



thermaltake

**TOUGHPower SERIES**  
POWER SUPPLY

**TOUGHPower PF1 650W**



# TOUGHPower PF1 650W

## DATASHEET



thermaltake

# TOUGHPower SERIES POWER SUPPLY

## TOUGHPower PF1 650W

### Ultra Quiet

Hydraulic Bearing Fan

### Smart Zero Fan

### Low Ripple Noise

### Fully Modular

Flat Cables

100% Japanese  
Capacitors

10 YEAR  
Warranty



## Features

- Continuous output at 50°C/122°F operating environment.
- 80 PLUS Platinum Certified.
- 100% high quality Japanese capacitors.
- < 30mV low ripple noise design.
- Extremely strict voltage regulation <  $\pm 2\%$
- Hold up time > 16 milliseconds.
- New Board Technology Offering Single side SMD.
- Fully modular low-profile flat black cables.
- Ultra Quiet 120mm Hydraulic Bearing Fan delivers excellent airflow.
- Smart Zero Fan: Minimizes undesired noise.
- High amperage single +12V rail design.
- Intel C6/C7 states & ErP ready
- Built-in industry grade protections: OCP, OVP, UVP, OPP, SCP, OTP
- Dimension: 150mm(W)x86mm(H)x140mm(D).
- Safety approvals: CE/UL/TÜV/FCC/BSMI/CCC/ EAC certifications.

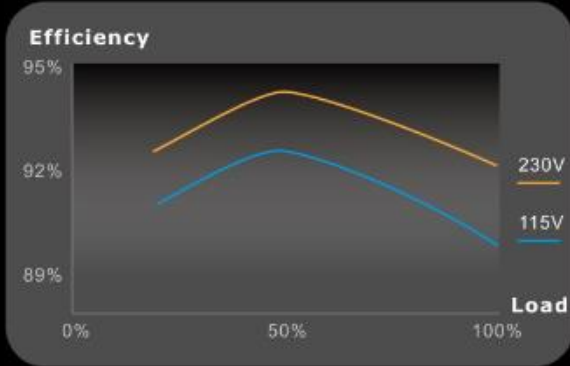


thermaltake

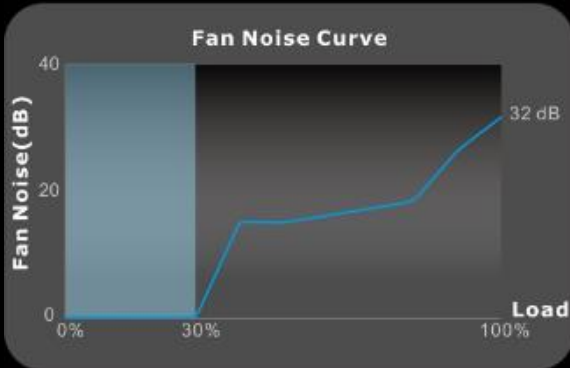
# TOUGHPower SERIES POWER SUPPLY

## TOUGHPower PF1 650W

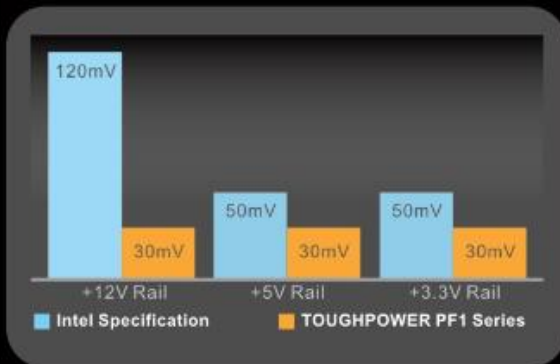
### Highlight Features



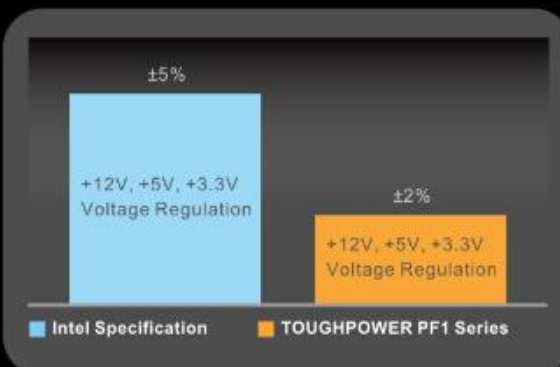
**80 PLUS® Platinum Certified Efficiency**  
Delivers top end efficiency under real world load conditions.



**Ultra Quiet Smart Zero Fan**  
Minimize undesired noise.



**< 30mV Low Ripple Noise Design**  
Top-end build quality with low ripple noise.



**Extremely Strict Voltage Regulation < ±2%**  
Provides steady clean power through exceptional voltage stability.

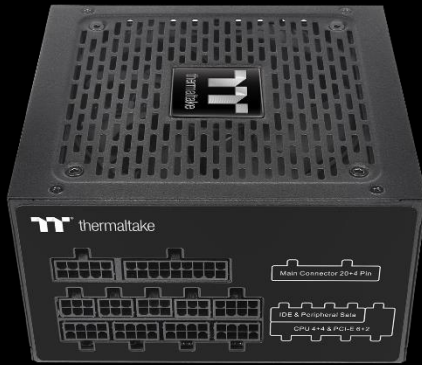


thermaltake

# TOUGHPOWER SERIES POWER SUPPLY

## TOUGHPOWER PF1 650W

### Highlight Features



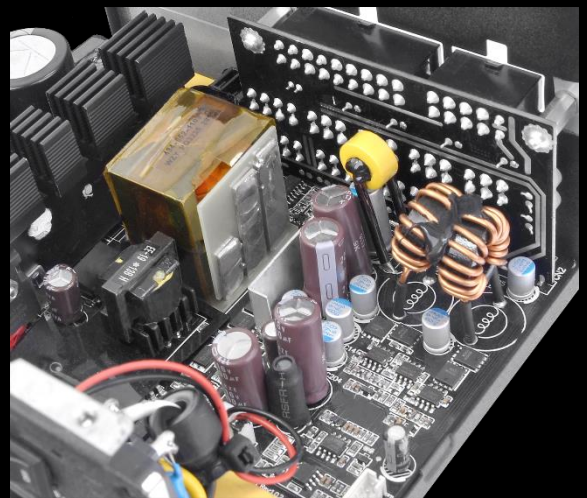
### Fully Modular Low-Profile Flat Black Cables

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



### 100% High Quality Japanese 105°C/221°F Capacitors.

Improves the durability and offers the highest stability and reliability.



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

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

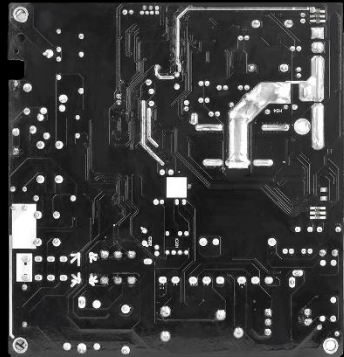


thermaltake

# TOUGHPOWER SERIES POWER SUPPLY

## TOUGHPOWER PF1 650W

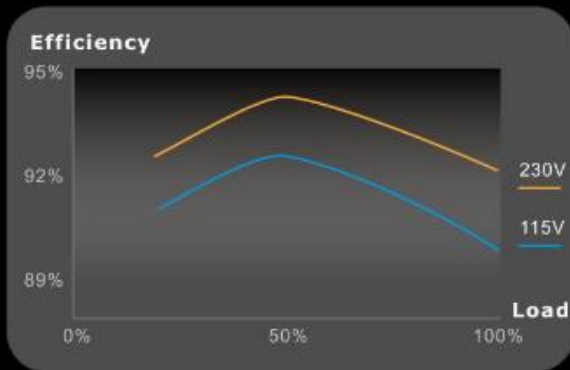
### Highlight Features



### New Board Technology Offering Single side SMD

The new board design allows all SMD sit on the top side of the PSU PBC board. This design not only can create less heat accumulate in the bottom of PSU but also help minimize power loss and increase efficiency.

### Eco Design



### 80 PLUS® Platinum Certified Efficiency

Delivers top end efficiency under real world load conditions.

### Supports Energy Star 5.0\* energy standard

TOUGHPOWER PF1 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 PF1 series meets WEEE & RoHS requirements.

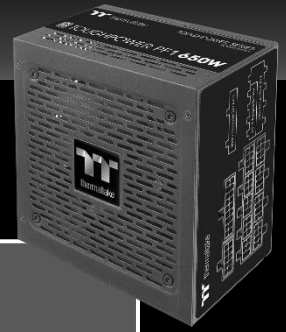




# TOUGHPower SERIES POWER SUPPLY

thermaltake

## TOUGHPower PF1 650W



### Output Specification

<b>AC Input</b>	Input Voltage: 100V - 240V~ Input Current: 10A max Frequency: 50Hz - 60Hz				
<b>DC Output</b>	+3.3V	+5V	+12V	-12V	+5VSB
<b>Max Output Current</b>	20A	20A	54A	0.3A	2.5A
<b>Max Output Power</b>	100W		648W	3.6W	12.5W
<b>Total Power</b>	650W				

### Connect Specification

Connector						
Wattage	<b>Main Power Connector (24Pin)</b>	<b>ATX 12V (4+4Pin)</b>	<b>SATA (5Pin)</b>	<b>PCI-E (6+2Pin)</b>	<b>Peripheral (4Pin)</b>	<b>FDD Adapter</b>
650W	1	2	9	4	4	1

Wattage	Connector Type	Connector Quantity & Cable Length
650W	Main Power (24pin)	1 x 24pin Main connector (600mm)
	ATX 12V (4+4pin)	1 x ATX 12V 4+4pin connector (650mm) 1 x ATX 12V 4+4pin connector (650mm)
	PCI-E (6+2pin)	2 x PCI-E 6+2pin connectors (500mm + 150mm) 2 x PCI-E 6+2pin connectors (500mm + 150mm)
	SATA (5Pin)	3 x SATA connectors (500mm + 150mm + 150mm) 3 x SATA connectors (500mm + 150mm + 150mm) 3 x SATA connectors (500mm + 150mm + 150mm)
	Peripheral (4Pin)	4 x Peripheral connectors (500mm + 150mm + 150mm + 150mm)
	Floppy Adapter	1 x Peripheral to Floppy adapter cable (150mm)



thermaltake

# TOUGHPower SERIES POWER SUPPLY

## TOUGHPower PF1 650W

GENERAL INFO	
P/N	PS-TPD-0650FNFAPx-1
Model	TTP-650AH2FKP
Max. Output Capacity	650W
Peak Output Capacity	780W
Color	Black
Dimension (W/H/D)	150mm(W) x 86mm(H) x 140mm(D)
PFC	Active PFC
Power Good Signal	100-500 msec
Hold-Up Time	> 16msec at 100% of full load
AC INPUT	
Input Current	10A
Input Frequency Range	50Hz - 60Hz
Input Voltage	100V – 240V~
ENVIRONMENTAL	
Operating Temperature	5°C to + 50°C
Operating Humidity	20% to 85%,non-condensing
Storage Temperature	-40°C to + 55°C
Storage Humidity	10% to 95%, non-condensing
Cooling System	12cm hydraulic bearing fan
MISCELLANEOUS	
Efficiency	Meet 80PLUS®Platinum at 115Vac input.
MTBF	120,000 hrs minimum
Safety Approval	CE/UL/TÜV/FCC/BSMI/CCC/ EAC
PCI-E CONNECTOR	
PCI-E 6+2pin	4



## Total Protection

Voltage Source	Over Voltage Protection
	Protection Point
+3.3V	3.76V~4.3Vmax
+5V	5.74V~7Vmax
+12V	13.4V~15.6Vmax
<b>Over Power Protection</b>	Protection at 110%~170% over peak load.
<b>Short Circuit Protection</b>	Activated when any DC rails short circuited.

## Packing

