# AC/DC Converter

- Universal 85-264VAC (277VAC available) or 120-370VDC (390VDC available) input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range -40℃ to +70℃
- High I/O isolation voltage up to 4000VAC
- Industrial-grade design
- OVC III (EN61558-1 standards)
- Low standby power consumption, high efficiency
- Low ripple & noise
- Output short circuit, over-current, over-voltage pretection
- DIN rail TS35X7.5/ TS35X15 mountable

# ASDT15-20XXP

RoHS

*3-Year Warranty*

## Description

*ASDT15-20XXP products offer a high level of stability and immunity to noise, compliant with international IEC62368 standards for EMC and safety sepecifitions meet IEC/EN61000-4, CISPR32/EN55032, UL62368, EN62368, IEC62368, IEC/EN61010, IEC/EN61558 and IEC60335. These light weight AC-DC converters also have an extremely compact design for space saving and are ideal for applications such as industrial control equipment machinery and all kinds of applications in a harsh environment.*

## Selection Guide

| Certification | Part No. | Output Power (W) | Nominal Output Voltage and Current (Vo/Io) | Output Voltage Adjustable Range ADJ(V)* | Efficiency at 230VAC (%) Typ. | Capacitive Load (μF) Max. |
|---|---|---|---|---|---|---|
| / | ASDT15-2005P | 12 | 5V/2.4A | 4.5-5.5 | 80 | 2000 |
| | ASDT15-2012P | 15 | 12V/1.25A | 10.8-13.8 | 85 | 1500 |
| | ASDT15-2015P | 15 | 15V/1A | 13.5-18.0 | 85.5 | 1100 |
| | ASDT15-2024P | 15.2 | 24V/0.63A | 21.6-29.0 | 86 | 700 |
| | ASDT15-2048P | 15.4 | 48V/0.32A | 43.2-55.2 | 87 | 300 |

Note: *The actual adjustment range may extend outside the values stated, care should be exercised to ensure that the output voltage and power levels remain within the published maximum values.
**The BIS logo is printed on the side of products shipped to India only.

# Input Specifications

| Item | Operating Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Input Voltage Range | AC input | 85 | -- | 264 | VAC |
| | DC input | 120 | -- | 370 | VDC |
| Input Frequency | | 47 | -- | 63 | Hz |
| Input Current | 115VAC | -- | -- | 0.5 | A |
| | 230VAC | -- | -- | 0.25 | |
| Inrush Current | 115VAC | -- | 15 | -- | |
| | 230VAC | -- | 25 | -- | |
| Leakage Current | 240VAC | 0.5mA | | | |
| Hot Plug | | Unavailable | | | |

# Output Specifications

| Item | Operating Conditions | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Output Voltage Accuracy | 0% - 100% load | 5V output | -- | ±2 | -- | % |
| | | Other output | -- | ±1 | -- | |
| Line Regulation | Rated load | | -- | ±0.5 | -- | |
| Load Regulation | 230VAC | | -- | ±1 | -- | |
| Output Ripple & Noise* | 20MHz bandwidth (peak-to-peak value) | 5V output | -- | -- | 80 | mV |
| | | 12V output | -- | -- | 120 | |
| | | 15V output | -- | -- | 120 | |
| | | 24V output | -- | -- | 150 | |
| | | 48V output | -- | -- | 240 | |
| Temperature Coefficient | | | -- | ±0.02 | -- | %/°C |
| Stand-by Power Consumption | 230VAC input | | -- | -- | 0.3 | W |
| Short Circuit Protection | | | Hiccup, continuous, self-recovery | | | |
| Over-current Protection | Constant voltage mode | | ≥110% Io, self-recovery | | | |
| | Constant current mode | | Constant current limiting within 50% -100% rated output voltage, recovers automatically after fault condition is removed, it is not recommended to use when the output voltage <50% | | | |
| Over-voltage Protection | 5V output | | ≤6.75V | Output voltage hiccup | | |
| | 12V output | | ≤16.2V | | | |
| | 15V output | | ≤22.5V | | | |
| | 24V output | | ≤36V | | | |
| | 48V output | | ≤64.8V | | | |
| Minimum Load | | | 0 | -- | -- | % |
| Start-up Time | | | -- | -- | 2 | s |
| Hold-up Time | 115VAC | | -- | 12 | -- | ms |
| | 230VAC | | -- | 30 | -- | |

Note: *The "Tip and barrel method" is used for ripple and noise test, using a 12” twisted pair-wire terminated with a 0.1uf ceramic capacitor & 47uf parallel capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information.

# General Specifications

| Item | | Operating Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Isolation | Input - output | Electric Strength Test for 1min., (leakage current＜5mA) | 4000 | -- | -- | VAC |
| Operating Temperature | | | -40 | -- | +70 | ℃ |
| Storage Temperature | | | -40 | -- | +85 | |
| Storage Humidity | | | -- | -- | 95 | %RH |
| Operating Altitude | | | -- | -- | 2000 | m |
| Switching Frequency | | | -- | 65 | -- | kHz |
| Power Derating | | -40℃ to -30℃ | 5.0 | -- | -- | %/℃ |
| | | +50℃ to +70℃ | 2.5 | -- | -- | |
| | | 85VAC - 100VAC | 1.34 | -- | -- | %/VAC |
| Safety Standard | | | IS13252 (Part1) safety approved & EN62368-1, BS EN 62368-1 (Report); Design refer to UL/IEC62368-1, IEC/EN61010-1, IEC/EN61558-1, IEC60335-1 | | | |
| Safety Class | | | CLASS I I | | | |
| MTBF | | MIL-HDBK-217F@25°C | > 300,000 h | | | |

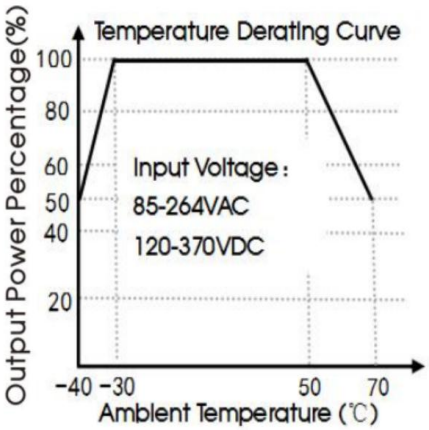
# Mechanical Specifications

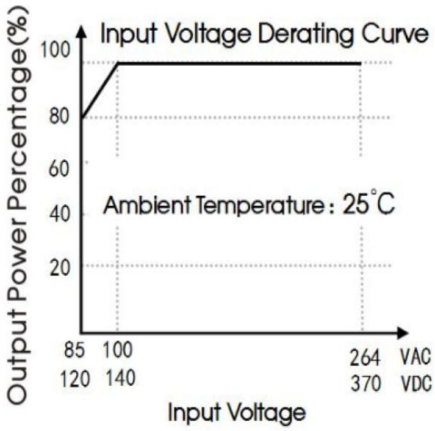
| | |
|---|---|
| Case Material | Plastic, heat-resistant (UL94V-0) |
| Package Dimensions | 90.00 x 58.00 x 17.50mm |
| Weight | 60g (Typ.) |
| Cooling Method | Free air convection |

# EMC Specifications

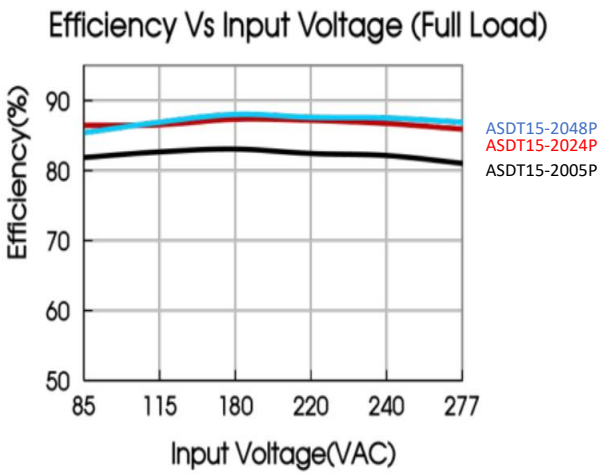
| | | |
|---|---|---|
| Emissions | CE | CISPR32/EN55032 CLASS B |
| | RE | CISPR32/EN55032 CLASS B |
| | Harmonic current | IEC/EN61000-3-2 CLASS A |
| Immunity | ESD | IEC/EN61000-4-2 Contact ±4KV/ Air ±8KV Perf. Criteria A |
| | RS | IEC/EN61000-4-3 10V/m Perf. Criteria A |
| | EFT | IEC/EN61000-4-4 ±2KV Perf. Criteria A |
| | Surge | IEC/EN61000-4-5 line to line ±1KV Perf. Criteria A |
| | CS | IEC/EN61000-4-6 10Vr.m.s Perf. Criteria A |
| | Voltage dips, short interruptions and voltage variations immunity | IEC/EN61000-4-11 100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods Perf. Criteria B |

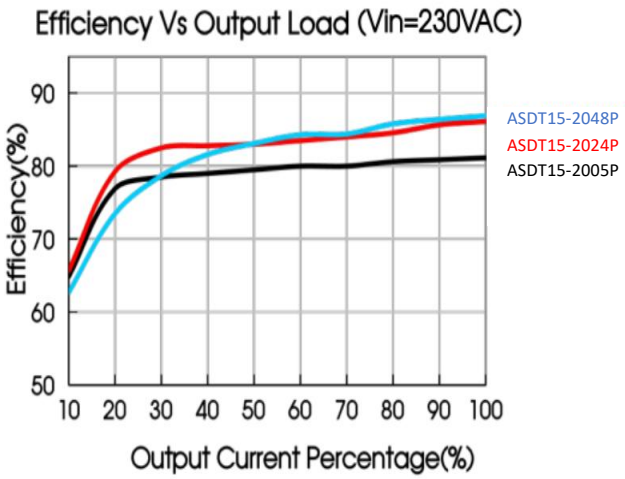
# Product Characteristic Curves



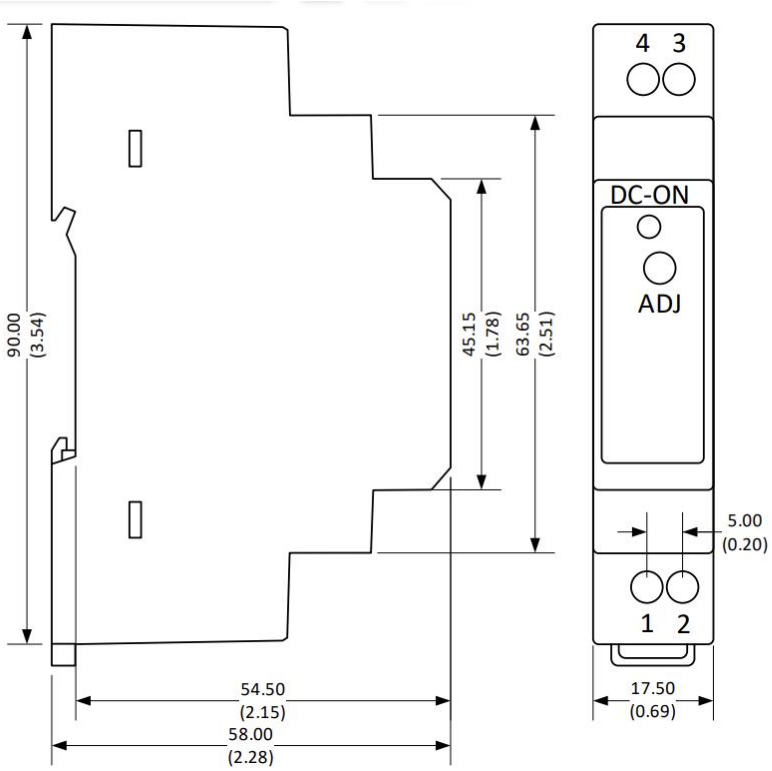




Note: ① With an AC input between 85-100VAC and a DC input between 120-140VDC, the output power must be derated as per temperature derating curves;



# Dimensions and Recommended Layout




| Pin Output Specifications | |
|---|---|
| Pin | Function |
| 1 | Input (N) |
| 2 | Input (L) |
| 3 | -V Output |
| 4 | +V Output |
| ADJ | Voltage adjustment |

Note:
Unit: mm (inch)
General tolerance : ±1.0 (0.04)
Wire gauge : 24 - 12AWG
Tightening torque : 0.4N·m Max.
Mounting rail : TS35,
Rail must be connected to safety ground

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75% with nominal input voltage and rated output load;
2. All index testing methods in this datasheet are based on our company corporate standards;
3. We can provide product customization service, please contact our technicians directly for specific information;
4. Specifications are subject to change without prior notice.