



thermaltake

TOUGHPOWER SERIES
POWER SUPPLY

TOUGHPOWER GF2 ARGB 650W



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DATASHEET



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TOUGHPower SERIES POWER SUPPLY

TOUGHPower GF2 ARGB 650W

Patented



16.8 Million Colors
Ring Duo RGB Fan & ARGB Side Panels



GIGABYTE



Smart Zero Fan

Low Ripple Noise

Fully Modular
Flat Cables

100% Japanese
Capacitors



10 YEAR
Warranty



Features

- Patented 16.8M colors Ring Duo 14 RGB Fan and ARGB side panels.
- Addressable RGB lighting Synchronization with main stream motherboards.
- Smart Zero Fan: Minimizes undesired noise at low to medium load.
- Digital control on primary side (PFC/LLC controller).
- <30mV low ripple noise design & extremely strict voltage regulation $<\pm 2\%$.
- Fully modular low-profile flat black cables.
- 100% high quality Japanese 105°C/221°F capacitors.
- 80 PLUS® Gold certified up to 90% efficiency.
- 10 year warranty.
- 650W continuous output at 40°C/104°F operating environment.
- High efficiency Zero Cable Platform with premium build quality.
- 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)x160mm(D).
- Safety approvals: CE/CTUVus/TÜV/FCC/BSMI/EAC/S-Mark/C-TICK certifications.



Output Specification

AC Input	Input Voltage: 100V - 240V~ Input Current: 10A Frequency: 50Hz - 60Hz				
DC Output	+3.3V	+5V	+12V	-12V	+5VSB
Max Output Current	22A	22A	54.2A	0.3A	3A
Max Output Power	120W		650W	3.6W	15W
Total Power	650W				

Connect Specification

Connector						
Wattage	Main Power Connector (24Pin)	ATX 12V (4+4Pin)	SATA (5Pin)	PCI-E (6+2Pin)	Peripheral (4Pin)	FDD Adapter
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 (8pin/4+4pin)	1 x ATX 12V 8pin 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	3 x SATA connectors (500mm + 150mm + 150mm + 150mm) 3 x SATA connectors (500mm + 150mm + 150mm + 150mm) 3 x SATA connectors (500mm + 150mm + 150mm + 150mm)
	Peripheral	4 x Peripheral connectors (500mm + 150mm + 150mm + 150mm)
	Floppy Adapter	1 x Peripheral to Floppy adapter cable (150mm)



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Power Supply

TOUGHPower GF2 ARGB 650W

GENERAL INFO	
P/N	PS-TPD-0650F3FAGx-2
Model	TTP-650AH3FSG-A
Max. Output Capacity	650W
Peak Output Capacity	780W
Color	Black
Dimension (W/H/D)	150mm(W) x 86mm(H) x 160mm(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	0°C to + 40°C
Operating Humidity	20% to 90%,non-condensing
Storage Temperature	-40°C to + 70°C
Storage Humidity	20% to 95%, non-condensing
Cooling System	14cm hydraulic bearing fan
MISCELLANEOUS	
Efficiency	Meet 80 PLUS® Gold at 115Vac input.
MTBF	100,000 hrs minimum
Safety Approval	CE/cTUVus/TÜV/FCC/BSMI/EAC/S-Mark/C-TICK
PCI-E CONNECTOR	
PCI-E 6+2pin	4



Total Protection

Voltage Source	Over Voltage Protection	Over Current Protection
	Protection Point	
+3.3V	4.3Vmax	36A max.
+5V	7Vmax	36A max.
+12V	15.6Vmax	87A max.
Over Power Protection	Protection at 110%~150% over peak load.	
Over Temperature Protection	Protection temperature is 65°C±5°C at 115V and full load.	
Short Circuit Protection	Activated when any DC rails short circuited.	