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TECHINCAL DATASHEET

AC-DC Adapter
12 V 150 W / ADT-150B12AA J-A



ADT-150B

Highlights & Features

- Meet efficiency DoE Level VI & CoC Tier 2
- No load power consumption < 0.15 W
- Universal AC input / Full range
- Fully enclosed plastic case
- Protection: short circuit / over voltage / overload/ over temperature

Safety Standards

CB Certified for worldwide use

Model Number: ADT-150B12AA J-A
Unit Weight 0.54 Kg
Dimensions (L×W×H): 155 x 76 x 30 mm

General Description

The ADT Series of AC-DC desktop adapter in compact size. ADT-150B12AA J-A meet the DoE Level VI and CoC Tier 2 energy efficiency requirements with levels up to 90% and the extremely low no-load power consumption below 0.15 W. The series conform to major international safety standards according to IEC/EN/UL 62368-1 and IEC/EN 60950-1 approval for ITE. In addition, they also meet the EMI approvals to EN/BS EN 55032 class B.

Model Information

Model Number	Input Voltage Range	Efficiency Level	Rated Output Voltage	Rated Output Current
ADT-150B12AA J-A	90-264 Vac	Level VI & CoC Tier2	12 V	12.5 A

Model Numbering

ADT -	150	B	12	A	A	J -	A
Desktop Adapter for ITE application	Max wattage	Family Code	Output Voltage - 12 for 12 V	A : Desktop	A : C6 connector	Plug, molding type J : Barrel type O.D: 7.4 mm, I.D: 5.1 mm, length: 11.0 mm	Standard

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Specifications

Input Ratings / Characteristics

Nominal Input Voltage		100-240 Vac
Input Voltage Range		90-264 Vac
Nominal Input Frequency		50-60 Hz
Input Frequency Range		47-63 Hz
Input Current (max)	115 Vac	2.0 A
	230 Vac	1.0 A
Efficiency at 100% Load	115 Vac	89% typ.
	230 Vac	90% typ.
Average Efficiency (min)		89% @ 115 Vac & 230 Vac
Efficiency @ 10% load		79% @ 115 Vac & 230 Vac
No Load Power Consumption (max)		0.15 W @ 115 Vac & 230 Vac
Power Factor @ 100% load (min)		0.9 @ 230 Vac
Inrush Current		No damage
Leakage Current (max) .		0.1 mA @ 240 Vac / 50 Hz

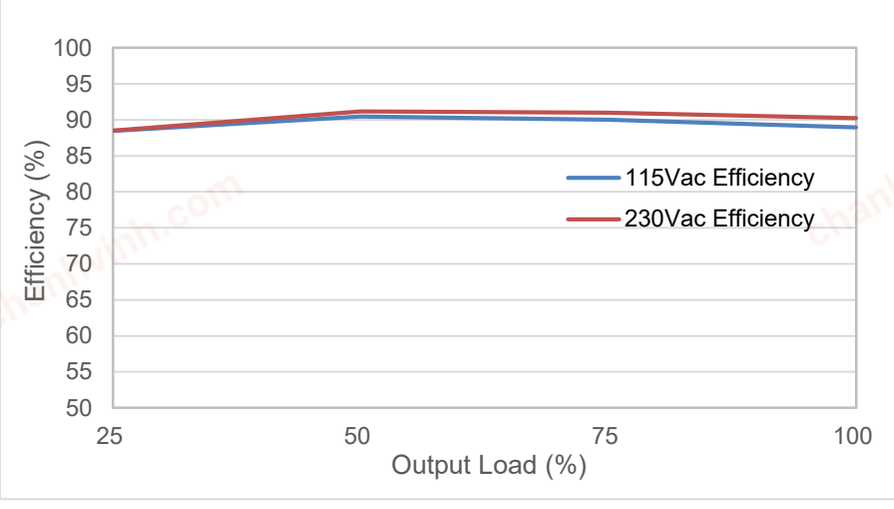


Fig 1. ADT-150B12AA J-A Efficiency versus Output Load

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Output Ratings / Characteristics

Nominal Output Voltage		12 V
Output Current		0-12.5 A
Output Power		150 W
Line Regulation		± 0.5%
Load Regulation		± 4.5%
PARD* (20 MHz)	0 to 40°C	240 mV pk-pk
	-10 to 0°C	480 mV pk-pk
Start-up Time (max)	115 Vac	1000 ms
	230 Vac	500 ms
Rise Time (max)		40 ms @ nominal input, full load
Hold-up Time (typ.)		40 ms @ 115 Vac, full load
Transient Responses		± 5% @ 0.1 A -50% & 50% -100% load change, Slew rate 2.5 A/us ,100 to 10 KHz, 50% Duty Cycle
Capacitive load (max)		470 uF

*PARD is measured with an AC coupling mode, and in parallel with 0.1 uF ceramic capacitor & 47 uF electrolytic capacitor.

Mechanical

Case		PC
Dimensions (L × W × H)		155 x 76 x 30 mm (6.1 x 3.0 x 1.2 inch)
Unit Weight		0.54 kg (1.19 lb)
Indicator		N/A
Cooling System		Convection
Output Cable Specification	Connector	Barrel type (O.D: 7.4 mm, I.D: 5.1 mm, length: 11.0 mm)
	Length	UL1571 #14AWG, 1200 mm
Input Socket		C6

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Environment

Surrounding Temperature	Operating	-10°C to +60°C
	Storage	-40°C to +85°C
Power De-Rating		>40°C de-rated by 2.5%/°C
Operating Humidity		5%-95% RH (non-condensing)
Operating Altitude		5,000 meters (16,400 feet)
Ball Impact Test		Test height 130 cm, 1 sample 1 time, Steel Ball 500 g, Concrete floor
Drop Test		Test height 100 cm, 6 face for each sample, concrete floor Function test pass after drop test
Shock Test (Non-Operating)		50 G, 11 ms, 1 shock for each direction
Vibration (Non-Operating)		5-500 Hz, 2.09 Grms, 20 mins, one cycle for each three axis

Protections

Overvoltage (max)	18 V, Latch mode
Overload / Overcurrent	120-180% , Latch
Over Temperature	Latch Mode
Short Circuit	Latch Mode
Pollution Degree	2
Protection Against Shock	Class I

Reliability Data

MTBF	> 300,000 hrs. per Telcordia SR-332 @ 100 Vac, 100% load, Ta: 25°C
Expected Cap Life Time	5 years @ 100 Vac,50% load, 25°C

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Safety Standards / Directives

Electrical Safety		IEC/ EN 60950-1 ; IEC/UL/EN 62368-1
		BSMI CNS 14336-1
		CCC GB 4943.1-2011
		PSE J 60950-1 (H29)
		KC K 60950-1
CE		Comply with EMC Directive 2014/30/EU and the Low Voltage Directive 2014/35/EU
UKCA		In conformance with Electromagnetic Compatibility Regulations 2016 and Electrical Equipment (Safety) Regulations 2016
Galvanic Isolation	I/P to O/P	3000 Vac

EMC

EMC / Emissions		CISPR/EN/BS EN 55032 Class B BSMI CNS13438 GB/T 9254-2008 KN 32
Harmonic Current Emissions	IEC 61000-3-2	Class D ; GB17625.1-2003
Immunity to		EN/BS EN 55024; KN 35
Radiated and Conducted Emissions		Conducted Emissions: EN/BS EN 55032 Class B Radiated Emissions: EN/BS EN 55032 Class B
Voltage Flicker	IEC 61000-3-3	
Electrostatic Discharge	IEC 61000-4-2	Level 4 Criteria A[1)] Air Discharge: 15 kV Contact Discharge:8 kV
Radiated Field	IEC 61000-4-3	Level 2 Criteria A[1)] 80 MHz - 1 GHz, 3 V/m , 80% AM (1 KHz)
Electrical Fast Transient / Burst	IEC 61000-4-4	Level 3 Criteria A[1)]: 2 kV
Surge	IEC 61000-4-5	Level 3 Criteria A[1)] Common Mode[4)]: 2 kV Differential Mode[5)]: 1 kV
Conducted	IEC 61000-4-6	Level 2 Criteria A[1)] 150 kHz – 80 MHz, 3 Vrms, Sine Wave, 80%, AM modulation
Power Frequency Magnetic Fields	IEC 61000-4-8	Level 1 Criteria A[1)] Magnetic field strength 1 A/m
Voltage Dips	IEC 61000-4-11	Voltage dips 70% reduction/0.5 periods (Criterion A[1)]) 40% reduction/5 periods (Criterion B[2)]) Voltage short interruptions 5% reduction/250 periods (Criterion C[3)])

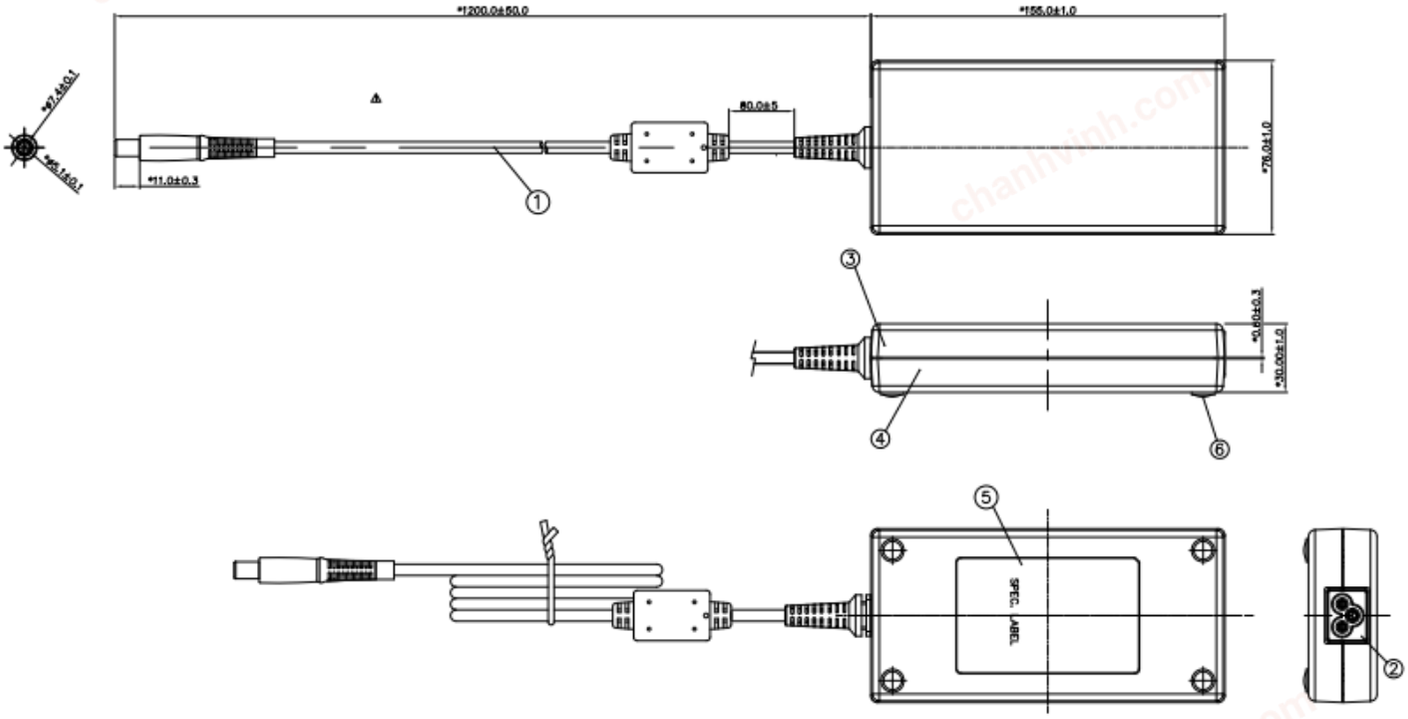
1) Criteria A: Normal performance within the specification limits
2) Criteria B: Output out of regulation, or shuts down during test. Automatically restore to normal operation after test.
3) Criteria C: PSU shuts down during test, but need operator to reset.
4) Asymmetrical: Common mode (Line to earth)
5) Symmetrical: Differential mode (Line to line)

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Dimensions

L x W x H: 155 x 76 x 30 mm (6.1 x 3.0 x 1.2 inch)



Engineering Data

Output Load De-rating V.S. Surrounding Air Temperature

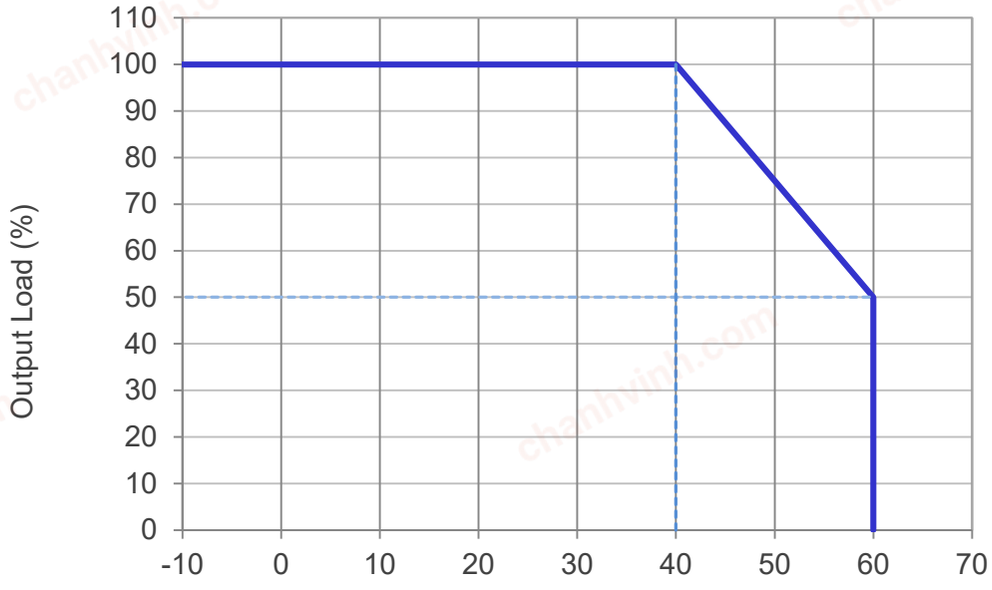


Fig. 2 De-rating for All Mounting Orientation
> 40°C de-rate power by 2.5% / °C

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Others

PFC – Norm EN 61000-3-2



Line Current Harmonic content

Typically, the input current waveform is not sinusoidal due to the periodical peak charging of the input capacitor. In industrial environment, complying with EN 61000-3-2 is only necessary under special conditions. Complying to this standard can have some technical drawbacks, such as lower efficiency as well as some commercial aspects such as higher purchasing costs. Frequently, the user does not profit from fulfilling this standard, therefore, it is important to know whether it is mandatory to meet this standard for a specific application.

Attention

Delta provides all information in the datasheets on an “AS IS” basis and does not offer any kind of warranty through the information for using the product. In the event of any discrepancy between the information in the catalog and datasheets, the datasheets shall prevail (please refer to www.DeltaPSU.com for the latest datasheets information). Delta shall have no liability of indemnification for any claim or action arising from any error for the provided information in the datasheets. Customer shall take its responsibility for evaluation of using the product before placing an order with Delta.

Delta reserves the right to make changes to the information described in the datasheets without notice.

Manufacturer and Authorized Representatives Information

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