



1Q 2012

### Power Management Solutions for Altera's FPGAs and CPLDs

#### Stratix®, Arria®, Cyclone®, HardCopy® & HardCopy® and MAX™ Devices

	Input Voltage Range (V)			
	1.5 to 3.0	3.0 to 5.5	4.5 to 17	> 17
<200mA	TLV702xx TPS720xx TPS712xx LP8900	TLV702xx TPS712xx LP8900 LP5900	TLV704xx TPS7A1601 TPS7A45xx TPS62170	TLV704xx TPS7A1601 TPS54040 TPS54060
≤500mA	TPS720xx TPS7A7100 LP8900	TPS7A7100 TPS62290 TPS6223x LMZ10500	TPS62170 TPS62160 LMZ12001 LMZ14201	LM22671 TPS54040 TPS54060 LMZ14201
500 mA to 1.5 A	TPS7A7200 TPS7A7100 TPS7A8001	TPS62290 TPS62065 TPS54218 LMZ10501	TPS54294 TPS54320 TPS62140 LMZ12002	TPS54231 TPS54160 LM22680 LMZ14202
1.5 A to 3 A	TPS7A7200 TPS7A7300 TPS7A7001	TPS62065 TPS54318 PTH04070W TPS84410	TPS54320 TPS54327 TPS62130 LMZ12003	LM22673 TPS54331 TPS54260 LMZ14203
3 A to 6 A	LM1084 LM1085	TPS54418 TPS53321 TPS54618 TPS84621	TPS54521 TPS54622 TPS54821 TPS84621	LM22679 LM22677 LMZ13608 TPS40170
6 A to 10 A	—	LM21212 PTH04T240W TPS40040 TPS40305	TPS53315 TPS54020 TPS56121 PTH08T240W	LM22679 LM22677 LMZ13610 TPS40170
≥10 A to 16 A	—	LM21215 TPS53353 PTH04T220W TPS40322	TPS56221 PTH08T220W TPS40400 TPS40322	LMZ23610 TPS40061 TPS40170 LM3150
≥ 20 A	—	TPS53355 PTH05T210W TPS40322	TPS53355 PTH08T250W TPS40322 TPS40422	LMZ23610 TPS40140

**Color Code Key:**

Black = Low Dropout Regulators

Green = DC/DC Converters (Switchers with Integrated FETs)

Blue = Plug-In Power Modules

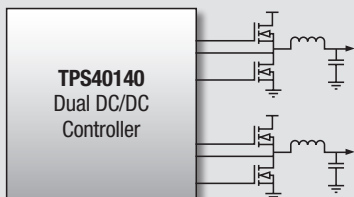
Red = DC/DC Controllers (External FETs)

For more information: [www.ti.com/alterafpga](http://www.ti.com/alterafpga) and [www.ti.com/processorpower](http://www.ti.com/processorpower)

For questions email: [fpgasupport@ti.com](mailto:fpgasupport@ti.com)

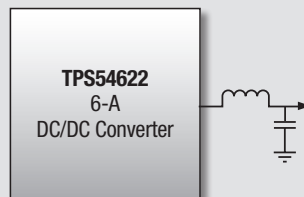
# Key TI Devices Powering Altera's FPGAs

## Dual-Stackable DC/DC Controller



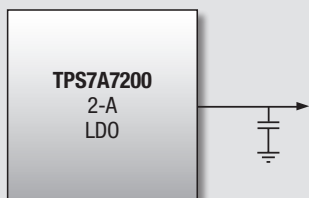
- Dual-output or 2-phase interleaved operation
- Wide input voltage range (4.5 V to 15 V)
- Stackable up to 16 phases up to 1 MHz per phase
- 10- $\mu$ A shutdown current

## DC/DC Converter with Integrated FETs



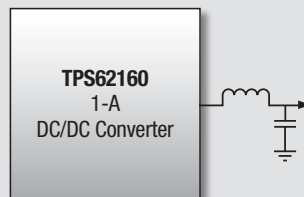
- Integrated FETs for small total solution
- Wide input voltage range (4.5 V to 17 V)
- Capable of 6-A continuous output current
- PWM adjustable up to 1.6 MHz for small inductor
- Small 3.5mm x 3.5mm QFN packaging

## Ultra-Low-Input Voltage LDO



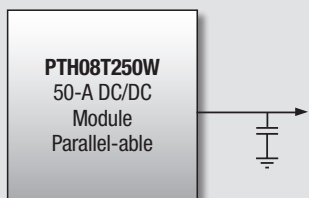
- Input and output range (0.5 V to 6.5 V)
- Low dropout: 200 mV @ 2 A
- High efficiency (>90% possible)
- Small 5 x 5mm QFN-20 packaging

## Low-Power DC/DC Converter with Integrated FETs



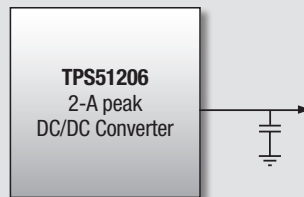
- Integrated FETs for small total solution
- Wide input voltage range (3 V to 17 V)
- Switching frequency is 2.25 MHz for small inductor
- Small 2mm x 2mm SON packaging

## Plug-In Power Module



- Wide input voltage (4.5 V to 14 V)
- No inductors required
- TurboTrans™ technology
- Smart sync
- 1.5% DC regulation
- Auto-Track™ sequencing

## DDR Termination LDO – 2 A Source-Sink



- Supports 2.5-V and 3.3-V input voltages
- Capable of 2-A continuous source/sink
- Supports DDR, DDR2, DDR3, and low-power DDR3/DDR4 VTT applications
- Small 2mm x 2mm SON packaging

For more information: [www.ti.com/alterafpga](http://www.ti.com/alterafpga) and [www.ti.com/processorpower](http://www.ti.com/processorpower)

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265  
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