# **HAAD-10W Series**



### **Features**

- ★ In-Out Isolation Voltage 2500 VAC
- DIP Package
- ★ Temperature Range:-40°C to +85°C
- ★ UL94V-0 Inflaming retarding package
- ★ MTBF>1million hours(25°C)
- ★ Short-circuit protection

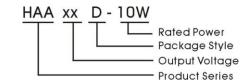


## **Applications**

The HAA\_D-10W Series are these AC-DC converters, you can reduce the design point of failure and save the development of micto power supply's manpower, material and time costs, also better ensure product quality stability, protect safety and reliability of the end of products. These products apply to where:

- 1. Input and output isolation noise is required.
- 2. Regulated and low ripple noise is required.

Such as: tele-communications etc, industrial control.



### **Model Detail List Specification**

| Model Number | Input Voltage | Output<br>Voltage | Output Current (mA) |       | Efficiency | Max. Capacitive |  |
|--------------|---------------|-------------------|---------------------|-------|------------|-----------------|--|
|              |               |                   | Min.                | Max.  |            | Load(μF)        |  |
| HAA05D-10W   |               | ±5.0V             | ±100                | ±1000 | 72%        |                 |  |
| HAA12D-10W   | 100~240VAC    | ±12.0V            | ±41                 | ±416  | 78%        | 1000            |  |
| HAA15D-10W   | (90~375VDC)   | ±15.0V            | ±33                 | ±334  | 81%        |                 |  |
|              |               |                   |                     |       |            |                 |  |

### **Environmental Specifications**

| Item                    | Test Conditions  | Min.                | Тур. | Max. | Unit    |
|-------------------------|--|---------------------|------|------|---------|
| Storage Humidity        | Non condensing   |                     |      | 95   | %       |
| Temp. rise at full load |  |                     | 25   | 40   |         |
| Operating Temperature   |  | -40                 |      | 85   | ·c      |
| Storage Temperature     | Power derating (above 85℃)                             | -55                 |      | 125  |         |
| Soldering Temperature   | 1.5mm from case for 10 seconds                         |                     |      | 300  |         |
| Isolation Voltage       | Tested for 1 minute and leakage current less than 1 mA | 2500                |      |      | VAC     |
| Switching Frequency     | Full load, nominal input                               |                     | 100  |      | KHz     |
| MTBF                    | MIL-HDBK-217F@25℃                                      | 1000                |      |      | K hours |
| Isolation Resistance    | Test at 500VDC   | 1000                |      |      | MΩ      |
| Weight                  |  |                     | 30   |      | g       |
| Cooling                 |  | Free air convection |      |      |         |

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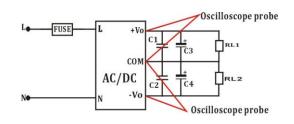
### **Output Specifications**

| ltem                     | Test Conditions       | Min.       | Тур.                           | Max.  | Unit  |  |
|--------------------------|-----------------------|------------|--------------------------------|-------|-------|--|
| Output Power             |                       | 0.5        |                                | 10    | W     |  |
| Line Voltage Regulation  | For Vin change of ±1% |            |                                | ±0.5  | %     |  |
| Load regulation          | 10% to 100% load      |            |                                | 0.5   |       |  |
| Ripple                   | 20MHz Bandwidth       |            | 50                             |       |       |  |
| Noise                    | ZUMINZ Bandwidth      |            | 75                             |       | mVp-p |  |
| Temperature Drift        | 100% full load        |            |                                | ±0.03 | %/°C  |  |
| Isolation Capacitance    |                       |            | 300                            |       | pF    |  |
| Short Circuit Protection |                       | Continuous | Continuous, automatic recovery |       |       |  |

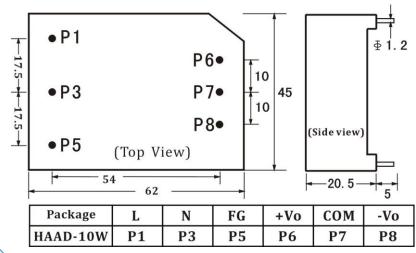
### **Temperature Derating Graph**

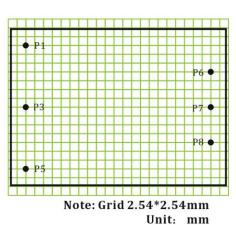
# Temperature Derating Graph 120 80 100 Safe Operating Area 40 Safe Operating Area 40 Ambient Temp. (°C)

### Model test circuit



### **Mechanical Dimensions & Recommended Footprint**





General tolerances: 0.20mm

### **EMC Recommended Circuit**

