



**SILVERSTONE**<sup>®</sup>  
Designing Inspiration

# ADAPTER SERIES AD120-T

120W AC adapter for laptops &  
Intel Small Form Factor PCs

Max. 120W 19V DC with 6.32A output

Slim 25mm thickness design enables easy portability or hideaway placement

Up to 90% efficiency with Energy Star EPS 2.0 and ErP Lot 7 Tier 2 compliance

Includes 7 charger tips for maximum compatibility with most high-end laptops

Easy to install and use

Built-in multiple protection circuitry for maximum protection during operation



## Installation

SilverStone AD120-T is a 120W AC to DC adapter intended for use with laptop & Intel Small Form Factor motherboards or PCs. It is also perfect for use with SilverStone's own Vital series cases.

The AD120-T can reach up to 90% efficiency and is environmentally friendly as it complies with Energy Star EPS 2.0 and ErP Lot 7 Tier 2 standards. There are 7 charger tips included so it is compatible with most high-end laptops or devices that require external power supply.

With plethora of protection circuitry built-in, the AD120-T is an excellent choice for replacing or upgrading any mobile or small form factor PC's power source.

<http://www.silverstonetek.com>

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# SPECIFICATION

## Adapter Series

### AD120-T

#### 120W 19Vdc AC-DC ADAPTER

#### 1. Input Characteristics:

ITEM	CONDITION	SPECIFICATION	
1.1 Rated Input Voltage:		100Vac~240Vac	
1.2 Input Voltage Range:		90Vac to 264Vac	
1.3 Input Frequency Range:		47Hz to 63Hz ( ± 1Hz )	
1.4 Input Current:	100Vac, 240Vac / 6.32A load	£ 1.8A	
1.5 Input Current Harmonic:		IEC61000-3-2	
1.6 Efficiency: (Warm up 10minutes later)	100Vac / 6.32A load 240Vac / 6.32A load	≥90%	※ Meet : (1) 【ErP】 Energy-related Products (2) 【DOE】 Department of Energy
1.7 Power Saving:	115Vac, 230Vac / 0A load 115Vac, 230Vac / 13.15mA load(0.25W)	≤ 0.15W ≤ 0.5W	
1.8 Inrush Current:	100Vac, 240Vac / 6.32A load	Shall be less than the rating of adapter critical component (including rectifiers, fuse surge and current limiting device)	

#### 2. Output Characteristics:

ITEM	CONDITION	SPECIFICATION	
2.1 Output Rated Voltage:		19V	
2.2 Output Current:	at constant voltage mode	0A to 6.32A	
2.3 Output Voltage Setting:	at the output end of DC cable	19V ± 5%	
2.4 Output Voltage Ripple and Noise: (0.1uF Ceramic Cap. and 35V 47uF Aluminum Cap. Paralleled between the end of output cable)	100Vac, 240Vac / 0A~6.32A load	≤ 350mVp-p	
2.5 Turn-On Delay Time:	At 100Vac / 6.32A load, output voltage shall remain regulation	≤ 3Sec	

ITEM	CONDITION	SPECIFICATION
2.6 Hold Up Time:	At 100Vac or 240Vac / 6.32A load, output voltage shall remain regulation	$\geq 10\text{ms}$
2.7 Rise Time:	At 100Vac / 6.32A load, DC output rise time from 5% to 95% of $V_o$	$\leq 50\text{ms}$
2.8 Dynamic Load Change:	(1) Output load step is : 【1】 0 % ~ 50 % 【2】 50 % ~ 100 % (2) S/R=0.5A/us (3) Frequency is 100Hz and 1KHz	$19\text{V} \pm 10\%$
2.9 Overshoot:	100Vac, 240Vac / 0A and 6.32A load	$19\text{V} \pm 10\%$

### 3. Protection Characteristics:

ITEM	CONDITION	SPECIFICATION
3.1 Short Circuit Protection:	When an internal fault occurs, or an external fault is applied to the power supply, such that an overload or short circuit is applied to the output, the power supply shall shut down and enter auto-recovery mode.	Shutdown and no damage
3.2 Over Voltage Protection:	The adapter will enter into shut down that means no output while over voltage happened at output terminal that caused by internal fault, the output trip voltage shall not exceed 29 volts. That will be return to normal state by AC reset.	Shutdown and no damage
3.3 Over Power Protection:	When an internal fault occurs, or an external fault is applied to the power supply, such that an overload or short circuit is applied to the output, the power supply shall shut down and enter auto-recovery mode.	Shutdown and no damage
3.4 Over Temperature Protection:	The power supply will enter into shut down while the abnormal thermal rise occurs. That will be return to normal state by AC reset.	No fire, no smoke

## 4. Environmental Characteristics:

ITEM	CONDITION	SPECIFICATION
4.1 Electric Fast Transients: Refer to IEC61000-4-4	Impulse: $\pm$ 1kV applied to L,N	Normal operation shall be continued
4.2 Lightning Surge: Refer to IEC61000-4-5	1kV applied differential mode 2kV applied common mode	Normal operation shall be continued
4.3 Electron Static Discharge: (Refer to IEC61000-4-2 Energy Storage Capacitor 150pF; Discharge Resistor 330)	Air Discharge: $\pm$ -15 KV Contact Discharge: $\pm$ - 8 KV	Normal operation shall be continued
4.4 Cooling:	Natural air cooling	--
4.5 EMI: Adapter comply with the following national standards:  EMI Conducted Emission  EMI Radiated Emission	1.Full Load  2. The power supply with internal filter can meet.	FCC PART 15J CLASS B  CISPR22 EN55022 CLASS B  VCCI LEVEL П
4.6 Safety conforming:	--	Regulated by customer
4.6.1 Energy-related Products [ErP] Department of Energy [DOE]	--	Comply with ErP standard Comply with DOE standard
4.7 Leakage Current:	264Vac / 50Hz	$\leq$ 0.25mA
4.8 Dielectric Strength: (Hi-Pot)	Between AC input and secondary applied AC 1.5KV / test time 1 minute / cut off current shall be less than 10mA	--

ITEM	CONDITION	SPECIFICATION
4.9 Temperature:	Operating Storage	0 to 40°C -20 to +80°C
4.10 Humidity:	Operating Storage	20% ~ 80% 10% ~ 90%

*CAN ICES-3 (B) / NMB-3(B)*

**This device complies with Part 15 of the FCC Rules  
Operation is subject to the following two conditions:**

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

*SilverStone Technology Co., Ltd.*

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