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TOUGHPOWER SERIES
POWER SUPPLY

TOUGHPOWER GF A3



TOUGHPOWER GF A3

650W

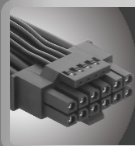
DATASHEET



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PCIe Gen 5 Ready
16-PIN Connector



ATX 3.0 Compatible

Smart Zero Fan

Main Japanese
Capacitors

10 YEAR
Warranty

Features

- Compatible with Intel ATX 3.0 specification and designed with native PCIe Gen 5.0 12+4pin modular interface.
- 650W continuous output at 45°C/113°F operating environment.
- Fully Modular: High efficiency Zero Cable Platform with premium build quality.
- High quality Japanese 105°C/221°F main capacitors.
- Smart Zero Fan: Minimizes undesired noise.
- The voltage regulation are compatible with Intel standard.
- Ultra Quiet 120mm fluid bearing fan delivers excellent airflow.
- High amperage single +12V rail design.
- Intel C6/C7 states & ErP ready
- Built-in industry grade protections: OCP, OVP, UVP, OPP, SCP, OTP.
- Compact Sizing: 150mm(W)x86mm(H)x140mm(D).
- Safety approvals: FCC/ICES/CB/CTUVus certifications.



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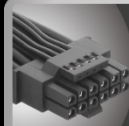
Highlighted Features

Fully Compatible With ATX 3.0 Specifications

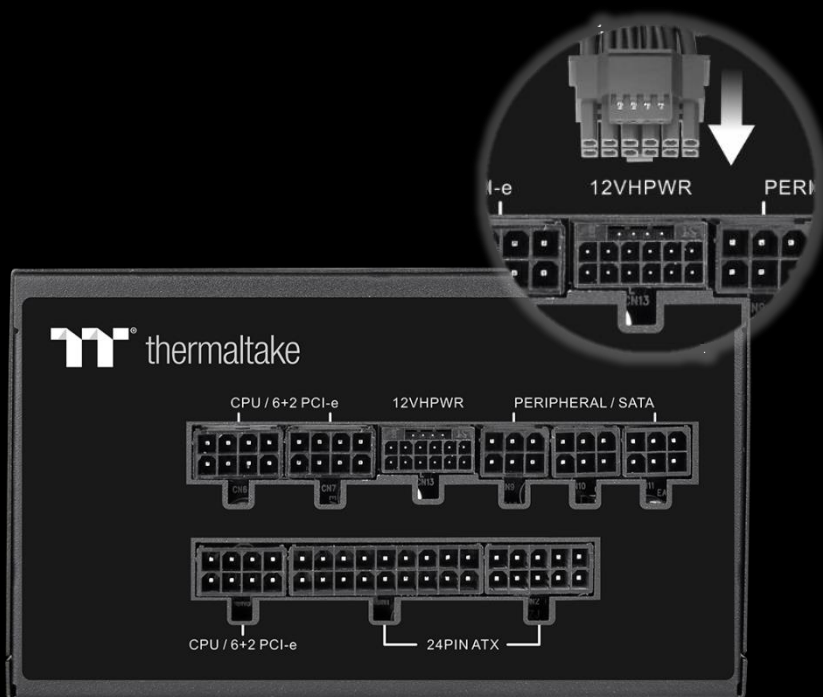
Meets all the needs of a computer system, providing powerful and stable power.

- Supports 200% power excursion
- Reaches 60% low load efficiency
- Complies with required power supply timing standards
- Designed with native 12+4pin 12VHPWR, and bundled with a PCIe Gen 5 cable

ATX 3.0 Compatible



PCIe Gen 5 Ready
16-PIN Connector





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Highlighted Features

Main Japanese Capacitors

High Quality Japanese 105°C/221°F Main Capacitors

Improves the durability and offers the highest stability and reliability.

Smart Zero Fan

Ultra Quiet Smart Zero Fan

Adjusts the fan speed and minimizes undesired noise.



Fully Modular, Low-Profile Flat Black Cables

Makes cable management easier, reduces clutter and increases airflow inside the chassis.

High Amperage Single +12V Rail & DC to DC Design

Powerful single +12V rail and DC to DC design for the best compatibility.



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Eco Design

80 PLUS® Golf Certified Efficiency

Delivers top end efficiency under real world load conditions.



Supports Energy Star 5.0* energy standard

Toughpower GF A3 series is suitable for use in Energy Star-compatible computers.

Supports Intel Deep Power Down C6 Status

Helps your PC system operate more power efficiently.

Corresponds to the EU directives on WEEE and RoHS

Thermaltake considers its full impact on the environment during manufacturing and maintains green facilities to ensure Toughpower GF A3 series meets WEEE & RoHS requirements.



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Specification

AC Input	Input Voltage: 100-240V~				
	Input Current: 12A-6A				
	Frequency: 50Hz/60Hz				
DC Output	+3.3V	+5V	+12V	-12V	+5VSB
Max Output Current	18A	18A	54.17A	0.3A	3A
Max Output Power	100W		650W	3.6W	15W
Total Power	650W				

GENERAL INFO

P/N	PS-TPD-0650FNFAGU-L
Model	TTP-0650AH2FLG
Max. Output Capacity	650W
Color	Black
Dimension	150mm(W)x86mm(H)x140mm(D)
PFC	Active PFC
Power Good Signal	100-150 msec
Hold-Up Time	> 17msec
Cooling System	12cm FDB Fan
Weigh (Main Body)	1.54 KG

ENVIRONMENT

Operating Temperature	5°C to + 45°C
Operating Humidity	20% to 85%,non-condensing
Storage Temperature	-40°C to + 55°C
Storage Humidity	10% to 95%, non-condensing

MISCELLANEOUS

Efficiency	Meet 80 PLUS® Gold at 115Vac input.
MTBF	100,000 hrs minimum
Safety Approval	FCC/ICES/CB/cTUVus

PCIe CONNECTOR

PCIe 6+2pin	4
PCIe 12+4pin (300W)	1


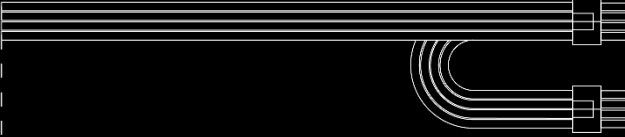
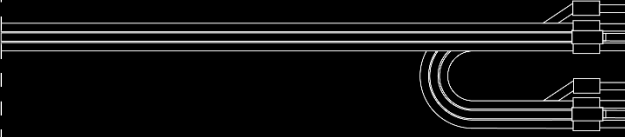
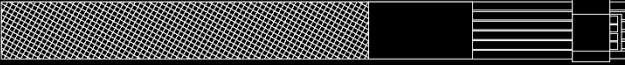
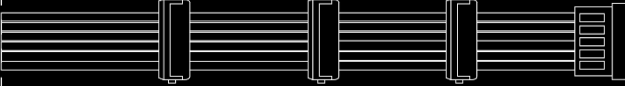
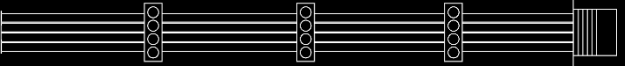



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Connector and Cable Specification

Connector Type	Connector Quantity		Cable Quantity	Cable Length
Main Power (24Pin)	X 1		X 1	600mm
ATX 12V (4+4Pin)	X 2		X 1	650mm+150mm
PCIe (6+2Pin)	X 4		X 2	500mm+150mm
PCIe (12+4Pin) 300W	X 1		X 1	600mm
SATA (5Pin)	X 8		X 2	500mm+150mm +150mm+150mm
Peripheral (4Pin)	X 4		X 1	500mm+150mm +150mm+150mm
FDD Adapter	X 1		X 1	150mm



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Total Protection

Protections	Voltage Source		
	+3.3V	+5V	+12V
Over Voltage Protection	3.76~4.3V	5.74~7.0V	13.4~15.6V
Under Voltage Protection	2.0~2.6V	3.3~3.9V	8.5~9.7V
Over Current Protection	24~32A	24~32A	90~115A
Over Power Protection	Protection at 160%~200% over peak load.		
Over Temperature Protection	Protection temperature is 55°C~65°C		
Short Circuit Protection	Short circuit placed on +5V,+12V,+3.3V,-12V will latch off. +5VSB will auto-recovery.		