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## TPS65168 Status: ACTIVE

High Resolution, Fully Programmable LCD Bias IC for TV

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## Datasheet


**TPS65168 Features** (PDF 13 KB)  
09 Sep 2010

	TPS65168
Vin(Min)(V)	8.6
Vin(Max)(V)	14.7
DC/DC Converter	4
Charge Pump	2
Pin/Package	40WQFN
Vlogic1 Ilim(Min)(A)	Buck, 2.6
Vlogic1(Min)(V)	3
Vlogic2 Ilim(Min)(A)	Buck, 1.1
Vlogic2(Min)(V)	0.9
VGH / Vpos (Igh)	Controller 34V max, ≥100mA
VGL / Vneg (Igl)	Controller -8.1V max, ≥ 100mA
Operating Temperature Range(°C)	-40 to 85
Switching Frequency(Typ)(kHz)	750
Over-Voltage Protection(Max)(V)	19.5
Regulated Outputs(#)	6
Isolation Switch	Integrated
Rating	Catalog
Special Function	HVDD, Temp. Comp, VGH, Programmable Outputs w/ Internal Memory
Target Application	TV, Monitor 12V
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## Product Information

### Features

8.6 to 14.7V Input Voltage Range  
 6-Bit Boost Converter  $V_{DD}$   
 Programmable Integrated Input-to-Output Isolation Switch  
 Programmable Buck Converter HVDD  
 Programmable Buck Converter  $V_{I/O}$   
 Programmable Buck Converter  $V_{CORE}$   
 Positive charge Pump Controller  $V_{GH}$   
 Temperature Compensation for  $V_{GH}$   
 Negative Charge Pump Controller  $V_{GL}$   
 Reset Signal With Programmable Reset Pulse Duration  
 Programmable Sequencing  
 Thermal Shutdown  
 APPLICATIONS  
 LCD TVs  
 LCD monitors

### Description

The TPS65168 provides a simple and economic power supply solution for a wide variety of LCD bias applications. The device provides all supply rails needed by a TFT-LCD panel.  $V_{I/O}$ ,  $V_{CORE}$  and RST for the T-Con.  $V_{DD}$  and HVDD for the Source Driver and the Gamma Buffer.  $V_{GH}$  and  $V_{GL}$  for the Gate Driver or the Level Shifter. The  $V_{GH}$  voltage can be compensated for low and high adjustable temperatures, if GIP technology is used. The transition from one programmed  $V_{GH}$  value to another is made using an external thermistor connected to the IC. All output rails

and delay times are programmable by a Two-Wire interface: a single BOM can cover several panel types and sizes whose desired output levels can be programmed in production and stored in a non-volatile memory embedded into the TPS65168.

[View All Description in Datasheet](#)

## Pricing / Packaging / CAD Design Tools / Samples

			Price	Packaging		Samples
Device	Status	Temp (°C)	Price   Quantity	Package   Pins	Package QTY   Package Carrier	Samples
TPS65168RSBR	ACTIVE	-40 to 85	1.90   1ku	WQFN (RSB)   40	3000   LARGE T&R	<a href="#">Add Free Sample To Cart</a>


\* Suggested Resale Price per unit (USD) for BUDGETARY USE ONLY. For higher volume price quotes, prices in local currency or delivery quotes, please contact your local Texas Instruments Sales Office or [Authorized Distributor](#).

## Inventory

Reported Distributor Inventory as of 9:15 AM GMT, 26 Sep 2010			
Region	Company	In Stock	Purchase
TPS65168RSBR			
None Reported <a href="#">View Distributors</a>			
View all Distributors		Minnesota	<a href="#">Go</a>

Please contact your preferred [TI Authorized Distributor](#) or local TI sales office for lead times on full production quantities.

## Quality & Lead (Pb)-Free Data

	Product Content				DPPM / MTBF / FIT Rate
Device	Eco Plan*	Lead / Ball Finish	MSL Rating / Peak Reflow	Details	Details
TPS65168RSBR 	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	<a href="#">View</a>	<a href="#">View</a>

\* The planned eco-friendly classification: Pb-Free (RoHS) or Pb-Free (RoHS Exempt) or Green (RoHS & no Sb/Br) - please click on the Product Content Details "View" link in the table above for the latest availability information and additional product content details.

If the information you are requesting is not available online at this time, contact one of our [Product Information Centers](#) regarding the availability of this information.

## Technical Documents

### Datasheet

**TPS65168 Features** (PDF 13 KB)  
09 Sep 2010











## Related Products

Part #	Name	Product Family	Comments
<a href="#">BUF16821</a>	Programmable Gamma-Voltage Generator and Vcom Calibrator with Integrated Two-Bank Memory	PRECISION AMPLIFIER - LCD GAMMA BUFFER	TPS65168 supplies VDD output rail for BUF16821 and also VGH & VGL for TPS65194
<a href="#">TPS65194</a>	13 Channel Level Shifter for LCD TVs and Monitors	LIGHTING AND DISPLAY SOLUTIONS - LCD/OLED DISPLAY BIAS SOLUTIONS	TPS65168 supplies VDD output rail for BUF16821 and also VGH & VGL for TPS65194

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Topics	Replies	Views
 <b>TLC5947 Single Shot</b> Latest post by <a href="#">Brigitte</a> , 27 Sep 2010 2:46 AM	 9	84
 <b>TLC5927 - Maximum Driving Current for a LED Driver</b> Latest post by <a href="#">Nicolas Prieto Angueira</a> , 23 Sep 2010 2:55 PM	 2	42
 <b>TLC5916 - Output default turnon state?</b> Latest post by <a href="#">Dick Stacey</a> , 23 Sep 2010 12:18 PM	 1	29
 <b>TPS61500EVM-369 dimming</b> Latest post by <a href="#">Stephen Nortman</a> , 16 Sep 2010 1:55 PM	 9	201
 <b>Looking for some advice for 8x8 RGB Led matrix driver</b> Latest post by <a href="#">Brigitte</a> , 10 Sep 2010 7:12 AM	 3	116

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Posted: 17 Jun 2009  
Views: 1,180

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Posted to [Mobile Momentum](#) on 3 Sep 2010

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If you're designing an embedded computing platform using Intel's 2010 Atom Tunnel Creek processor there's good news in dealing with the complexity of the power design, and ensuring your power supplies are compliant to the Intel power specifications...

Posted to [Power House](#) on 26 Aug 2010

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### Total Power Solutions for Embedded Processing eTech Day - June 29, 2010

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### One Bright Day - Controlling LEDs with Microcontrollers - June 22nd, 2010

The industry debate on "if LEDs will be used for real world lighting applications" is over. The answer is an undeniable "Yes". The debate has shifted to "when". When will LED based light bulb replacements be affordable...

Posted to [Power House](#) on 21 Jun 2010

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Overall Rating

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