



# TES150A series

## AC-DC Encapsulated POWER SUPPLY

### Features

- Universal AC input
- Protections:  
Short circuit / Overload /Over voltage
- Ultra Compact Size
- Single Outputs from 12 to 48V
- Encapsulated
- <0.3 W No Load Input Power
- -40 to +70°C Operation
- 3 Versions
  - TES150A (PCB Mounting) : 5" x 2.2"x 1.4"
  - TES150A-S (Screw terminal): 5"x 2.2"x1"
  - TES150A-DS(DIN Rail) : 5"x 2.2"x 1.3"

### PRELIMINARY



### Model information

Type	Model	Output Voltage	Output Current	Output Watt
PCB mounting	TES150A12-M	12 Vdc	12.5A	150W
	TES150A24-M	24 Vdc	6.25A	150W
	TES150A48-M	48 Vdc	3.13A	150W
Screw terminal	TES150A12-S	12 Vdc	12.5A	150W
	TES150A24-S	24 Vdc	6.25A	150W
	TES150A48-S	48 Vdc	3.13A	150W
DIN Rail (with Screw terminal)	TES150A12-DS	12 Vdc	12.5A	150W
	TES150A24-DS	24 Vdc	6.25A	150W
	TES150A48-DS	48 Vdc	3.13A	150W



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#### INPUT

Characteristic	Conditions	Min	Typ	Max	Units
Input Voltage		85		264	VAC
Input Frequency		47		63	Hz
No Load Power				0.3	W
Power Factor	At 230VAC, full load	0.9			

#### OUTPUT

Characteristic	Conditions	Min	Typ	Max	Units
Output Voltage			12/24/48		VDC
Hold Up time	At 115VAC		16		ms
Startup time					
Line Regulation	90VAC to 264VAC at full load		±0.5		%
Load Regulation	No load to full load		±1		%
Transient Response	Deviation with a 50%-75%-50% load change 1A/μs, recovering to <1% within 500μs			4	%
Ripple and Noise	20 MHz bandwidth and 10 μF electrolytic capacitor in parallel with 0.1 μF ceramic capacitor.			1	% (pk-pk)

#### PROTECTIONS

Characteristic	Conditions	Min	Typ	Max	Units
OverVoltage Protection	Latch	110		140	%
OverCurrent Protection	Hiccup Mode	120		160	%
Short Circuit Protection	Hiccup Mode, auto recovery				

Note: All specifications are typical at 25°C unless otherwise noted.



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### GENERAL SPECIFICATIONS

Characteristic	Conditions	Min	Typ	Max	Units
Isolation Voltage	Primary to Secondary		3000		VAC
Weight	TES150Axx-M				
	TES150Axx-S		TBA		g
	TES150Axx-DS				

### ENVIRONMENTAL

Characteristic	Conditions	Min	Typ	Max	Units
Operating Temperature		-40		70	°C
Storage Temperature		-40		85	°C
Altitude			3048		m
Humidity	non-condensing	5		95	%RH
Vibration	Built to meet IEC68-2-6, 10-500 Hz, 2 g 10 mins /sweep. 60 mins for each of 3 axes				

### SAFETY

Standard	Built to meet UL/IEC/EN 62368-1
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### EMC Built to meet the item below

Characteristic	Standard
Conducted Emissions	EN55032:2012 +AC:2013 (CISPR 32:2012), Class B
Radiated Emissions	EN55032:2012 +AC:2013 (CISPR 32:2012), Class B
Harmonic Current emissions	EN61000-3-2:2014, Class A
Voltage fluctuations & flicker	EN61000-3-3:2013
Electrostatic discharge	IEC 61000-4-2:2008, Criteria A
RS(Radiated)	IEC 61000-4-3:2010, Criteria A
Electrical fast transient/burst	IEC 61000-4-4:2012, Criteria A
Surge	IEC 61000-4-5:2014, Criteria A
Conducted Immunity	IEC 61000-4-6:2013
Magnetic Field	IEC 61000-4-8:2009, Criteria A
Dip, >95% reduction	IEC 61000-4-11:2004, Criteria A
Dip, 30% reduction	IEC 61000-4-11:2004, Criteria A
Interruptions, >95% reduction	IEC 61000-4-11:2004, Criteria B