TES300A series
AC-DC OPEN FRAME POWER SUPPLY

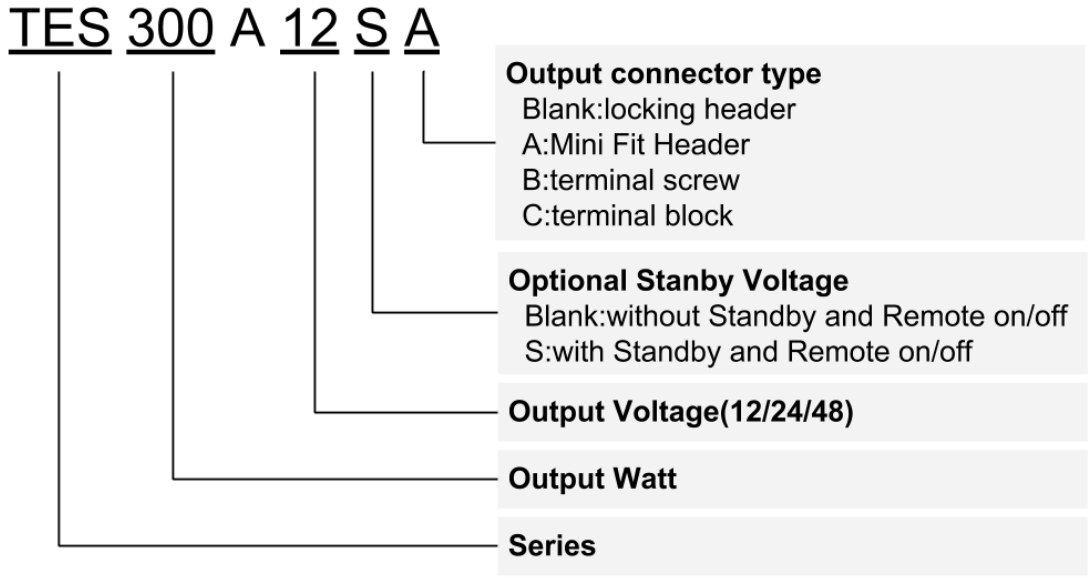
Features

- Up to 300 W Force-Cooled Ratings
- 220 W Convection-Cooled
- Low Profile 1.2" with 3"x 5"footprint
- No Load Input Power <0.5 W
- Efficiency up to 94%
- 12V Fan Output
- Optional 5V Standby Output & Remote On/Off Control
- Meet EMI EN55032
- ITE Safety Approval UL/IEC 60950-1 & UL/IEC/EN 62368-1

Model information

Model	Output Voltage	Main Output (Current, Watt)				12V Fan Output	5V standby output		Efficiency (Convection)
		Convection		Force-Cooled With 10CFM			Convection	Force-Cooled	
TES300A12	12Vdc	16.67A	200W	25A	300W	0.5A	NA		94%
TES300A24	24Vdc	9.17A	220W	12.5A	300W	0.5A			95%
TES300A48	48Vdc	4.59A	220W	6.25A	300W	0.5A			95%
TES300A12S	12Vdc	16.67A	200W	25A	300W	0.5A	1A	2A	94%
TES300A24S	24Vdc	9.17A	220W	12.5A	300W	0.5A	1A	2A	95%
TES300A48S	48Vdc	4.59A	220W	6.25A	300W	0.5A	1A	2A	95%

Part Number



INPUT

Characteristic	Conditions	Min	Typ	Max	Units
Input Voltage		85		264	VAC
Input Current			5		A
Input Frequency		47		63	Hz
Inrush Current	At 230VAC, cold start@25degC			100	A
No Load Power				0.5	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			10		ms
Line Regulation	90VAC to 264VAC at full load			±0.5		%
Load Regulation	No load to full load			±1		%
Transient Response	Load step from 50%-75%-50% change at 1A/µs, recovering within 1% Vout.	Peak Deviation Recovery time		4% 500		Vout µs
Ripple and Noise	20 MHz bandwidth and 10 µF electrolytic capacitor in parallel with 0.1 µF ceramic capacitor.				1	%(pk-pk)

STANDBY OUTPUT

Characteristic	Conditions	Min	Typ	Max	Units
Line Regulation	90VAC to 264VAC at full load		±1		%
Load Regulation	No load to full load		±1		%
Ripple and Noise	20 MHz bandwidth and 10 µF electrolytic capacitor in parallel with 0.1 µF ceramic capacitor.		1		% (pk-pk)
Remote On/Off	Connect pin 3 of CN4 to pin 1 to turn main output off. Connect to pin 2 or leave open to turn main output on.				

PROTECTIONS

Characteristic	Conditions	Min	Typ	Max	Units
Over Voltage Protection	% of Vout(nom.) Latch	110		140	%
Over Current Protection	% of iout rated; Hiccup Mode	120		160	%
Short Circuit Protection	Hiccup Mode, auto recovery				
Over-Temp Protection	Hiccup Mode, auto recovery				

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

GENERAL SPECIFICATIONS

Characteristic	Conditions	Min	Typ	Max	Units
Isolation Voltage	Primary to Secondary		3000		VAC
	Primary to Earth		1500		
	Secondary to Earth		1500		
Weight	TES300Axx		250		g
	TES300AxxS		270		

ENVIRONMENTAL

Characteristic	Conditions	Min	Typ	Max	Units
Operating Temperature		-40		70	°C
Storage Temperature		-40		85	°C
Cooling	Forced Cool with 10 CFM				
Altitude			5000		m
Humidity	non-condensing	5		95	%RH
Vibration	IEC68-2-6, 10-500 Hz, 2 g 10 mins /sweep. 60 mins for each of 3 axes				
Shock	IEC68-2-27, 30 g, 11 ms half sine, 3 times in each of 6 axes				

SAFETY

Standard	UL/IEC/EN 62368-1 UL/IEC/EN 60950-1

EMC

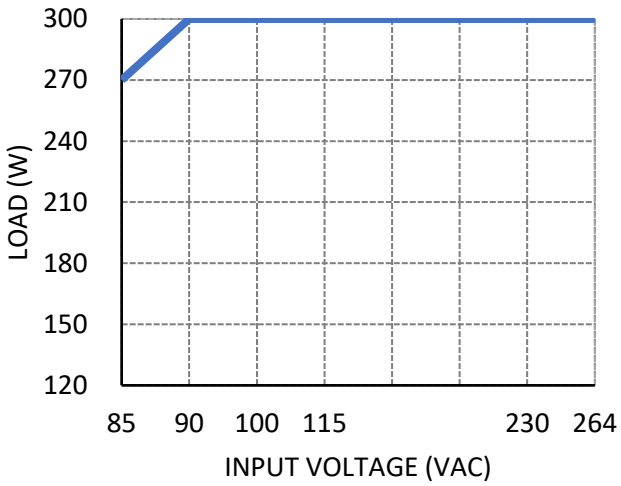
Characteristic	Standard
Conducted Emissions	EN55032:2012 +AC:2013 (CISPR 32:2012), Class B
Radiated Emissions	EN55032:2012 +AC:2013 (CISPR 32:2012), Class A; Add Ferrite core in input and output side for Class B
Harmonic Current emissions	EN61000-3-2:2014, Class A
Voltage fluctuations & flicker	EN61000-3-3:2013
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 C*

Note*: The EUT was stopped operating during the test, but it's self-recoverable after test

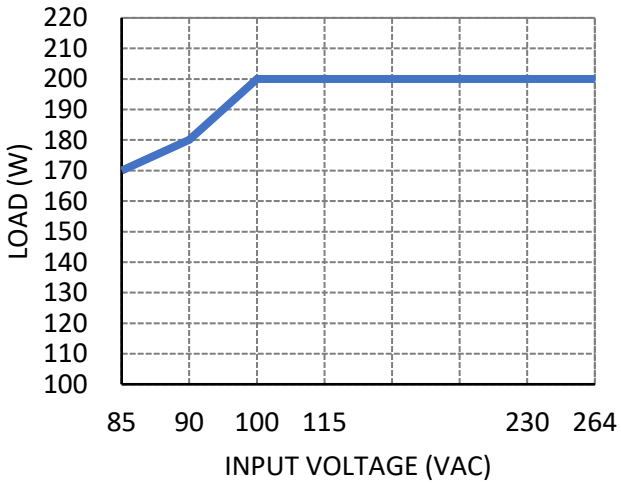
Derating Curves

Output Load VS. Input Voltage

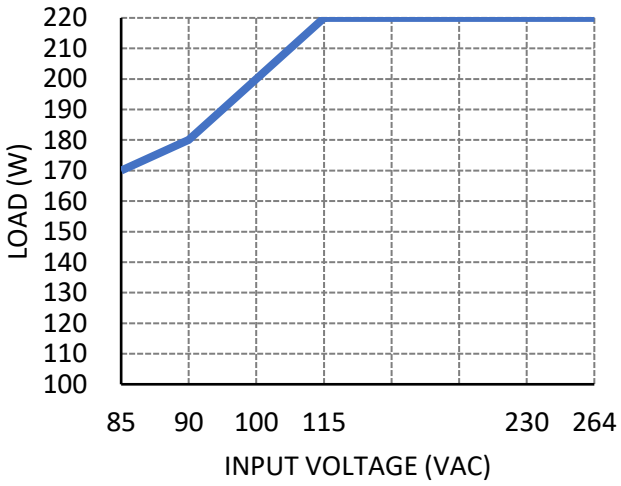
Forced cool with 10 CFM



Convection cool-TES300A12

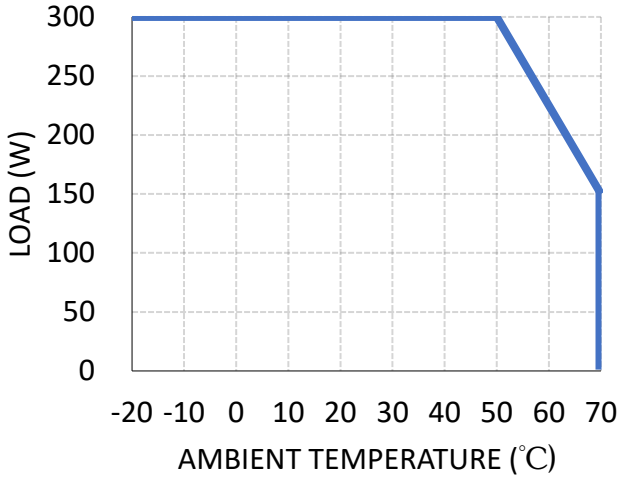


Convection cool-TES300A24/48

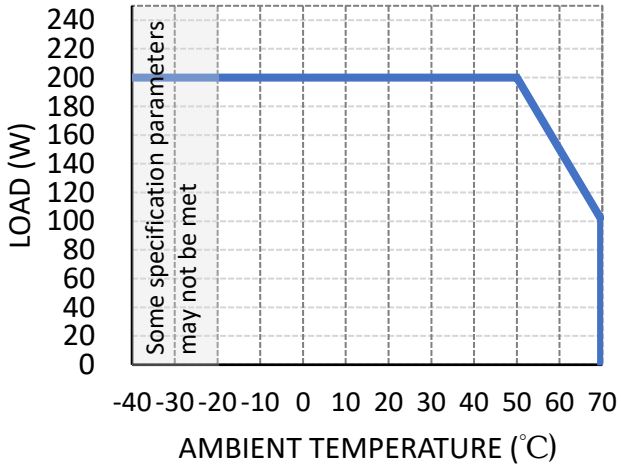


Output Load VS. Ambient Temperature

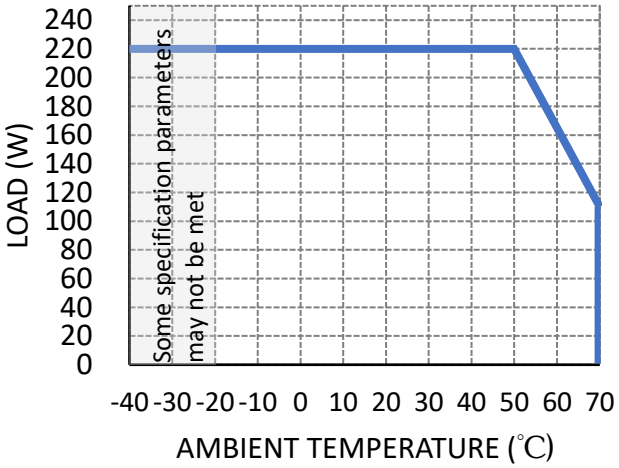
Forced cool with 10 CFM



Convection cool-TES300A12

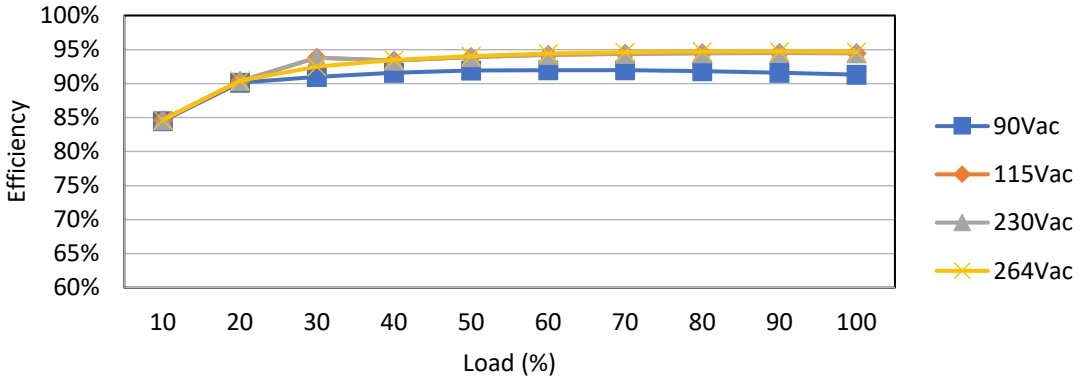


Convection cool-TES300A24/48

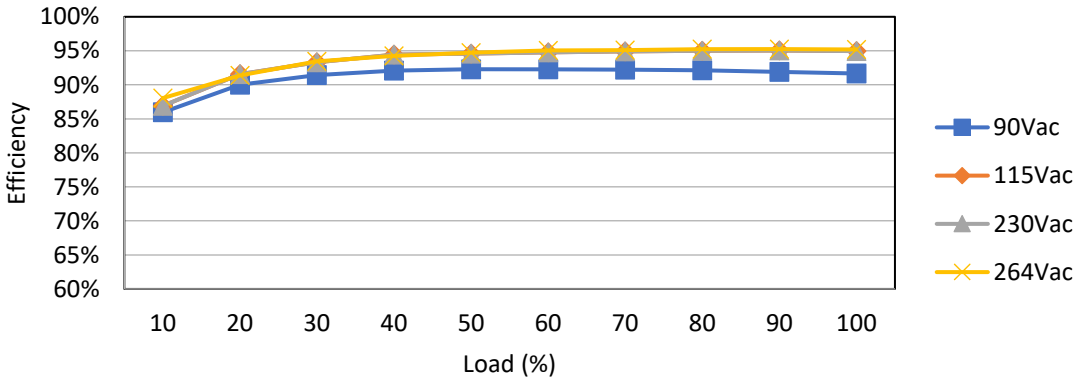


Efficiency (against input voltage)

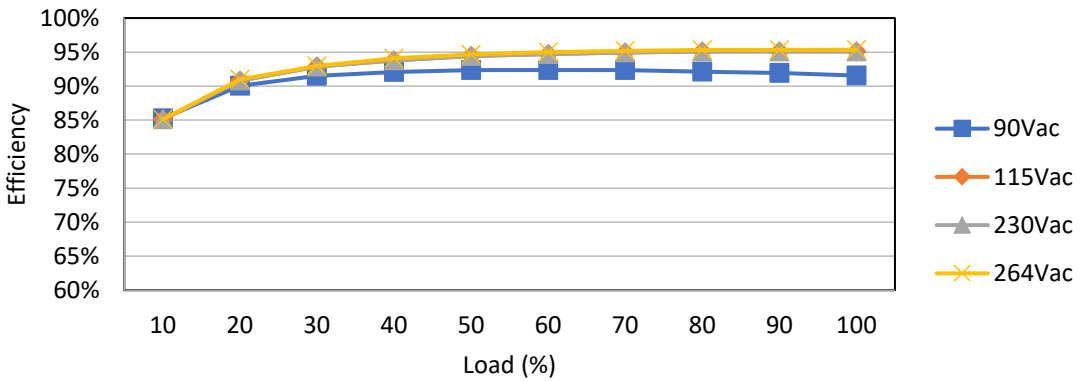
TES300A12



TES300A24

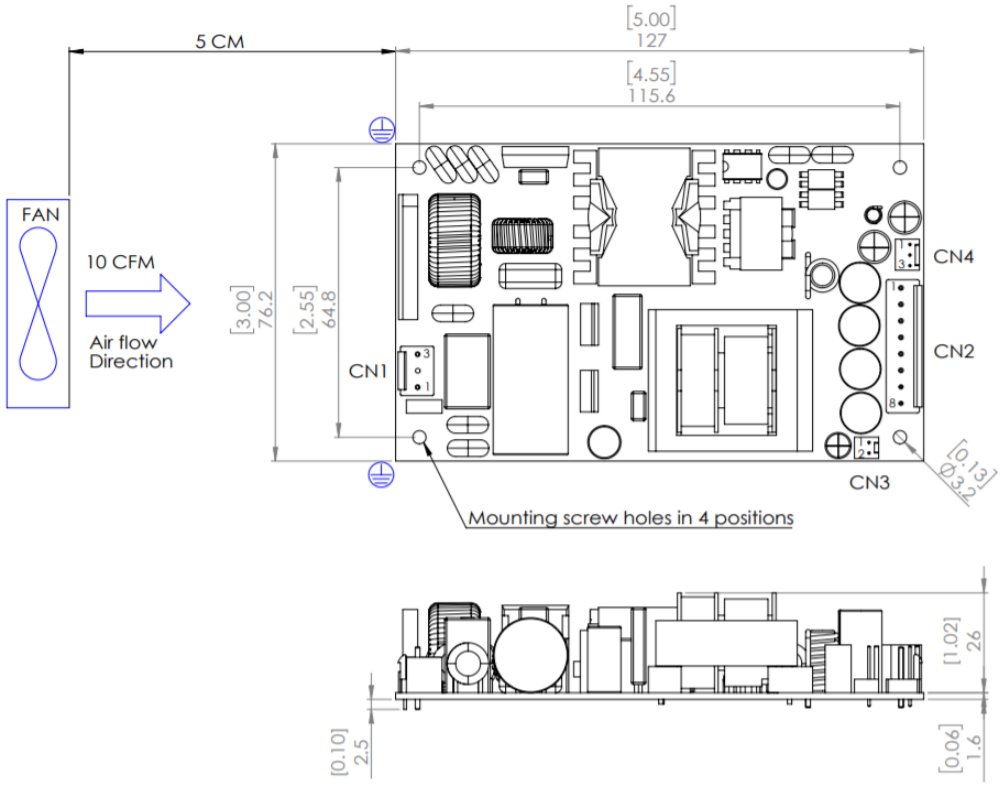


TES300A48



Mechanical Drawing

TES300AXXS



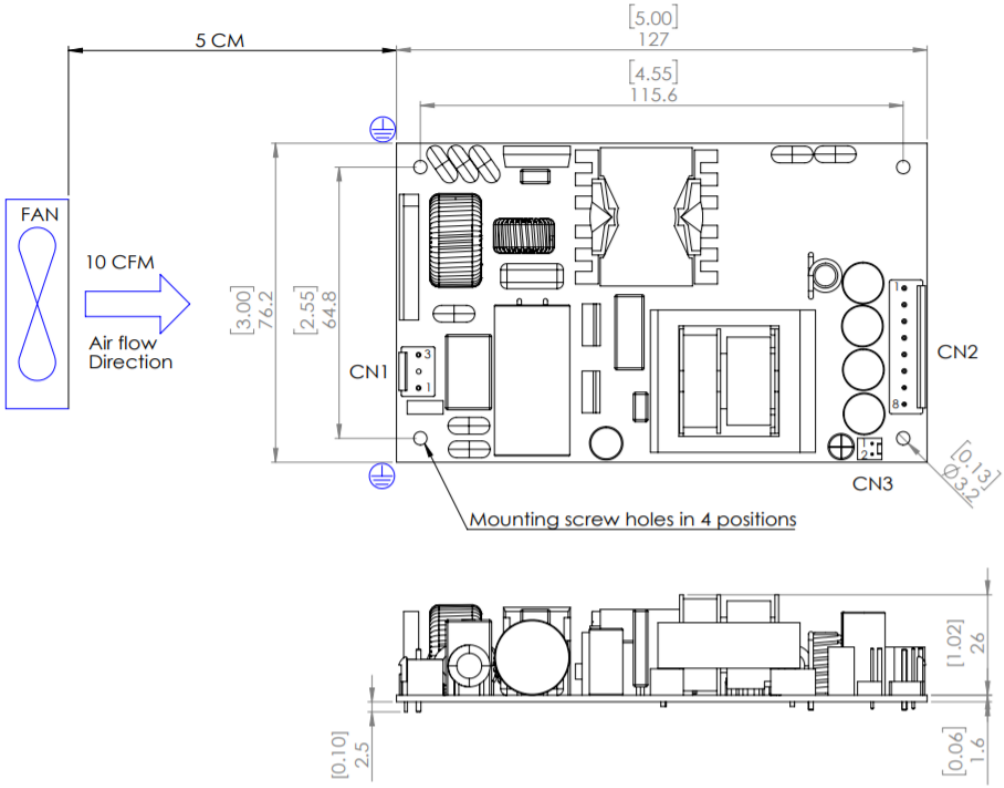
CN1-Input Connector	
Pin 1	Line
Pin 2	Not Fitted
Pin 3	Neutral

CN2-Output Connector	
Pin 1	+ Vout
Pin 2	+ Vout
Pin 3	+ Vout
Pin 4	+ Vout
Pin 5	Com
Pin 6	Com
Pin 7	Com
Pin 8	Com

CN3-Fan Connector	
Pin 1	Fan +
Pin 2	Fan -

CN4-Output Connector	
Pin 1	+ Vout
Pin 2	Com
Pin 3	Remote ON/OFF

TES300AXX



CN1-Input Connector	
Pin 1	Line
Pin 2	Not Fitted
Pin 3	Neutral

CN2-Output Connector	
Pin 1	+ Vout
Pin 2	+ Vout
Pin 3	+ Vout
Pin 4	+ Vout
Pin 5	Com
Pin 6	Com
Pin 7	Com
Pin 8	Com

CN3-Fan Connector	
Pin 1	Fan +
Pin 2	Fan -

Note1: Mounting holes marked with ⏚ must be connected to safety earth.
Note2: CN1-4 all mate with JST housing.