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AMEM5-Y



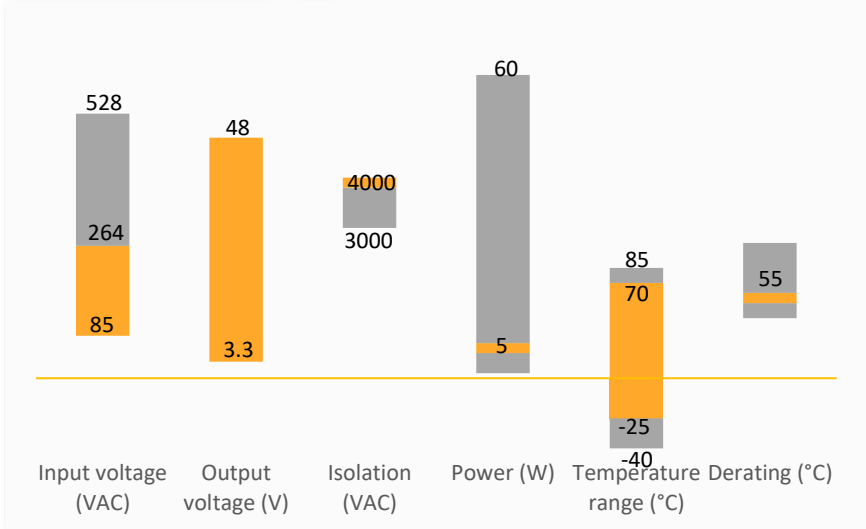
The AMEM5-Y high power density AC/DC converters are available in the small 1x1 inch PCB mountable package, boasting the lowest height profile in the 4000VAC isolation range and a large MTBF. The AMEM5-Y series features a 10,000µF Maximum Capacitance load and many protective features such as over load, over voltage and continuous short circuit protection. Additionally, it offers a no-load power consumption below 0.2W and no minimum load is required for operation within the specified range. These new power converters will simplify industrial and commercial product designs, while increasing their affordability.

Features

- I/O Isolation 4000VAC
- Continuous Short circuit protection
- Operating Temp: -25 °C to +70 °C
- No load power consumption below 0.2W
- Input: 85-264VAC, 47-63Hz, or 120-370VDC
- Compact 1x1 inch package
- Over Load, Over Voltage Protection
- Efficiency up to 77%




Summary



Training


AMEM5-Y  
Product Overview



Product Training Video  
(click to open)

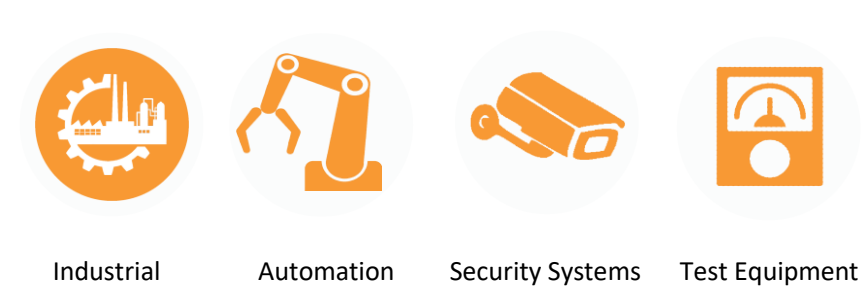
Press Release

RoHS Soldering profiles



Application Notes

Applications



Industrial      Automation      Security Systems      Test Equipment

## Models & Specifications

### Single Output

| Model       | Input Voltage (VAC/Hz) | Input Voltage (VDC) | Output Voltage (V) | Output Current max (A) | Maximum capacitive Load (230VAC) (μF) | Efficiency 230VAC (%) |
|-------------|------------------------|---------------------|--------------------|------------------------|---------------------------------------|-----------------------|
| AMEM5-3.3SY | 85-264/47-63           | 120-370             | 3.3                | 1.51                   | 10000                                 | 73.6                  |
| AMEM5-5SY   | 85-264/47-63           | 120-370             | 5                  | 1.00                   | 7200                                  | 73.6                  |
| AMEM5-9SY   | 85-264/47-63           | 120-370             | 9                  | 0.55                   | 2200                                  | 77.6                  |
| AMEM5-12SY  | 85-264/47-63           | 120-370             | 12                 | 0.41                   | 1000                                  | 77.6                  |
| AMEM5-15SY  | 85-264/47-63           | 120-370             | 15                 | 0.33                   | 820                                   | 77.6                  |
| AMEM5-24SY  | 85-264/47-63           | 120-370             | 24                 | 0.20                   | 300                                   | 77.5                  |
| AMEM5-36SY  | 85-264/47-63           | 120-370             | 36                 | 0.135                  | 120                                   | 77.5                  |
| AMEM5-48SY  | 85-264/47-63           | 120-370             | 48                 | 0.10                   | 100                                   | 77.5                  |

Note: Use suffix -ST" for chassis and suffix "-STD" for DIN-Rail mounting.

### Input Specification

| Parameters          | Conditions          | Typical | Maximum | Units |
|---------------------|---------------------|---------|---------|-------|
| Current (full load) | 115 VAC             |         | 110     | mA    |
|                     | 230 VAC             |         | 60      | mA    |
| Inrush current <2ms | 115 VAC, cold start |         | 30      | A     |
|                     | 230 VAC, cold start |         | 60      | A     |
| Leakage current     | 230VAC/50Hz         |         | 0.25    | mA    |
| External fuse       | Slow blow type      | 1       |         | A     |
| Startup time        | 115VAC              |         | 3       | s     |

### Output Specification

| Parameters       | Conditions                  | Typical | Maximum | Units  |
|------------------|-----------------------------|---------|---------|--------|
| Voltage accuracy |                             | ±2      |         | %      |
| Line regulation  | Full load, main input range | ±1      |         | %      |
| Load regulation  | 0-100% load                 | ±1      |         | %      |
| Minimum load     | Single output               | 0       |         | A      |
| Ripple & Noise*  | 3.3,5,9,12V Output          |         | 150     | mV p-p |
|                  | 15,24V Output               |         | 250     | mV p-p |
|                  | 36V Output                  |         | 360     | mV p-p |
|                  | 48V Output                  |         | 480     | mV p-p |
| Hold-up time     | 115VAC, 20MHz bandwidth     | 10      |         | ms     |

\* 20MHz bandwidth with a 0.1uF CC and a 10uF EC

| General Specifications  |   |                           |                        |           |
|---|---|---------------------------|------------------------|-----------|
| Parameters  | Conditions  | Typical                   | Maximum                | Units     |
| Switching frequency   | Single output                                       |                           | 125                    | KHz       |
| Over Load protection  |   | ≥110                      |                        | % of Iout |
| Over voltage protection   | 120-190% rated Vout                                 |                           |                        |           |
| Short circuit protection  | Continuous, Auto recovery                           |                           |                        |           |
| Operating temperature   | See derating curve                                  | -25 to +70                |                        | °C        |
| Altitude  |   |                           | 3000                   | m         |
| Storage temperature   |   | -40 to +85                |                        | °C        |
| Storage altitude  |   |                           | 5000                   | m         |
| Maximum Case temperature  |   |                           | 100                    | °C        |
| Temperature coefficient   |   | ±0.05                     |                        | % / °C    |
| Cooling   | Free air convection                                 |                           |                        |           |
| Humidity  | Non-condensing                                      |                           | 95                     | % RH      |
| Case material   | Plastic (flammability to UL 94V-0)                  |                           |                        |           |
| Weight  | PCB mountable models                                | 18.5                      |                        | g         |
|   | With optional -ST mounting plate                    | 38.5                      |                        | g         |
|   | With optional -STD mounting plate                   | 58.5                      |                        | g         |
| Dimensions (L x W x H)  | PCB mountable models                                | 1.04 x 1.04 x 0.63 inches | 26.5 x 26.5 x 16.0 mm  |           |
|   | With optional -ST mounting plate                    | 2.99 x 1.40 x 0.90 inches | 76.0 x 35.5 x 22.8 mm  |           |
|   | With optional -STD mounting plate                   | 2.99 x 1.40 x 1.26 inches | 76.0 x 35.5 x 31.92 mm |           |
| MTBF  | > 860,000 hrs (MIL-HDBK -217F, t=+25°C) / Full Load |                           |                        |           |
| NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. |   |                           |                        |           |

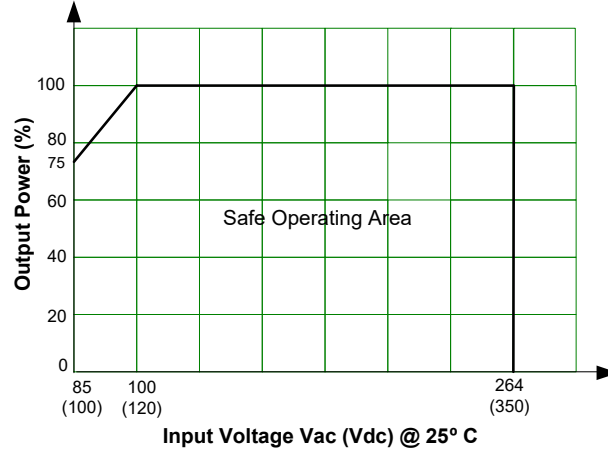
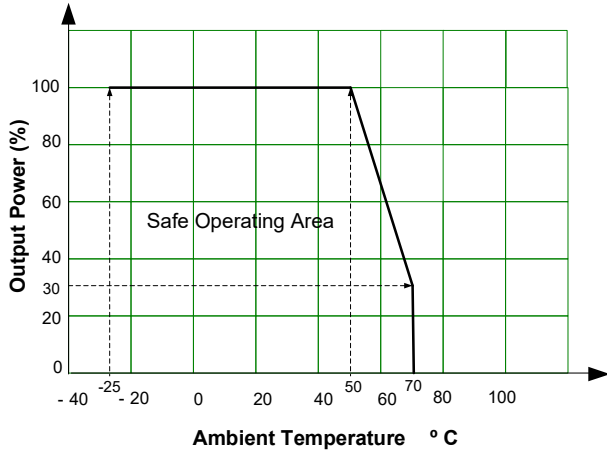
| Isolation Specifications |                               |         |       |       |
|--------------------------|-------------------------------|---------|-------|-------|
| Parameters               | Conditions                    | Typical | Rated | Units |
| Tested I/O voltage       | 60 sec, leakage current < 5mA |         | 4000  | VAC   |

| Environmental Specifications |              |  |
|------------------------------|--------------|--|
| Vibration                    | Test mode    | 10-500Hz   |
|                              | Acceleration | 2G, 10min one cycle, every axis tested, 60min total duration |

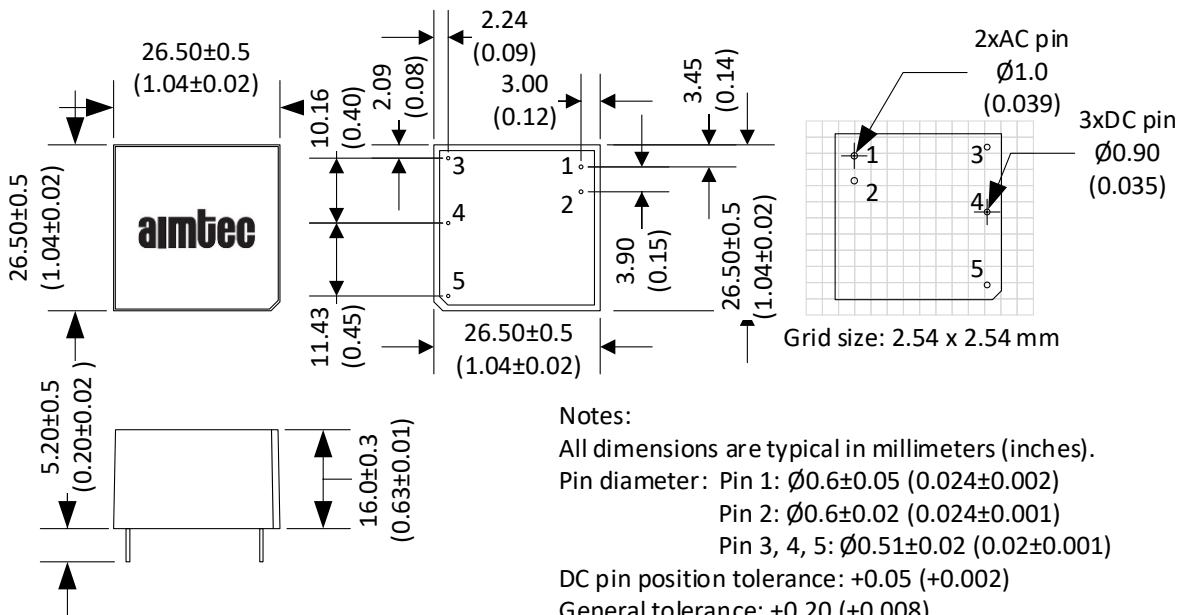
| Safety Specifications |  |  |
|-----------------------|--|--|
| Parameters            |  |  |
| Agency approvals      | CE, cULus (except -STD models)           |  |
| Standards             | Information technology Equipment         | IEC/EN/UL 62368-1 (except -STD models) |
|                       | EMI - Conducted and radiated emission    | EN55032, CISPR 32 class B, FCC Part 15 |
|                       | Electrostatic Discharge Immunity         | IEC 61000-4-2: Contact: 4KV; Air: 8KV  |
|                       | RF, Electromagnetic Field Immunity       | IEC 61000-4-3 Level 2, Criterion A     |
|                       | Electrical Fast Transient/Burst Immunity | IEC 61000-4-4 Level 2, Criterion A     |
|                       | Surge Immunity                           | IEC 61000-4-5: 2KV                     |
|                       | RF, Conducted Disturbance Immunity       | IEC 61000-4-6 Level 2, Criterion A     |
|                       | Power frequency Magnetic Field Immunity  | IEC 61000-4-8 Level 1, Criterion A     |

|  |                                     |
|--|-------------------------------------|
| Voltage dips, Short Interruptions Immunity | IEC 61000-4-11 Level C, Criterion A |
| Harmonic Current Emission                  | IEC 61000-3-2                       |
| Voltage Fluctuation and Flicker Emission   | IEC 61000-3-3                       |

## Derating

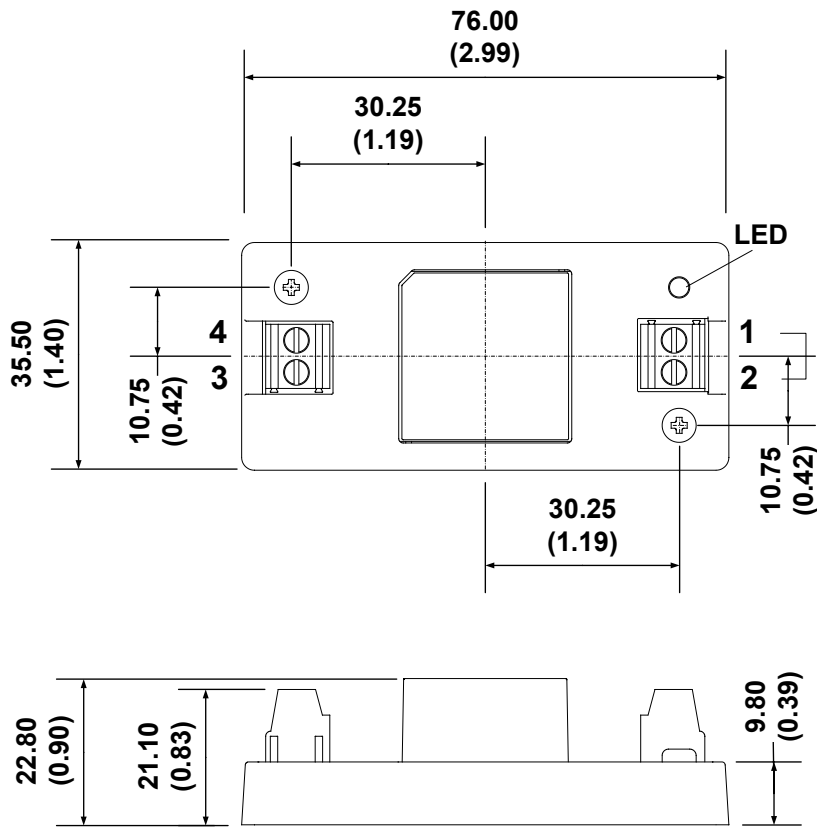


## Dimensions



| Pin Output Specifications |              |
|---------------------------|--------------|
| Pin                       | Single       |
| 1                         | AC Input (N) |
| 2                         | AC Input (L) |
| 3                         | +V Output    |
| 4                         | -V Output    |
| 5                         | NC           |

## Dimensions with -ST optional



| Pin Output Specifications |              |
|---------------------------|--------------|
| Pin                       | Single       |
| 1                         | AC Input (L) |
| 2                         | AC Input (N) |
| 3                         | +V Output    |
| 4                         | -V Output    |

**Notes:**

All dimensions are typical in millimeters (inches).

General Tolerance:  $\pm 0.05$  ( $\pm 0.002$ ),  $\leq 2$  mm

$\pm 0.10$  ( $\pm 0.004$ ),  $> 2 \sim 10$  mm

$\pm 0.20$  ( $\pm 0.008$ ),  $> 10$  mm

