



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

Stratix® III & IV, Cyclone® II & III, Arria® & Arria II, HardCopy® & HardCopy II, and MAX™ II Devices

	Input Voltage Range (V)			
	1.5 TO 2.5	2.5 TO 5.5	4.5 TO 17	> 17
≤200mA	TLV700xx TPS74201 TPS74701	TLV700xx TPS74201 TPS74701	TPS7A45xx TPS62110 TPS54060	TPS54060
≤500mA	TPS74201 TPS74701 TPS735xx	TPS74201 TPS74701 TPS735xx	TPS7A45xx TPS62110 TPS54060	TPS54060
500 mA TO 1.5 A	TPS74301 TPS74801	TPS62290 TPS62110 TPS54218	TPS62110 TPS54320 PTH08080W	TPS54160 PTN78000W
1.5 A TO 3 A	TPS74401 TPS74901	TPS54318 PTH04070W PTH04T260W	TPS54320 PTH08080W PTH08T260W	TPS54260 PTN78060W
3 A TO 6 A	—	TPS54418 TPS54618 PTH04T230W	TPS54620 PTH08T230W UCD9240	TPS40057 TPS40061
6 A TO 10 A	—	PTH04T240W TPS40040	PTH08T240W TPS40195 UCD9240	TPS40057 TPS40061
≥10 A TO 16 A	—	PTH04T220W TPS40040 TPS40131	PTH08T220W TPS40195 UCD9240	TPS40140 TPS40057 TPS40061
≥ 20 A	—	PTH05T210W TPS40131	PTH08T210W PTH08T250W TPS40140 UCD9240	TPS40140

**Color Code Key:**

Black - Low Dropout Regulators

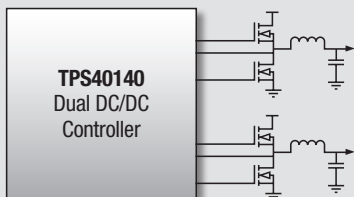
Blue - Plug-In Power Modules

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

Red - DC/DC Controllers (External FETs)

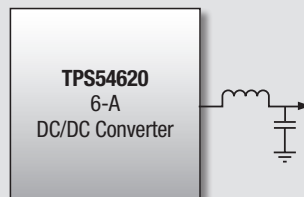
# Key TI Devices Powering Altera's FPGAs

## Dual-Stackable DC/DC Controller



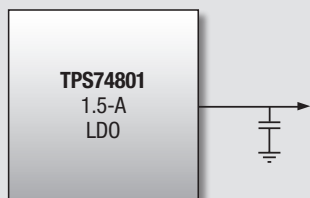
- Dual-output or 2-phase interleaved operation
- Wide input voltage range (4.5 V to 15 V)
- Stackable up to 16 phases up to 1 MHz per phase
- 10- $\mu$ A shutdown current

## DC/DC Converter with Integrated FETs



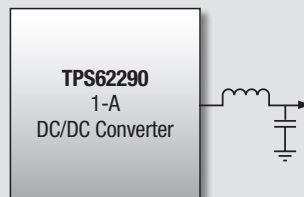
- Integrated FETs for small total solution
- Wide input voltage range (4.5 V to 17 V)
- Capable of 6-A continuous output current
- PWM adjustable up to 1.6 MHz for small inductor
- Small 3.5mm x 3.5mm QFN packaging

## Ultra-Low-Input Voltage LDO



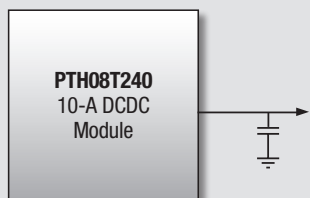
- Input and output range (0.8 V to 5.5 V)
- Low dropout: 60 mV @ 1.5 A ( $V_{bias} = 5$  V)
- High efficiency (>90% possible)
- Small 3 x 3mm SON-10, 5 x 5mm QFN-16 packaging

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



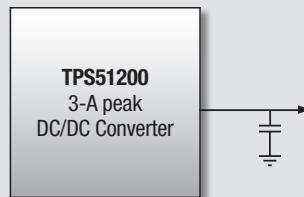
- Integrated FETs for small total solution
- Wide input voltage range (2.3 V to 6 V)
- Switching frequency is 2.25 MHz for small inductor
- Small 2mm x 2mm SON packaging

## 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 – 3A Source-Sink



- Supports 2.5-V and 3.3-V input voltages
- Capable of 3-A continuous source/sink
- Supports DDR, DDR2, DDR3, and low-power DDR3/DDR4 VTT applications
- Small 3mm x 3mm 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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