



## 5ACDM Series

5W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated

## AC-DC Converter

5 Watt

- ⊕ Wide input voltage range: 90~264VAC/120~370VDC
- ⊕ Short circuit protection (SCP)
- ⊕ Overload, over-voltage protection
- ⊕ High efficiency up to 85%
- ⊕ High safety isolation 3000VAC
- ⊕ Ultra-slim SIP package
- ⊕ Industrial grade
- ⊕ Meets UL/IEC/EN 60950-1, UL/IEC/EN 62368-1
- ⊕ EMI EN55022, CLASS B

The 5ACDM series is a high efficiency green power modules provided by GAPTEC. The features of this series are: Accept either AC or DC input, wide input voltage, high efficiency, low power consumption, safety isolation etc. All models are particularly suitable for the applications such as industrial, electric power, instrumentation, smart home which do not have high requirement on EMC. EMC application circuit (EMC reference EN55032) must be added if the products need to be applied to EMC harsh environment.



UL-62368-1 (E347551)

### Common specifications

|                                |                                                                             |
|--------------------------------|-----------------------------------------------------------------------------|
| Short circuit protection:      | Continuous, automatic recovery                                              |
| Temperature rise at full load: | 25°C TYP                                                                    |
| Cooling:                       | Free air convection                                                         |
| Operation temperature range:   | -25°C – +70°C                                                               |
| Storage temperature range:     | -40°C – +85°C                                                               |
| Welding temperature:           | Wave-soldering: 250±10°C; time:5~10s<br>Manual-welding: 360±10°C; time:3~5s |
| Storage humidity range:        | < 95%                                                                       |
| Safety standard:               | Design refer to UL60950-1, IEC60950-1                                       |
| EMI Conduction & Radiation:    | Design refer to EN55022, CLASS B                                            |
| EMS Immunity:                  | Design refer to EN61000                                                     |
| Hot plug:                      | Unavailable                                                                 |
| Case material:                 | Plastic [UL94-V0]                                                           |
| MTBF (MIL-HDBK-217F@25°C):     | >328,000 hours, Ground Benign                                               |
| Dimensions (LxWxH):            | 25.4x25.4x16.1 mm                                                           |
| Weight:                        | 20g                                                                         |

### Input specifications

| Item                | Test condition                        | Min       | Typ      | Max        | Units      |
|---------------------|---------------------------------------|-----------|----------|------------|------------|
| Input voltage range | • AC Input<br>• DC Input              | 90<br>120 |          | 264<br>370 | VAC<br>VDC |
| Input frequency     |                                       | 47        | 50/60    | 63         | Hz         |
| Input fuse          | VDE/UL/CCC FUSE 2.5A/250V (Slow blow) |           |          |            |            |
| Inrush current      | • 115VAC<br>• 230VAC                  |           | 10<br>20 |            | A<br>A     |

### Isolation specifications

| Item                 | Test condition         | Min  | Typ | Max | Units |
|----------------------|------------------------|------|-----|-----|-------|
| Isolation voltage    | Input/Output, 5mA/5sec | 3000 |     |     | VAC   |
| Isolation resistance | Input/Output, @500 Vdc | 100  |     |     | MΩ    |

### Output specifications

| Item                            | Test condition                                                                     | Min | Typ   | Max      | Units  |
|---------------------------------|------------------------------------------------------------------------------------|-----|-------|----------|--------|
| Output voltage accuracy         | • 3.3V/5V output<br>• Others                                                       |     |       | ±3<br>±2 | %<br>% |
| Min. load                       |                                                                                    | 0   |       |          | %      |
| Line regulation                 | Io nom, Vi min...Vi max                                                            |     |       | ±1       | %      |
| Load regulation                 |                                                                                    |     |       | ±1       | %      |
| Temperature drift               | 100% full load                                                                     |     | ±0.05 |          | %/°C   |
| Ripple & Noise*                 | 20MHz Bandwidth                                                                    |     |       | 480      | mV     |
| Transient response setting time | Vi nom, Io nom<br>= ↔0.5 Io nom                                                    |     | 1000  |          | μs     |
| Switching frequency             | Full load, nominal input                                                           |     |       | 65       | KHz    |
| Over-load Protection            | ≥ 110% rated output power, Recovers automatically after fault condition is removed |     |       |          |        |
| Over-voltage Protection         | Zener clamp diode, 120%-150% rated output Vvoltage                                 |     |       |          |        |

\* Ripple & noise is measured by using 20 MHz bandwidth, measured with a 10uF paralleled with a high-frequency 0.47uF capacitor across each output by full load.

### Example:

**5ACDM\_05S3**

**5 = 5Watt; AC = AC-DC; DM = case style; 05 = 5Vout; S = Single Output;**

### Note:

1. Module required dispensing fixed after assembled;
2. All specifications were measured at Ta = 25°C, humidity <75%, nominal input voltage and rated output load unless otherwise specified;
3. All index testing methods in this datasheet are based on our Company's corporate standards;
4. The performance indexes of the product models listed in this manual are as above, but some indexes of non-standard model products will exceed the above-mentioned requirements, and please directly contact our technician for specific information;
5. We can provide product customization service;
6. Specifications of this product are subject to changes without prior notice.

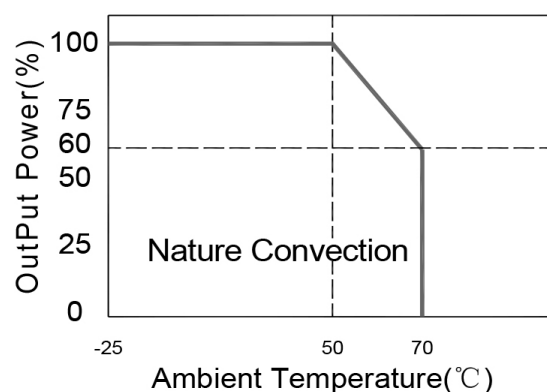
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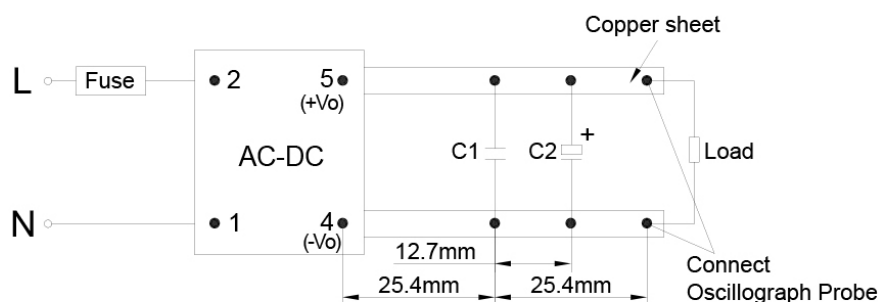
| Model      | Power [W] | Output voltage [VDC] | Output current [mA] | Ripple&noise [mV, max] | Efficiency [%, typ] | Capacitive load [ $\mu$ F, max] |
|------------|-----------|----------------------|---------------------|------------------------|---------------------|---------------------------------|
| 5ACDM_03S3 | 5         | 3.3                  | 1515                | 74                     | 74                  | 2200                            |
| 5ACDM_05S3 | 5         | 5                    | 1000                | 80                     | 80                  | 1000                            |
| 5ACDM_09S3 | 5         | 9                    | 555                 | 82                     | 82                  | 300                             |
| 5ACDM_12S3 | 5         | 12                   | 416                 | 82                     | 82                  | 160                             |
| 5ACDM_15S3 | 5         | 15                   | 333                 | 83                     | 83                  | 100                             |
| 5ACDM_24S3 | 5         | 24                   | 208                 | 83                     | 83                  | 43                              |
| 5ACDM_48S3 | 5         | 48                   | 104                 | 85                     | 85                  | 10                              |

## Typical characteristics

Temperature derating graph



## Parallel lines measure

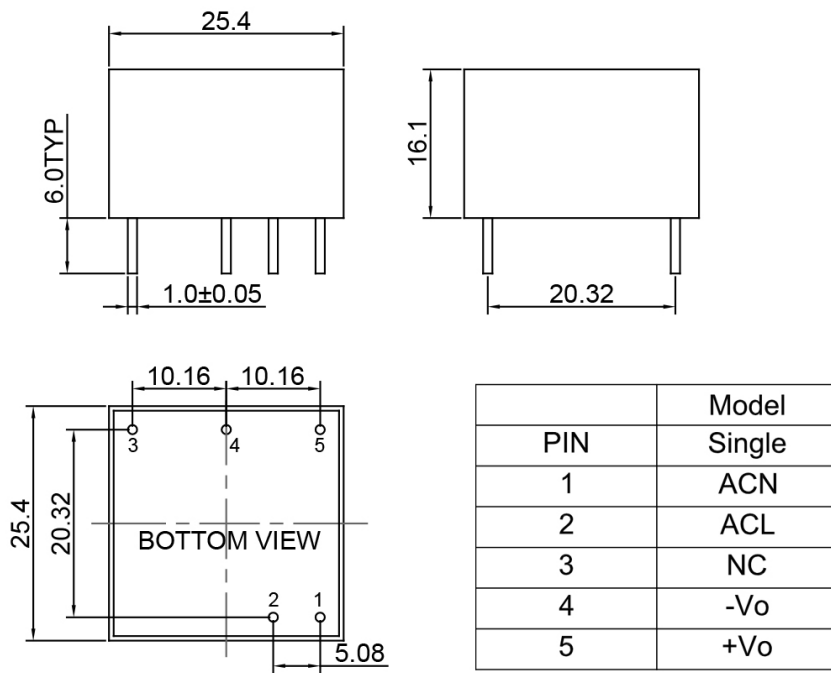


C1: Ceramic capacitor, 1uF; C2: Electrolytic capacitor, 10uF

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### Mechanical dimensions



Unit : mm ,

Unless otherwise specified, all tolerances are  $\pm 0.50$