACTERISTICS table by adding VBAT_SAFING recommended operating range in addition to VBATP recommended operating range	30 30 30 32 32 32 32 32 34 34 34 34 35 35 35 35 36
(1)	Added clarification in statement for the <i>Timing Requirements</i> table by adding VBAT_SAFING recommended	36 tion nabled,

•	Changed description of parameter from Test Condition column to a footnote on the parameter in the <i>Timing</i>	
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•	Changed to clarify IGNITION and CAN WAKE-UP parameters (7.6 and 7.9) in TIMING REQUIREMENTS table	36
•	Added clarification in statement for the Switching Characteristics table by adding VBAT_SAFING recommended operating range in addition to VBATP recommended operating range	27
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•	Changed the VDD6 UV bit to D6 from D7 in the Voltage Monitoring Overview table	
•	Changed the name for VSOUT1 current-limit to VSOUT1_CL in the Internal Error Signals table	50
•	Changed all references to the sensor supply to VSOUT1 for consistency	50
•	Changed to clarify ABIST functionality in the Analog Built-In Self-Test (ABIST) section	
•	Changed LBIST coverage in the Logic Built-In Self-Test (LBIST) section	
•	Changed to clarify LBIST functionality in the Logic Built-In Self-Test (LBIST) section	<u>53</u>
•	Changed the impact on device behavior for VSOUT1 thermal protect and over current in the <i>Thermal and Over</i>	
	Current Protect ion Overview table	
:	Changed and clarified Watchdog timer text in the Watchdog Timer (WDT) section	
	Changed the all references of ERROR/WDTI pin to ERROR/WDI pin for consistency	
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•	Added clarification of the impact of a bad event on the watchdog sequence in the <i>Trigger Mode Section</i> and	
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•	Added note to explain conditions leading to inadvert setting of SDO ERROR bit in the Device Status Flag Byte	
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•	Added clarification on reserved bits (RSV) in the Register Map section	
•	Changed DEV_STATE to DEV_STAT for Device Status in Register table for consistency	
:	Deleted VSOUT1_ILIM in the SAFETY_STAT_1 Register table and made bit D3 a reserved bit (RSV)	
:	Changed and clarified the WDT TOKEN FDBCK Register table	
:	Changed and clarified the WDT_WIN1_CFG Register table	
	Changed and clarified the WDT_WINY_OF G Register table  Changed and clarified the WDT_WIN2_CFG Register table	
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•	Added clarity for VBAT_SAFING in the Power Supply Recommendations section	129
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The	e datasheet number will be changing.	
	evice Family Change From: Change T	٠.

TPS65381-01	SLVSBC4E	SLVSBC4G
Device Family	Change From:	Change To:
	TPS65381-01	TDCCE201 O1 CLVCDC4F

These changes may be reviewed at the datasheet links provided.				
http://www.ti.com/product/TPS65381-Q1				
Reason for Change:				
To accurately represent the device characteristics.				
Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):				
No anticipated impact. This is a specification change announcement only.				
Changes to product ide	entification resulting	from this PCN:		
None.				
<b>Product Affected:</b>				
TPS65381QDAPRQ1				

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