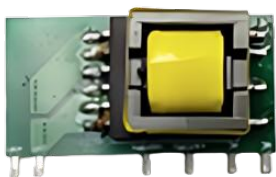


## ACSW15W-xxV



### FEATURES

- Input voltage range: 176 - 528VAC (248~745VDC)
- Working temperature range: -40°C to +85°C
- Complete protection functions
- Industrial grade product technical design
- 3 years warranty

### DESCRIPTION

The ACSW15-xxV series is an efficient modular power supply for miniaturized bare boards, with advantages such as dual use of AC and DC, wide input voltage range, high reliability, low power consumption, and safe isolation. Widely applicable to industrial control, power instruments, smart homes, and other occasions that require strict volume requirements and low EMC requirements. If it is necessary to apply in harsh electromagnetic compatibility environments, EMC peripheral circuits must be added.

### MODEL ENCODING

## ACSW15W-xxV

Series Name      Wide Input      Output Voltage      Output Power

### SELECTION GUIDE

| Product Model | Output power (W) | Output Voltage (Vo)(V) | Output Current (Vo/Io) | Efficiency (230VAC, %/Typ.) | Max.Capacitive Load(μF) |
|---------------|------------------|------------------------|------------------------|-----------------------------|-------------------------|
| ACSW15W-03V   | 9.9              | 3.3                    | 3000                   | 70                          | 1500                    |
| ACSW15W-05V   | 15               | 5                      | 2800                   | 75                          | 1500                    |
| ACSW15W-09V   | 15               | 9                      | 1670                   | 79                          | 1000                    |
| ACSW15W-12V   | 15               | 12                     | 1250                   | 80                          | 820                     |
| ACSW15W-15V   | 15               | 15                     | 1000                   | 81                          | 680                     |
| ACSW15W-24V   | 15               | 24                     | 625                    | 82                          | 390                     |

**INPUT**

| Parameter                         | Conditions                    | Min. | Typ. | Max. | Units |
|-----------------------------------|-------------------------------|------|------|------|-------|
| Input Voltage                     | AC Input                      | 176  | --   | 528  | VAC   |
|                                   | DC Input                      | 248  | --   | 745  | VDC   |
| Input voltage certification range | AC Input                      | 200  | --   | 400  | VAC   |
| Input voltage frequency           | AC Input                      | 47   | --   | 63   | Hz    |
| Input Current                     | 230VAC                        | --   | --   | 0.25 | A     |
|                                   | 380VAC                        | --   | --   | 0.2  | A     |
| Inrush current                    | 230VAC                        | --   | 30   | --   | A     |
|                                   | 480VAC                        | --   | 58   | --   | A     |
| Leakage Current                   | 400VAC/50Hz                   | --   | --   | 0.5  | mA    |
| Input fuse                        | External suggested (500V, 2A) |      |      |      |       |

Remarks: This product does not support hot plug

**OUTPUT**

| Parameter                     | Conditions                                                        | Min. | Typ. | Max. | Units |
|-------------------------------|-------------------------------------------------------------------|------|------|------|-------|
| Output voltage accuracy       | 10% -100% load                                                    | --   | ±2   | ±3   | %     |
| Linear regulation rate        | Rated load                                                        | --   | ±0.5 | ±1   | %     |
| Load regulation rate          | 10% to 100% load                                                  | --   | ±1   | ±2   | %     |
| Minimum load                  |                                                                   | 0    | --   | --   | %     |
| Standby power                 | 230VAC input                                                      | --   | --   | 0.30 | W     |
|                               | 380VAC input                                                      | --   | --   | 0.50 | W     |
| Ripple & Noise                | 20MHz bandwidth (peak to peak)                                    | --   | 100  | 180  | mV    |
| Temperature drift coefficient | 3.3V / 5V                                                         | --   | ±0.2 | --   | %/°C  |
| Power-off hold time           | 115VAC input                                                      | --   | 35   | --   | ms    |
|                               | 380VAC input                                                      | --   | 80   | --   | ms    |
| Short circuit protection      | Hiccup type, capable of long-term short circuit and self recovery |      |      |      |       |
| Overcurrent protection        | ≥110% I/O, self-recovery                                          |      |      |      |       |

Note: The testing method for ripple and noise is parallel line testing, and a 100uF electrolytic capacitor and a 0.1uF ceramic capacitor need to be connected in parallel at the output end

## GENERAL CHARACTERISTICS

| Parameter                         | Conditions                                                             | Min.                       | Typ. | Max. | Units  |
|-----------------------------------|------------------------------------------------------------------------|----------------------------|------|------|--------|
| Isolation voltage                 | Input-Output, Test time 1 minute, Leakage current less than 5mA        | 3600                       | --   | --   | VAC    |
| Insulation resistance             | Input-Output, Test voltage: 500VDC.                                    | 100                        | --   | --   | MΩ     |
| Working temperature               |                                                                        | -40                        | --   | +85  | °C     |
| Storage temperature               |                                                                        | -40                        | --   | +105 | °C     |
| Solder temperature                | Wave soldering welding                                                 | 260 ± 5°C ; Time : 5 - 10s |      |      |        |
|                                   | Hand Soldering                                                         | 360 ± 10°C ; Time : 3 - 5s |      |      |        |
| Storage humidity                  |                                                                        | --                         | --   | 95   | %RH    |
| Switching frequency               |                                                                        | --                         | 65   | --   | KHz    |
| Output power derating             | +50°C to +85°C                                                         | 2                          | --   | --   | %/°C   |
|                                   | -40°C to -25°C                                                         | 2.67                       | --   | --   | %/°C   |
|                                   | 480AVC - 528VAC                                                        | 0.42                       | --   | --   | %/VAC  |
| Standard for Safety               | Adopted BS EN/EN62368-1 (Report); Comply with IEC/EN62477-1, EN61010-1 |                            |      |      |        |
| Mean Time Between Failures 【MTBF】 | MIL-HDBK-217F@25°C >500,000 h                                          | 1000                       | --   | --   | kHours |
| Safety standards                  | CLASS II                                                               |                            |      |      |        |

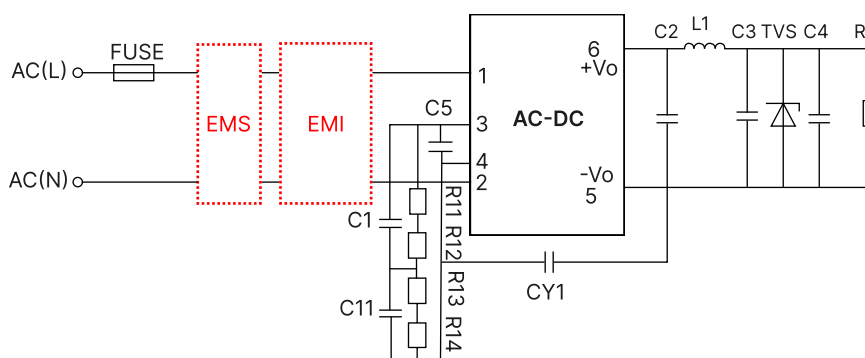
## PHYSICAL CHARACTERISTICS

| Parameter          | Contents                        |
|--------------------|---------------------------------|
| Housing material   | None (bare board)               |
| Overall dimensions | 40.04 × 20.00× 15.25 mm (L*W*H) |
| Weight             | 10g (Typ.)                      |
| Cooling mode       | Natural air cooling             |

## SAFETY &amp; EMC

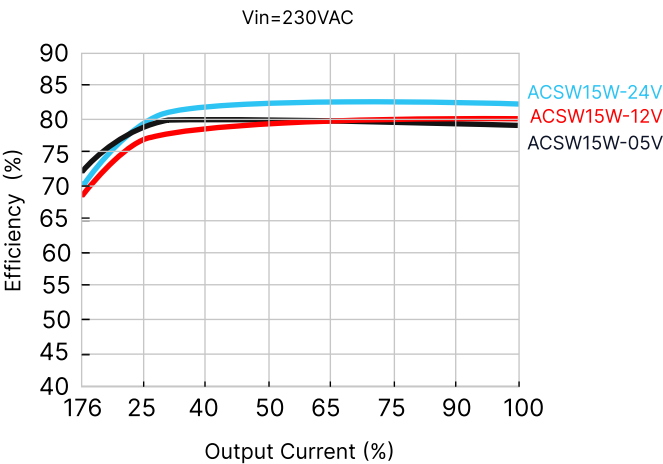
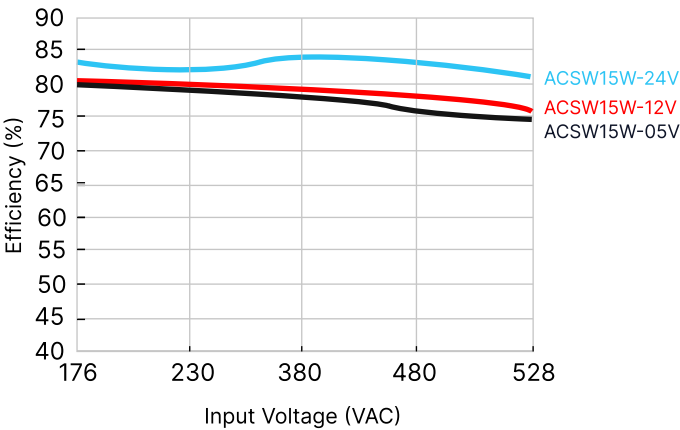
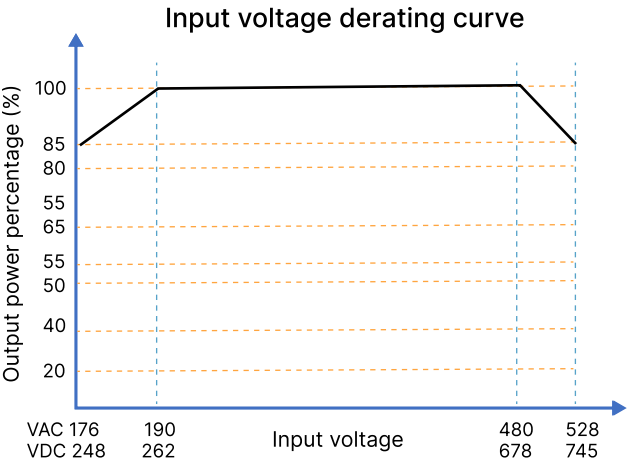
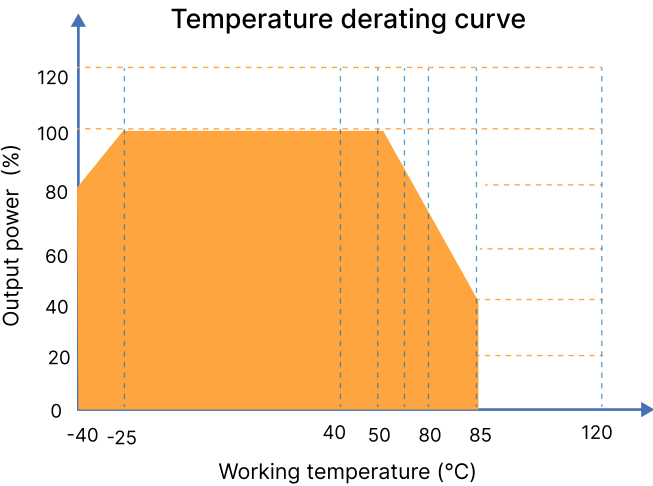
| Parameter | Category                       | Content          |                                                            |                  |
|-----------|--------------------------------|------------------|------------------------------------------------------------|------------------|
| EMI       | Conductive disturbance         | CISPR32 EN55032  | 150kHz—30MHz, CLASS A                                      |                  |
|           |                                | CISPR32 EN55032  | 150kHz—30MHz, CLASS B                                      |                  |
|           | Radiation disturbance          | CISPR32 EN55032  | 30MHz—1GHz, CLASS A                                        |                  |
|           |                                | CISPR32 EN55032  | 30MHz—1GHz, CLASS B*                                       |                  |
| EMS       | Electrostatic discharge        | IEC/EN61000-4-2  | Contact $\pm 6\text{KV}$ /Air $\pm 8\text{KV}$             | Perf. Criteria A |
|           | Radiated immunity              | IEC/EN61000-4-3  | 80MHz - 1GHz 10V/m                                         | Perf. Criteria A |
|           | EFT                            | IEC/EN61000-4-4  | $\pm 4\text{KV}$ , (5 or 100)kHz                           | Perf. Criteria A |
|           | Surge immunity                 | EC/EN61000-4-5   | line to line $\pm 2\text{KV}$ /line to PE $\pm 4\text{KV}$ | Perf. Criteria A |
|           |                                | IEC/EN61000-4-5  | line to line $\pm 4\text{KV}$ /line to PE $\pm 6\text{KV}$ | Perf. Criteria A |
|           | Conducted disturbance immunity | IEC/EN61000-4-6  | 0.15MHz-80MHz 10Vr.m.s                                     | Perf. Criteria A |
|           | Voltage dip                    | IEC/EN61000-4-11 | 0%, 70%                                                    | Perf. Criteria A |
|           | Voltage Interruption           | IEC/EN61000-4-11 | 0% of 230Vac, 0Vac, 5000ms                                 | Perf. Criteria B |

## TYPICAL APPLICATION CIRCUIT

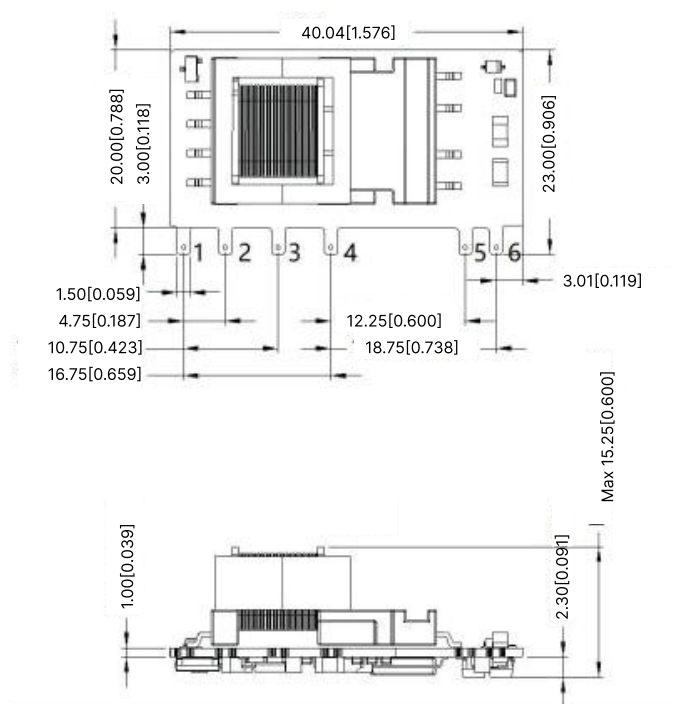


| Product Model | C1/C11<br>(Must) | R11/R12/<br>R13/ R14<br>(Must) | C5              | C2<br>(Must) | L1<br>(Must)                | C3<br>(Must) | C4            | CY1<br>(Must)    | TVS      |
|---------------|------------------|--------------------------------|-----------------|--------------|-----------------------------|--------------|---------------|------------------|----------|
| ACSW15W-03V   | 47uF/<br>400 V   | 1MΩ/1206<br>/ (1/4W)           | 4.7nF/<br>1000V | 1500uF/6.3V  | 2.2uH/1<br>5mΩ<br>Max/6.5 A | 680uF/25V    | 0.1uF/<br>50V | 2.2nF/<br>400VAC | SMBJ7.0A |
| ACSW15W-05V   |                  |                                |                 | 1000uF/16V   |                             | 330uF/25V    |               |                  | SMBJ7.0A |
| ACSW15W-09V   |                  |                                |                 | 470uF/16V    |                             | 390uF/16V    |               |                  | SMBJ12A  |
| ACSW15W-12V   |                  |                                |                 | 470uF/25V    |                             | 330uF/25V    |               |                  | SMBJ20A  |
| ACSW15W-15V   |                  |                                |                 | 470uF/25V    |                             | 100uF/35V    |               |                  | SMBJ20A  |
| ACSW15W-24V   |                  |                                |                 | 470uF/35V    |                             | 100uF/35V    |               |                  | SMBJ30A  |

PRODUCT CHARACTERISTIC CURVE



## OVERALL DIMENSIONS AND PIN FUNCTIONS

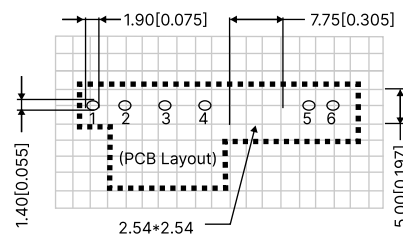


Note:

Dimensions in mm

Terminal diameter tolerance:  $\pm 0.10$  [ $\pm 0.004$ ]

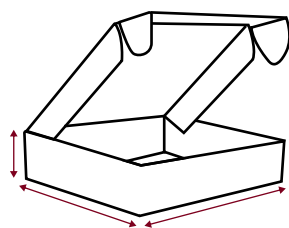
Undeclared tolerance:  $\pm 0.50$  [ $\pm 0.020$ ]



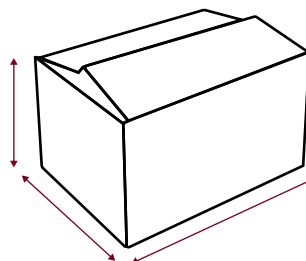
### Table 3: Pin Function Table

| Pin | Function |
|-----|----------|
| 1   | AC(L)    |
| 2   | AC(N)    |
| 3   | +V(cap)  |
| 4   | -V(cap)  |
| 5   | -Vo      |
| 6   | +Vo      |

## PACKAGING METHOD



150 Pieces/Inner box



900 Pieces/Outer box

## NOTES & INSTRUCTIONS

1. The input voltage shall not exceed the specified range value, otherwise permanent and unrecoverable damage may be caused
2. Unless otherwise specified, the parameters in this manual are measured at 25°C, 40%~75% humidity, input nominal voltage and output pure resistance mode under full load
3. All index test methods are based on the company's enterprise standards.
4. The copyright and the final interpretation right of the product belong to HENXV.