

# Sine On

AN ANALOG AND MIXED-SIGNAL PRODUCT CATALOG

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## Plug-In Power Solutions



FREE 'Power Management Selection Guide'

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4Q 2001 Issue 2

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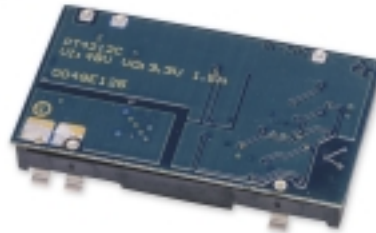
**Excalibur™ series:**  
Industry's first 60-A,  
digital multi-phase  
converter

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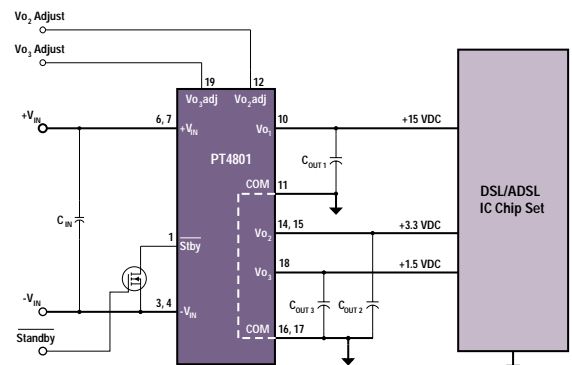
Low-profile, 5-W to 7-W  
surface-mount converter

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**Smallest, triple-output  
DSL power solution**

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Selection Guide for Plug-In Power Solutions

Non-Isolated	Input voltage	1 A	1.5 A	2 A	3 - 5 A	6 - 12 A	13 - 20 A	21 to 40 A	40 A+
Single Positive Output	+3.3 V		PT5520		PT5500	PT6440 PT6520 PT6600	PT6700 PT7710	PT7770	PT7770+ PT7740 PT7741
	+5 V	PT5040	PT5520		PT5500 PT6670	PT6440 PT6520 PT6600	PT6700 PT7710	PT7770	PT7760 PT8000
	+12 V	PT5100 PT6100	PT5070 PT78ST100	PT6210 PT78HT200 PT78ST200	PT6300	PT6340 PT6620	PT6720 PT7720	PT7720 Boosters	
	+24 V	PT5100 PT6100	PT78ST100	PT6210 PT78HT200 PT78ST200	PT6300	PT6650 PT6880	PT7750	PT7750 + Boosters	
Single Negative Output	+3.3 V				PT6910				
	+5 V	PT5020			PT6910				
	+12 V	PT78NR100		PT78NR200	PT6640				
	+24 V	PT78NR100		PT78NR200					
	-24 V		PT79SR100						
Multiple Output	+3.3 V					PT6935 PT6940			
	+5 V	PT5060				PT6930 PT6935 PT6940			
	+12 V								
	+24 V								
Isolated	Input voltage	1-7 W	10-15 W	20 W	30 W	60 W	75 W	100 W	200 W+
Single Output	24 V	DCR01/02 DCP01/02 DCV01	PT4240	PT4140 PT4500	PT4580			PT4470	PT4470 + Boosters
	48 V	PT4210	PT4220 DCT10	PT4120 PT4520	PT4560			PT4480	PT4480 + Boosters
Multiple Output	24 V			PT4800			PT4680		
	48 V	PT4310				PT4840	PT4660		

Non-Isolated Single Positive

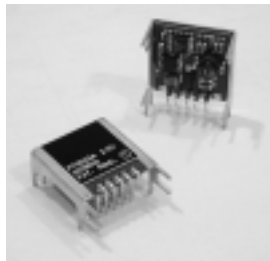
### Space-saving, 3-A, low-voltage regulator

## PT5500 and PT5520 series

Get samples, datasheets and pricing at:  
[www.ti.com/sc/device/PT5500](http://www.ti.com/sc/device/PT5500)  
[www.ti.com/sc/device/PT5520](http://www.ti.com/sc/device/PT5520)

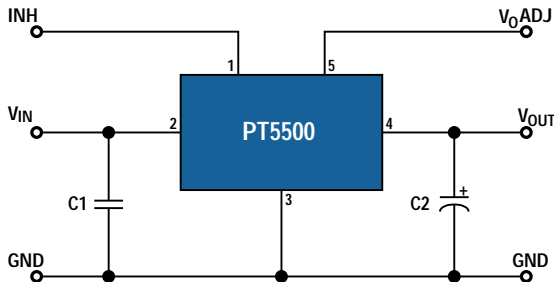


- 3-A, 5-pin Excalibur™ single in-line package (SIP) integrated switching regulator (ISR)
- Output voltage adjustable with one external resistor
- 90% efficiency (3.3 V)
- Small SIP footprint
- Allows easy integration of low-power 3.3-V logic ICs into existing 5-V systems
- Package styles
  - horizontal, surface-mount, vertical (surface-mount available on tape and reel)



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT5500	5-pin, 3-A, low-voltage converter	3.1 V to 5.5 V	1, 1.2, 1.5, 1.8, 2.1, 2.5, 3.3
PT5520	5-pin, 1.5-A, low-voltage converter	3.1 V to 5.5 V	1, 1.2, 1.5, 1.8, 2, 2.5, 3.3

#### Typical application



- Applications include:
  - Powering microprocessors and DSPs

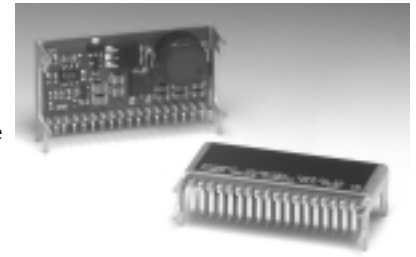
### 5-A regulator operates with 18-V to 36-V input

## PT6880 series

Get samples, datasheets and pricing at:  
[www.ti.com/sc/device/PT6880](http://www.ti.com/sc/device/PT6880)

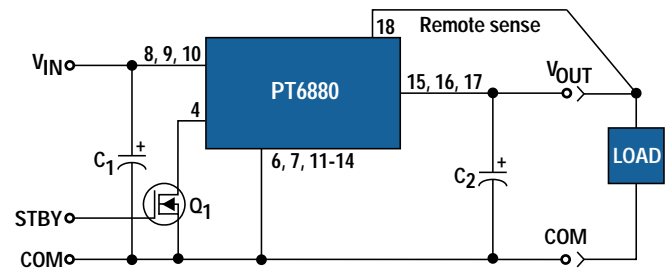


- 24-V bus integrated switching regulator (ISR)
- 14-pin Excalibur™ single in-line package (SIP)
- Input voltage range: 18 V to 36 V
- Adjustable output voltage
- 80% efficiency
- Remote sense capability
- Standby function
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT6880	5-A, 24-V input ISR	18 V to 36 V	2.5, 3.3, 5, 9, 12, 15

#### Typical application



- Applications include:
  - General-purpose industrial applications including process control, test and measurement and instrumentation requiring as much as 5-A output

Non-Isolated Single Positive

### 6-A regulator uses 50 percent smaller footprint

## PT6340 and PT6440 series

Get samples, datasheets and pricing at:  
[www.ti.com/sc/device/PT6340](http://www.ti.com/sc/device/PT6340)  
[www.ti.com/sc/device/PT6440](http://www.ti.com/sc/device/PT6440)

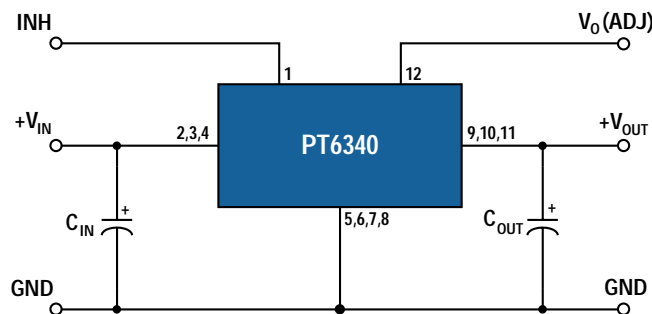


- Output current: 6 A
- Input voltage: 5 V or 12 V
- Small footprint: 0.61 in<sup>2</sup>
- 90% efficiency
- -40° C to +85° C operating temperature range
- Adjustable output voltage
- Inhibit/standby function
- Short-circuit protection
- Solderable Excalibur™ copper case
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT6340	6-A adjustable ISR	10.8 V to 13.2 V	1.5, 1.8, 2.5, 3.3, 5
PT6440	6-A adjustable ISR	3.1 V to 5.5 V	1, 1.2, 1.5, 1.8, 2, 2.5, 3.3

#### Typical application



#### ➤ Applications include:

- High-end computing equipment
- Servers
- Workstations
- Networking equipment

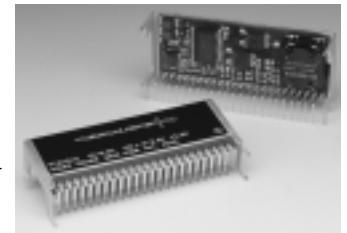
### 13-A, high-performance regulator offers 5-bit VID programming

## PT6700 series

Get samples, datasheets and pricing at:  
[www.ti.com/sc/device/PT6700](http://www.ti.com/sc/device/PT6700)

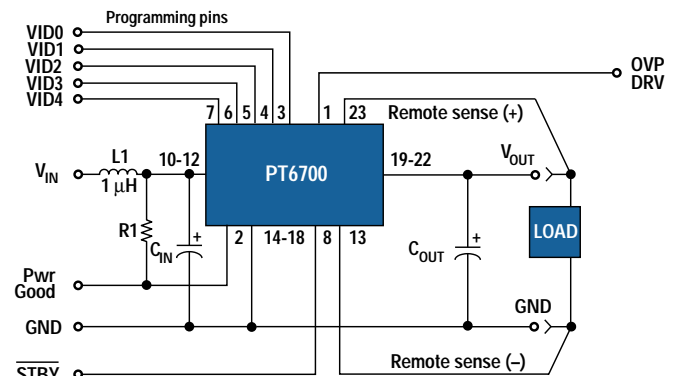


- High-performance, 13-A integrated switching regulators (ISR)
- Space-saving Excalibur™ 23-pin SIP
- Output voltage fixed or programmable from 1.3 V to 3.5 V with a 5-bit input compatible with Intel Pentium® processors
- Differential remote sense
- Internal short-circuit protection
- Over-voltage protection (OVP) drive
- Power Good output signal
- Package styles
  - horizontal, surface-mount, vertical



PT6700 product matrix										
Product series	Input voltage			VID adjust	Resistor adjust	Short circuit	Soft start	Inhibit	OVP driver	Power Good
	3.3 V	5 V	12 V							
PT6701		✓		✓		✓	✓	✓	✓	✓
PT6702	✓			✓		✓	✓	✓	✓	✓
PT6705		✓	✓		✓	✓	✓	✓		
PT6715		✓			✓	✓	✓	✓		
PT6721			✓	✓		✓	✓	✓	✓	✓
PT6725			✓		✓	✓	✓	✓		

#### Typical application



#### ➤ Applications include:

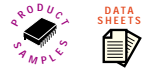
- High-speed, low-voltage microprocessors, DSPs and bus drivers

Non-Isolated Single Positive

## 20-A, next-generation "Big Hammer" increases output

### PT7710 series

Get samples, datasheets and pricing at: [www.ti.com/sc/device/PT7710](http://www.ti.com/sc/device/PT7710)

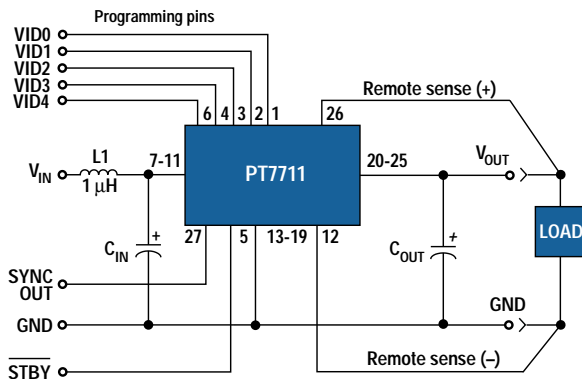


- High-performance, 20-A integrated switching regulator (ISR)
- Space-saving Excalibur™ 27-pin SIP
- Output voltage can be programmed with a 5-bit input compatible with Intel's Pentium® Pro processor
- Differential remote sense
- 20-A capability allows easy integration of the latest high-speed, low voltage microprocessors and bus drivers into existing 5-V or 3.3-V systems
- Designed to work in parallel with one or more of the PT7740 20-A current boosters for increased I<sub>OUT</sub> in increments of 20-A
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT7711	20-A Big Hammer	4.5 V to 5.5 V	1.3 to 3.5 programmable
PT7712	20-A Big Hammer	3.1 V to 3.6 V	1.3 to 2.05 programmable
PT7744	Current booster for PT7711	Same as master	Same as master
PT7745	Current booster for PT7712	Same as master	Same as master

#### Typical application



- Applications include:
  - High-speed, low voltage microprocessors and bus drivers

## 32-A, programmable "Sledge Hammer" operates from 3.3 V

### PT7770 series

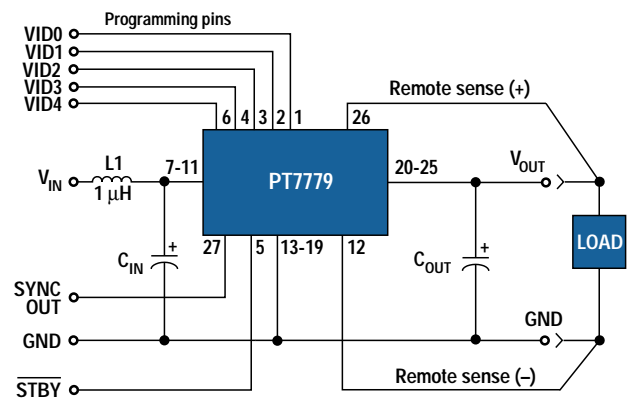
Get samples, datasheets and pricing at: [www.ti.com/sc/device/PT7770](http://www.ti.com/sc/device/PT7770)



- High-performance, 32-A integrated switching regulator (ISR)
- 27-pin SIP
- Output voltage can be programmed from 1.3 V to 3.5 V with a 5-bit input compatible with Intel's Pentium® processors
- Differential remote sense automatically compensates for any voltage drop from the ISR to the load
- 32-A capability allows easy integration of the latest high-speed, low voltage microprocessors, ASICs, DSPs and bus drivers into existing 5-V systems
- Package styles
  - horizontal, surface-mount, vertical

Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT7778	32-A Sledge Hammer	3.1 V to 3.6 V	1.3 to 2.05 programmable
PT7779	32-A Sledge Hammer	4.5 V to 5.5 V	1.3 to 3.5 programmable
PT7740	Current booster for PT7778	Same as master	Same as master
PT7741	Current booster for PT7779	Same as master	Same as master

#### Typical application



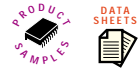
- Applications include:
  - High-speed, low voltage microprocessors
  - ASICs
  - DSPs
  - Bus drivers

Non-Isolated Single Positive

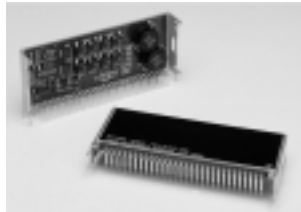
### 40-A, programmable regulator for high-end computing equipment

#### PT7760 series

Get samples, datasheets and pricing at: [www.ti.com/sc/device/PT7760](http://www.ti.com/sc/device/PT7760)

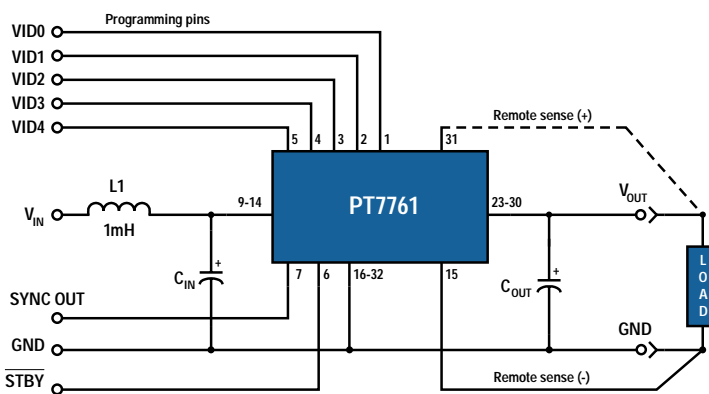


- Output current: 40 A
- Input voltage: 5 V
- 5-bit programmable: 1.3 V to 3.5 V
- 90% efficiency
- Differential remote sense
- Short-circuit protection
- Solderable Excalibur™ copper case
- Parallel with compatible 40-A “current booster”
- Inhibit/shutdown control
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT7760	40-A programmable ISR	5 V	1.3 to 3.5 programmable

#### Typical application



- Applications include:
- High-end computing equipment
  - Workstations
  - Servers

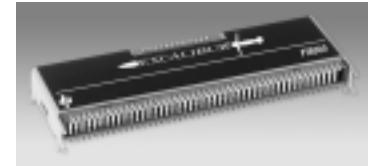
### Industry's first 60-A, digital multi-phase converter

#### PT8000 series

Get samples, datasheets and pricing at: [www.ti.com/sc/device/PT8000](http://www.ti.com/sc/device/PT8000)

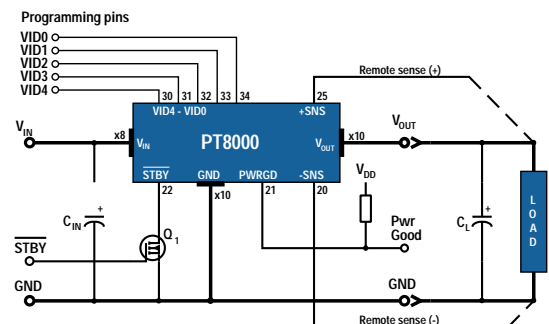


- Output current: 60 A
- Multi-phase topology: effective switching frequency of 1.4 MHz
- Input voltage: 5 V
- 5-bit programmable
  - 1.3 V to 3.5 V
  - 1.075 V to 1.850 V
- High efficiency
- Differential remote sense
- Short-circuit protection
- Output tracking feature
- Over-temperature shutdown
- Power Good and over-voltage flag
- Solderable Excalibur™ copper case
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT8000	60-A programmable ISR	5 V	1.075 to 1.850 1.3 to 3.5 programmable

#### Typical application



- Applications include:
- High-end computing equipment
  - Workstations
  - Servers

Non-Isolated Multiple Output

### Dual-output regulator provides low-power ±12-V rails

#### PT5060 series

Get samples, datasheets and pricing at: [www.ti.com/sc/device/PT5060](http://www.ti.com/sc/device/PT5060)

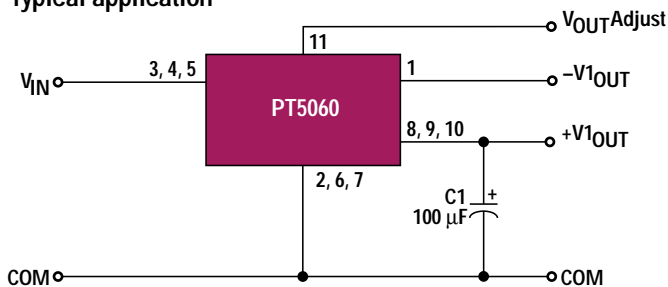


- Designed for use in +5-V systems that require low power ±12 or ±15-volt rails
- Both output voltages can be easily adjusted with one external resistor
- Low-profile, 12-pin SIP
- Dual outputs:
  - +12 V @ 0.5 A; -12 V @ 0.25 A
  - +15 V @ 0.4 A; -15 V @ 0.2 A
- 85% efficiency
- Wide input voltage range
- Adjustable output voltage
- Laser-trimmed output voltage
- Package styles
  - horizontal, surface-mount, vertical (surface-mount available on tape and reel)



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT5060	9-W dual output	4.75 V to (V <sub>0</sub> - 1 V)	±12, ±15

#### Typical application



#### Applications include:

- D/A converters
- A/D converters
- Operational amplifiers
- Interface logic

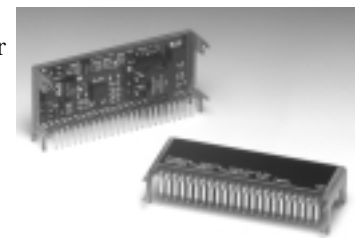
### Dual-output regulator offers low voltage for DSPs

#### PT6930 and PT6935 series

Get samples, datasheets and pricing at: [www.ti.com/sc/device/PT6930](http://www.ti.com/sc/device/PT6930)  
[www.ti.com/sc/device/PT6935](http://www.ti.com/sc/device/PT6935)

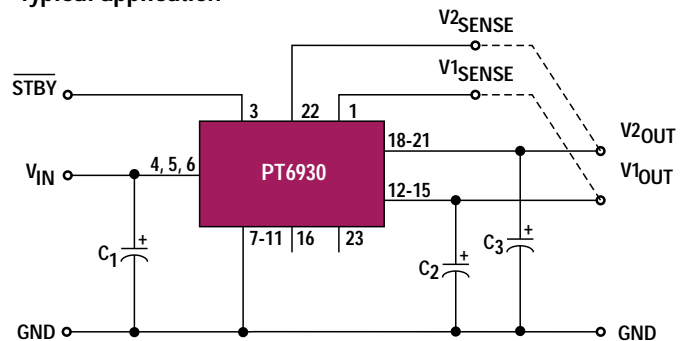


- 25-/35-W, dual-output integrated switching regulator (ISR)
- Dual outputs:
  - V<sub>1</sub> = 3.3 V/2.5 V
  - V<sub>2</sub> = 2.5 V/1.8 V/1.5 V
- Remote sense (both outputs)
- Standby function
- Over-temperature protection
- Soft start
- Internal sequencing
- 23-pin Excalibur™ package
- Both output voltages are independently adjustable with external resistors
- Internal power sequencing of both outputs meets the requirements of TI's TMS320C6000™ DSP platform
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT6930	25-W dual output	4.5 V to 5.5 V	3.3/2.5, 3.3/1.8, 3.3/1.5
PT6935	35-W dual output	4.5 V to 5.5 V	3.3/2.5, 3.3/1.8, 2.5/1.8

#### Typical application



#### Applications include:

- Powering the latest generation of DSPs such as TI's TMS320C6000™

Non-Isolated Multiple Output

Dual-output, 6-A regulator offers high efficiency

PT6940 series

Get samples, datasheets and pricing at: [www.ti.com/sc/device/PT6940](http://www.ti.com/sc/device/PT6940)

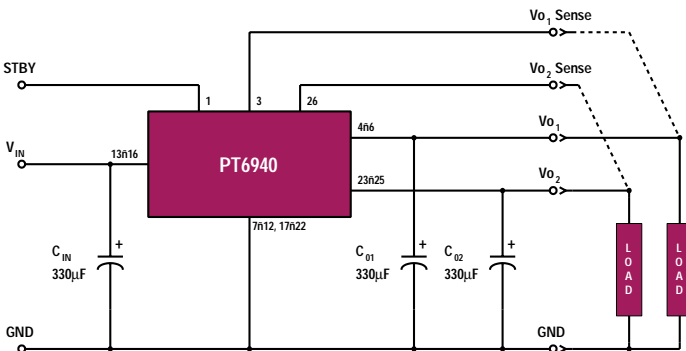


- Independently adjustable output voltages
- Internal power sequencing of both outputs meets the requirements of TI's TMS320C6000™ DSP platform
- Remote sense
- Short-circuit protection
- Standby function
- Soft start
- Solderable Excalibur™ copper case
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT6940	Dual 6-A output	5 V 3.3 V	1.2, 1.5, 1.8, 2.5, 3.3 1.2, 1.5, 1.8, 2.5

Typical application



- Applications include:
- Powering the latest generation of DSPs such as TI's TMS320C6000™

Non-Isolated Single Negative

Adjustable, plus-to-minus converter powers high-speed communication ICs

PT6910 series

Get samples, datasheets and pricing at: [www.ti.com/sc/device/PT6910](http://www.ti.com/sc/device/PT6910)

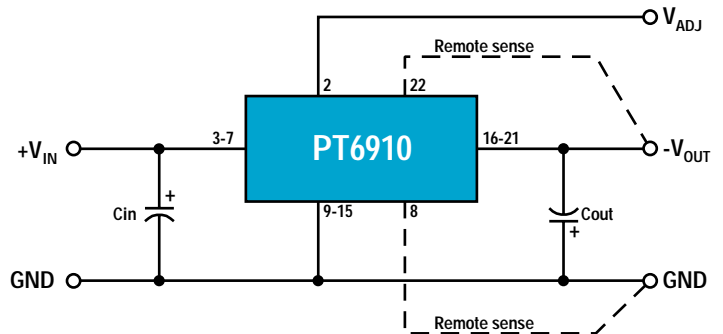


- Single device: 5-V to 3.3-V input
- Remote sense
- Input voltage: 5 V and 3.3 V
- Adjustable output voltage
- 23-pin, Excalibur™ space-saving package
- Solderable copper case
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT6910	12-W adjustable ISR	5 V to 3.3 V	-2, -5.2, -1.5

Typical application



- Applications include:
- High-speed fiber optic communications

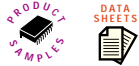


Non-Isolated Single Negative

Plus-to-minus regulator creates negative output from positive input

PT78NR series

Get samples, datasheets and pricing at: [www.ti.com/sc/device/PT78NR100](http://www.ti.com/sc/device/PT78NR100)

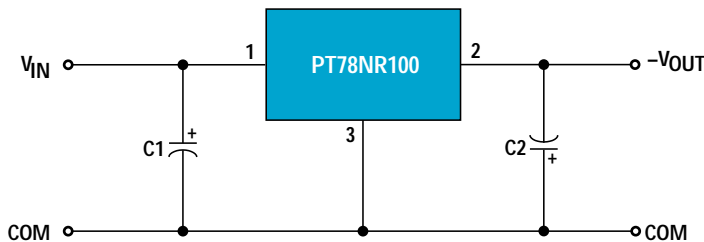


- Creates a negative output voltage from a positive input voltage greater than 7 V
- Laser-trimmed negative output voltage
- Wide input range
- Self-contained inductor
- Short-circuit protection
- Over-temperature protection
- Fast transient response
- Package styles
  - horizontal, surface-mount, vertical (surface-mount available on tape and reel)



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT78NR100	3-pin, 1-A positive in, negative out ISR	7 V to (30 V -  V <sub>O</sub>  )	-3, -5, -5.2, -6, -7, -8, -9, -10, -12, -13.9, -15
PT78NR200	3-pin, 2-A positive in, negative out ISR	7 V to (30 V -  V <sub>O</sub>  )	-5.2, -6, -12, -15

Typical application



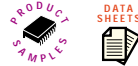
- Applications include:
- Powering slip-rail operational amplifiers
  - D/A converters
  - A/D converters
  - Other analog circuits

Isolated Single Output

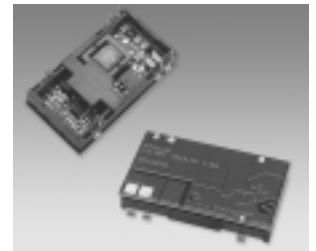
5-W to 7-W, low-profile, surface-mount converter

PT4210 series

Get samples, datasheets and pricing at: [www.ti.com/sc/device/PT4210](http://www.ti.com/sc/device/PT4210)

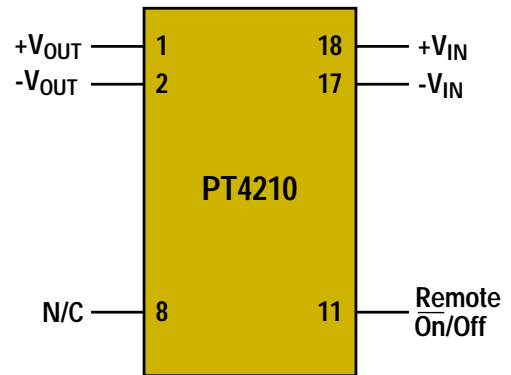


- Low-profile package: 8 mm
- 1,500-VDC isolation
- Pin-compatible with similar PKF-series modules
- No external components required
- 6-pin DIP
- Package styles
  - through-hole, surface-mount



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT4210	5-W to 7-W isolated	38 V to 75 V	3.3, 5, 12

Typical application



- Applications include:
- Telecom and datacom systems where board space and height are a premium

Isolated Single Output

## 10-W, isolated DC/DC converter in low-profile Excalibur™ package

### PT4220 and PT4240 series

Get samples, datasheets and pricing at:

[www.ti.com/sc/device/PT4220](http://www.ti.com/sc/device/PT4220)

[www.ti.com/sc/device/PT4240](http://www.ti.com/sc/device/PT4240)

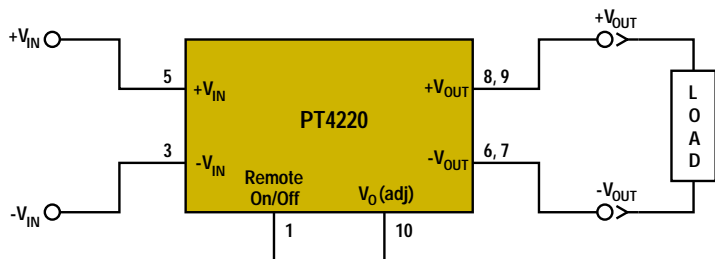


- Output power: 10 W
- Input voltage: 24 V or 48 V
- 1,500-VDC isolation
- -40° C to +85° C operating temperature range
- Remote on/off control
- Adjustable output voltage
- Under-voltage lockout
- Current limit
- Short-circuit protection
- Solderable Excalibur copper case
- Low-profile package: 8 mm
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT4220	10-W isolated	36 V to 75 V	1.5, 1.8, 2.5, 3.3, 5, 12
PT4240	10-W isolated	18 V to 36 V	1.5, 1.8, 2.5, 3.3, 5, 12

#### Typical application



- **Applications include:**
- Telecom and datacom applications
  - Industrial, computer and medical applications
  - Other distributed power applications requiring input-to-output isolation over an industrial temperature range

## 20-W, isolated DC/DC converter offers 1.5-V output

### PT4500 and PT4520 series

Get samples, datasheets and pricing at:

[www.ti.com/sc/device/PT4500](http://www.ti.com/sc/device/PT4500)

[www.ti.com/sc/device/PT4520](http://www.ti.com/sc/device/PT4520)

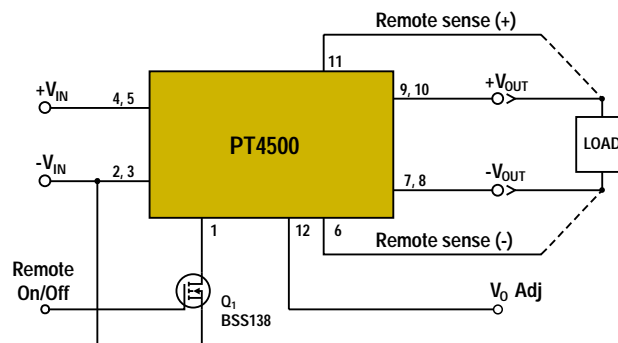


- Output power: 20 W
- Input voltage: 24 V or 48 V
- 1,500-VDC isolation
- Low-profile package: 8.5 mm
- Adjustable output voltage
- On/off control
- Differential remote sense
- Short-circuit protection
- Over-temperature Shutdown
- Solderable Excalibur™ copper case
- Small footprint: 1.0 in<sup>2</sup> (Suffix N)
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT4500	20-W isolated	18 V to 40 V	1.5, 1.8, 2.5, 3.3, 5, 12, 15
PT4520	20-W isolated	36 V to 75 V	1.5, 1.8, 2.5, 3.3, 5, 12, 15

#### Typical application



- **Applications include:**
- Telecom, industrial, computer and other distributed power applications that require input-to-output isolation

Isolated Single Output

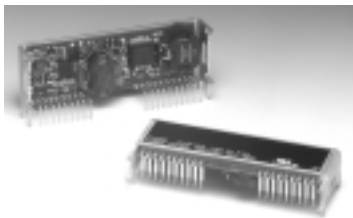
### 30-W, isolated DC/DC converter has wide-range input

#### PT4560 and PT4580 series

Get samples, datasheets and pricing at:  
[www.ti.com/sc/device/PT4560](http://www.ti.com/sc/device/PT4560)  
[www.ti.com/sc/device/PT4580](http://www.ti.com/sc/device/PT4580)

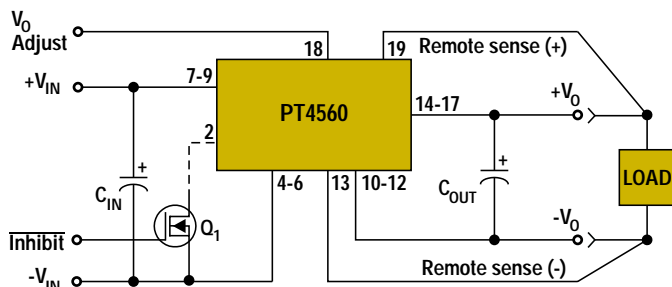


- Output power: 30 W
- -40° C to +85° C operating temperature range
- 1,500-VDC isolation
- 83% efficiency
- UL, CSA, VDE approved
- 19-pin Excalibur™ case
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT4560	30-W isolated	36 V to 75 V	1.8, 2.0, 2.5, 3.3, 5, 5.2, 12, 15
PT4580	30-W isolated	18 V to 60 V	1.8, 3.3, 5, 12, 15

#### Typical application

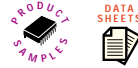


- Applications include:
- Telecom
  - Industrial equipment
  - Computers
  - Medical equipment
  - Distributed power applications requiring input-to-output isolation and an industrial temperature range

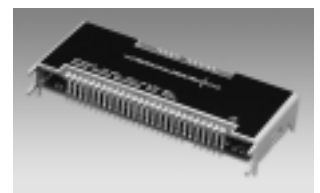
### 100-W, programmable converter offers N+1 current sharing

#### PT4480 and PT4470 series

Get samples, datasheets and pricing at:  
[www.ti.com/sc/device/PT4480](http://www.ti.com/sc/device/PT4480)  
[www.ti.com/sc/device/PT4470](http://www.ti.com/sc/device/PT4470)



- Output power: 100 W
- Programmable output voltage
- Remote on/off
- Differential remote sense
- N + 1 current sharing
- Over-current protection
- Over-temperature protection
- Over-voltage protection
- 26-pin Excalibur™ case
- 89% efficiency
- 1,500-VDC isolation
- No external components required
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Parallel mode	Available output voltages (V)
PT4481	100-W/30-A isolated	36 V to 75 V	N+1	1.3 to 3.5 programmable
PT4482	100-W/30-A isolated	36 V to 75 V	Booster	1.3 to 3.5 programmable
PT4483	100-W/30-A isolated	36 V to 75 V	N+1	4.6 to 5.7 programmable
PT4484	100-W/30-A isolated	36 V to 75 V	Booster	4.6 to 5.7 programmable
PT4471	100-W/30-A isolated	18 V to 40 V	N+1	1.3 to 3.5 programmable
PT4472	100-W/30-A isolated	18 V to 40 V	Booster	1.3 to 3.5 programmable
PT4473	100-W/20-A isolated	18 V to 36 V	N+1	4.6 to 5.7 programmable
PT4474	100-W/20-A isolated	18 V to 36 V	Booster	4.6 to 5.7 programmable
PT4475	100-W/8.5 A isolated	18 V to 36 V	N+1	6.5 to 17.5 programmable
PT4476	100-W/8.5 A isolated	18 V to 36 V	Booster	6.5 to 17.5 programmable
PT4485	100-W/8.5 A isolated	36 V to 75 V	N+1	6.5 to 17.5 programmable
PT4486	100-W/8.5 A isolated	36 V to 75 V	Booster	6.5 to 17.5 programmable
PT4493	PT4476 Booster	Same as master	-	Same as master
PT4494	PT4476 Booster	Same as master	-	Same as master
PT4495	PT4472 booster	Same as master	-	Same as master
PT4497	PT4476 booster	Same as master	-	Same as master
PT4498	PT4484 booster	Same as master	-	Same as master
PT4499	PT4482 booster	Same as master	-	Same as master

- Applications include:
- Telecom and datacom applications requiring input-to-output isolation

Isolated Single Output

### 1-W and 2-W isolated DC/DC converter with regulated output

#### DCR01/DCR02

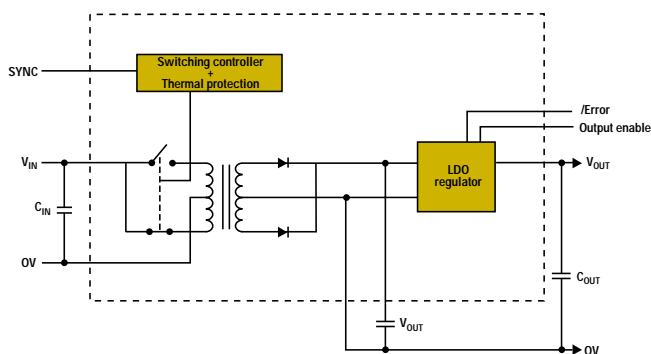
Get samples, datasheets and pricing at:  
[www.ti.com/sc/dcr01](http://www.ti.com/sc/dcr01)  
[www.ti.com/sc/dcr02](http://www.ti.com/sc/dcr02)



- Input voltage: 5 V, 12 V or 24 V
- Regulated 3.3 V or 5 V outputs
- 1,000 V<sub>RMS</sub> isolation to UL1950
- Synchronizable clock frequencies minimize noise
- Remote shutdown from both sides of barrier for complete control
- Thermal shutdown and output current limit provides safety outside of operating range
- High reliability through the use of solderless manufacturing process
- -40° C to +85° C operating temperature range with no de-rating
- Package styles
  - JEDEC standard DIP-18 and SO-28 packages allow standard assembly techniques to be used

Product	Description	V <sub>IN</sub>	Available output voltages (V)
DCR01	1-W isolated DC/DC converter	5 V, 12 V, 24 V	3.3 V or 5 V
DCR02	2-W isolated DC/DC converter	12 V, 24 V	3.3 V or 5 V

#### Typical application



- Applications include:
- Communications systems
  - Industrial process control
  - Medical

### DC/DC converter provides highest reliability in class

#### DCP01/DCP02

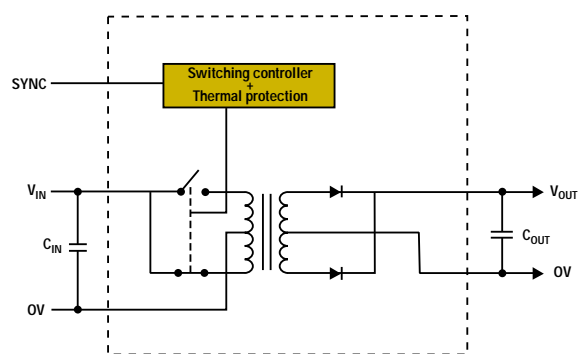
Get samples, datasheets and pricing at:  
[www.ti.com/sc/dcp01](http://www.ti.com/sc/dcp01)  
[www.ti.com/sc/dcp02](http://www.ti.com/sc/dcp02)



- Input voltage: 5 V, 12 V, 15 V or 24 V
- Output voltages designed to power most analog circuitry: 3.3 V, 5 V, ±5 V, 7 V, 9 V, 12 V, ±12 V, 15 V or ±15 V
- Thermal shutdown
- Short-circuit protection
- Device-to-device synchronization minimizes noise and remote shutdown for low-power operation
- Efficiency up to 89% providing simple thermal management
- High reliability through the use of solderless manufacturing process
- UL1950 recognized component at 1,000 V<sub>RMS</sub> isolation
- Package styles
  - DIP-14, gull-wing and SO-28 packaging, which meets JEDEC standards

Product	Description	V <sub>IN</sub>	Available output voltages (V)
DCP01	1-W isolated DC/DC converter	5 V, 12 V, 24 V	5 V or +/-15 V
DCP02	2-W isolated DC/DC converter	5 V, 12 V, 15 V, 24 V	3 V or +/-15 V

#### Typical application



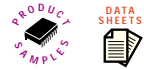
- Applications include:
- Communications systems
  - Industrial process control
  - Medical

Isolated Single Output

## 2-A DC/DC converter simplifies Telecom design

### DCT10

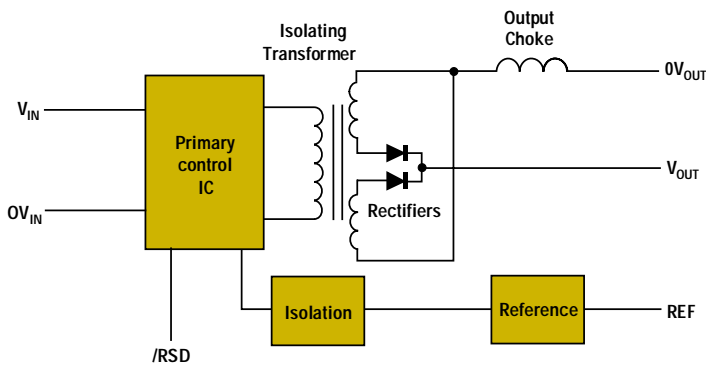
Get samples, datasheets and pricing at: [www.ti.com/sc/dct10](http://www.ti.com/sc/dct10)



- Input voltages: 48 V (32 V to 75 V) or 24 V (18 V to 36 V)
- Integrated magnetic components reduce size and make devices simple to use
- Output current: 2 A with 5 V or 3.3 V, 0.8 A with 12 V
- 1,500 V<sub>RMS</sub> isolation with basic isolation to UL1950 and EN60950
- Remote sense and shutdown plus output voltage trim for flexibility in use
- High reliability
- -40° C to +85° C operating temperature range
- Package styles
  - JEDEC standard DIP-28 in through-hole and surface-mount format

Product	Description	V <sub>IN</sub>	Available output voltages (V)
DCT10	2-A isolated DC/DC converter	48 V, 24 V	3.3 V, 5 V, 12 V

#### Typical application



- Applications include:
- Telecom
  - Communications systems

Isolated Multiple Output

## Dual-isolated converter provides low-power ±5-V or ±12-V rails

### PT4310 series

Get samples, datasheets and pricing at: [www.ti.com/sc/device/PT4310](http://www.ti.com/sc/device/PT4310)

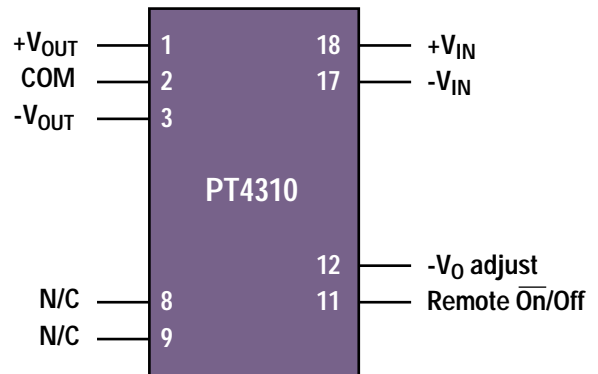


- Dual complementary outputs: ±5 V and ±12 V
- Input voltage: 48 V
- 1,500-VDC isolation
- Pin-compatible with similar PKF series modules
- Low-profile package: 8 mm
- 9-pin DIP
- Package styles
  - through-hole, surface-mount



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT4310	6-W isolated	38 V to 75 V	±5, ±12

#### Typical application



- Applications include:
- Telecom and datacom systems where board space and height are a premium

Isolated Multiple Output

## 25-W, triple-output converter powers 8-channel DSL designs

### PT4800 series

Get samples, datasheets and pricing at: [www.ti.com/sc/device/PT4800](http://www.ti.com/sc/device/PT4800)

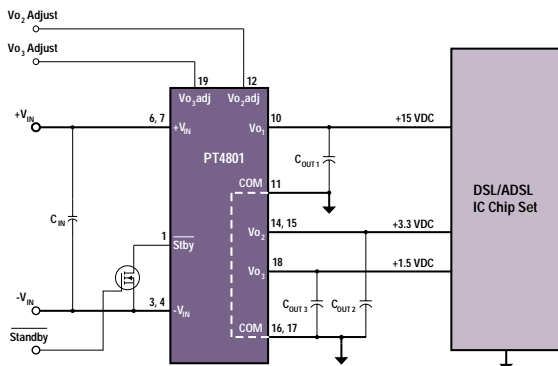


- Three independently regulated outputs: 15 V, 3.3 V, 1.5 V
- Small footprint: 1.6 in<sup>2</sup> (Suffix N)
- Compatible with TI's AC-5 ADSL chipset
- Input voltage: 48 V
- 1,500-VDC isolation
- On/off "standby" control
- Current limit
- Short-circuit protection (all outputs)
- Over-temperature shutdown
- Under-voltage lockout
- Solderable Excalibur™ copper case
- Safety approvals:
  - UL1950
  - CSA 22.2 950
  - VDE EN60950
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT4800	25-W isolated	36 V to 75 V	15/3.3/1.5

#### Typical application



- Applications include:
- 8- and 16-channel central office (CO) ADSL applications

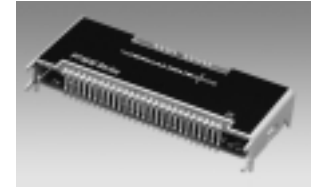
## 65-W, triple-output converter powers 32-channel DSL designs

### PT4840 series

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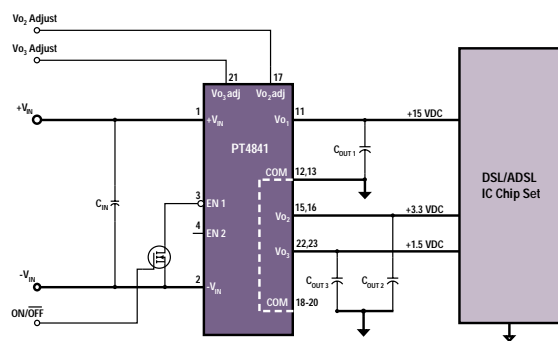


- Three independently regulated outputs: 15 V, 3.3 V, 1.5 V
- Small footprint: 1.9 in<sup>2</sup> (Suffix N)
- Compatible with TI's AC-5 ADSL chipset
- Input voltage: 48 V
- 1,500-VDC isolation
- On/off "standby" control
- Current limit
- Short-circuit protection (all outputs)
- Over-temperature shutdown
- Under-voltage lockout
- Solderable Excalibur™ copper case
- Safety approvals:
  - UL 1950
  - CSA 22.2 950
  - VDE EN60950
- Package styles
  - horizontal, surface-mount, vertical



Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT4840	65-W isolated	36 V to 75 V	15/3.3/1.5

#### Typical application



- Applications include:
- 16-, 24- and 32-channel CO ADSL applications

Isolated Multiple Output

# Dual, low-voltage converter independently regulates two 15-A outputs

## PT4660 and PT4680 series

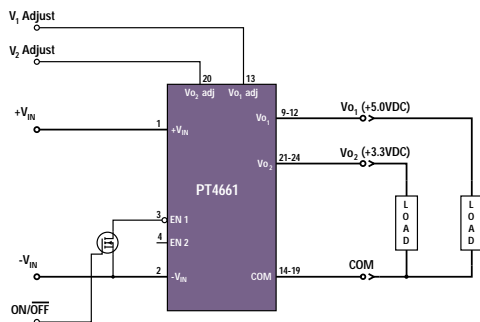
Get samples, datasheets and pricing at:  
[www.ti.com/sc/device/PT4660](http://www.ti.com/sc/device/PT4660)  
[www.ti.com/sc/device/PT4680](http://www.ti.com/sc/device/PT4680)



- Two independently regulated 15-A outputs
- Input voltage: 24 V or 48 V
- Power-up sequencing
- 1,500-VDC isolation
- -40° C to 85° C operating temperature range
- 88% efficiency
- Over-current protection (both outputs)
- Dual logic on/off control
- Over-temperature shutdown
- Over-voltage protection
- Under-voltage lockout
- Input differential EMI filter
- Solderable Excalibur™ copper case
- Safety approvals: UL1950 and CSA 22.2 950
- Package styles
  - horizontal, surface-mount, vertical

Product	Description	V <sub>IN</sub>	Available output voltages (V)
PT4660	20-A isolated	36 V to 75 V	2.5/1.8, 3.3/1.5, 3.3/1.8, 3.3/2.5, 5/1.8, 5/3.3
PT4680	20-A isolated	18 V to 40 V	3.3/2.5, 5/3.3

### Typical application



### ➤ Applications include:

- Telecom
- Datacom
- Industrial computers
- Other applications requiring two low-voltages for DSPs, microprocessors, FPGAs or other large-scale ICs

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[www.ti.com/sc/support](http://www.ti.com/sc/support)

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17  Internet-Ready Wireless Handsets (4Q '00)

#### Which analog and mixed-signal products are you currently designing with or considering?

- 18  Advanced Bus (1394, PCI, USB)
- 19  Amplifiers
- 20  Comparators
- 21  Data Transmission
- 22  Data Converters
- 23  Multimedia
- 24  Power Drivers
- 25  Low Dropout Regulators
- 26  Supervisory Circuits
- 27  Power Distribution Switches
- 28  Power Supply Control
- 29  Battery Management
- 30  DC-DC Converters/Charge Pumps
- 31  Hot Swap Power Managers
- 32  Plug-In Power Solutions
- 33  SCSI Terminators
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- 37  Other (please specify)

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04  Low Power DC/DC Converters (1Q '01)  
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06  DSP Power Management (1Q '01)  
07  Low Dropout Regulators (4Q '00)  
08  Power Distribution (3Q '01) **New!**  
09  Power Supply Control (1Q '01)  
10  Supervisory Circuits (1Q '01)

11  Amplifiers & Comparators (3Q '00)  
12  Amps & Comparators for Portable Apps (2Q '01)  
13  High-Speed Amplifiers (2Q '00)  
14  Instrumentation Amplifiers (1Q '01)

15  SCSI Bus Products (2Q '00)  
16  Analog & Mixed-Signal Broadband (2Q '01)  
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- 26  Supervisory Circuits
- 27  Power Distribution Switches
- 28  Power Supply Control
- 29  Battery Management
- 30  DC-DC Converters/Charge Pumps
- 31  Hot Swap Power Managers
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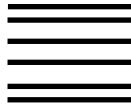
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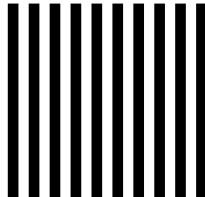
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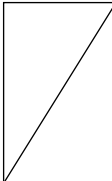
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**Free Resources**

01  Power Management Selection Guide **Updated 2Q '01**

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02  Data-Acquisition Products (3Q '01) **New!**  
03  High-Speed Data Converters (4Q '01) **New!**

04  Low Power DC/DC Converters (1Q '01)  
05  Battery Management Supplement (2Q '01)  
06  DSP Power Management (1Q '01)  
07  Low Dropout Regulators (4Q '00)  
08  Power Distribution (3Q '01) **New!**  
09  Power Supply Control (1Q '01)  
10  Supervisory Circuits (1Q '01)

11  Amplifiers & Comparators (3Q '00)  
12  Amps & Comparators for Portable Apps (2Q '01)  
13  High-Speed Amplifiers (2Q '00)  
14  Instrumentation Amplifiers (1Q '01)

15  SCSI Bus Products (2Q '00)  
16  Analog & Mixed-Signal Broadband (2Q '01)  
17  Internet-Ready Wireless Handsets (4Q '00)

**Which analog and mixed-signal products are you currently designing with or considering?**

- 18  Advanced Bus (1394, PCI, USB)
- 19  Amplifiers
- 20  Comparators
- 21  Data Transmission
- 22  Data Converters
- 23  Multimedia
- 24  Power Drivers
- 25  Low Dropout Regulators
- 26  Supervisory Circuits
- 27  Power Distribution Switches
- 28  Power Supply Control
- 29  Battery Management
- 30  DC-DC Converters/Charge Pumps
- 31  Hot Swap Power Managers
- 32  Plug-In Power Solutions
- 33  SCSI Terminators
- 34  Speech
- 35  Wireless & Telecom
- 36  Transmitters & Receivers
- 37  Other (please specify)

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(NOM): \_\_\_\_\_

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