



#### FEATURES:

- I/O Isolation 4000VAC
- Operating Temp: -40°C to +70°C
- Over load, Over Voltage, Short Circuit Protection
- Up to 80% efficiency
- Energy Star compliant
- Ultra small package

#### Models Single output



| Model          | Input Voltage (VAC/Hz) | Input Voltage (VDC) | Max Output wattage (W) | Output Voltage (V) | Output Current max (A) | Maximum capacitive load (μF) | Efficiency (%) |
|----------------|------------------------|---------------------|------------------------|--------------------|------------------------|------------------------------|----------------|
| AMEL10-3.3SMAZ | 90-264/47-440          | 120-370             | 9.9                    | 3.3                | 3.00                   | 2200                         | 75             |
| AMEL10-5SMAZ   | 90-264/47-440          | 120-370             | 10                     | 5                  | 2.00                   | 1000                         | 77             |
| AMEL10-12SMAZ  | 90-264/47-440          | 120-370             | 10                     | 12                 | 0.84                   | 680                          | 79             |
| AMEL10-15SMAZ  | 90-264/47-440          | 120-370             | 10                     | 15                 | 0.67                   | 470                          | 80             |
| AMEL10-24SMAZ  | 90-264/47-440          | 120-370             | 10                     | 24                 | 0.42                   | 470                          | 80             |

#### Models Asymmetric Dual output

| Model             | Input Voltage (VAC/Hz) | Input Voltage (VDC) | Max Output wattage (W) | Output Voltage (V) | Rated Output Current (A) | Maximum capacitive load (μF) | Efficiency (%) |
|-------------------|------------------------|---------------------|------------------------|--------------------|--------------------------|------------------------------|----------------|
| AMEL10-3.35DMAZ   | 90-264/47-440          | 120-370             | 7.9                    | 3.3/5              | 0.9/1.0                  | 680                          | 74             |
| AMEL10-3.312DMAZ  | 90-264/47-440          | 120-370             | 8                      | 3.3/12             | 0.9/0.41                 | 680                          | 77             |
| AMEL10-3.315DMAZ  | 90-264/47-440          | 120-370             | 8                      | 3.3/15             | 0.9/0.33                 | 680                          | 76             |
| AMEL10-3.324DMAZ  | 90-264/47-440          | 120-370             | 8                      | 3.3/24             | 0.9/0.2                  | 680                          | 75             |
| AMEL10-512DMAZ    | 90-264/47-440          | 120-370             | 8                      | 5/12               | 0.6/0.41                 | 470                          | 75             |
| AMEL10-515DMAZ    | 90-264/47-440          | 120-370             | 8                      | 5/15               | 0.6/0.33                 | 470                          | 77             |
| AMEL10-524DMAZ    | 90-264/47-440          | 120-370             | 8                      | 5/24               | 0.6/0.2                  | 470                          | 75             |
| AMEL10-1215DMAZ   | 90-264/47-440          | 120-370             | 8                      | 12/15              | 0.25/0.33                | 330                          | 76             |
| AMEL10-1224DMAZ   | 90-264/47-440          | 120-370             | 9                      | 12/24              | 0.25/0.25                | 330                          | 78             |
| AMEL10-1524DMAZ   | 90-264/47-440          | 120-370             | 9                      | 15/24              | 0.2/0.25                 | 330                          | 79             |
| AMEL10-3.3N5DMAZ  | 90-264/47-440          | 120-370             | 7.3                    | -3.3/5             | -0.7/1.0                 | 680                          | 74             |
| AMEL10-3.3N12DMAZ | 90-264/47-440          | 120-370             | 8                      | -3.3/12            | -0.9/0.41                | 680                          | 75             |
| AMEL10-3.3N15DMAZ | 90-264/47-440          | 120-370             | 8                      | -3.3/15            | -0.9/0.33                | 680                          | 75             |
| AMEL10-5N5DMAZ    | 90-264/47-440          | 120-370             | 8                      | -5/5               | -0.6/1                   | 680                          | 74             |
| AMEL10-5N12DMAZ   | 90-264/47-440          | 120-370             | 8                      | -5/12              | -0.6/0.41                | 470                          | 74             |
| AMEL10-5N15DMAZ   | 90-264/47-440          | 120-370             | 8                      | -5/15              | -0.6/0.33                | 470                          | 74             |
| AMEL10-12N12DMAZ  | 90-264/47-440          | 120-370             | 8                      | -12/12             | -0.25/0.41               | 470                          | 76             |
| AMEL10-12N15DMAZ  | 90-264/47-440          | 120-370             | 8                      | -12/15             | -0.25/0.33               | 330                          | 75             |

\*Output power must not exceed the listed values.

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.

#### Input Specifications

| Parameters                       | Conditions     | Typical | Maximum | Units |
|----------------------------------|----------------|---------|---------|-------|
| Current                          | 115VAC         | 0.23    |         | A     |
|                                  | 230VAC         | 0.15    |         | A     |
| Inrush current <2ms (cold start) | 115VAC         |         | 10      | A     |
|                                  | 230VAC         |         | 20      | A     |
| Leakage current                  |                |         | 0.25    | mA    |
| External fuse                    | slow blow type | 1       |         | A     |

## Input Specifications (continued)

| Parameters        | Conditions | Typical | Maximum | Units |
|-------------------|------------|---------|---------|-------|
| Input dissipation | No Load    | <0.5    |         | W     |
| Start up time     |            | 50      |         | ms    |

## Output Specifications

| Parameters                      | Conditions               | Typical | Maximum | Units     |
|---------------------------------|--------------------------|---------|---------|-----------|
| Voltage accuracy                |                          | ±2      |         | %         |
| Line regulation                 |                          | ±1      |         | %         |
| Load regulation (single output) | 0-100% load              | ±2      |         | %         |
| Load regulation (dual output)   | Unbalanced (0-100% load) | ±3      |         | %         |
| Transient recovery time         |                          | 500     |         | µs        |
| Transient response deviation    | 25% load step            | ±2      |         | % of Vout |
| Ripple & Noise*                 | 3.3 & 5V models          | 75      |         | mV p-p    |
|                                 | 12, 15 & 24V models      | 100     |         |           |
| Hold-up time (min)              | 115VAC                   | 10      |         | ms        |
|                                 | 230VAC                   | 25      |         |           |

\*Ripple and Noise are measured at 20MHz bandwidth by using a 0.1µF (M/C) & 4.7µF (E/C) parallel capacitor.

## Isolation Specifications

| Parameters           | Conditions   | Typical | Rated | Units |
|----------------------|--------------|---------|-------|-------|
| Tested I/O voltage   | 3 sec, 1.2mA |         | 4000  | VAC   |
| Isolation resistance |              | >1000   |       | MΩ    |
| Isolation capacitor  |              | 2200    |       | pF    |

## General Specifications

| Parameters               | Conditions                                            | Typical                 | Maximum | Units  |
|--------------------------|-------------------------------------------------------|-------------------------|---------|--------|
| Switching frequency      | 100% load                                             | 65                      |         | KHz    |
| Over load protection     | Auto recovery, Foldback                               | 150                     |         | %      |
| Over voltage protection  | Zener Diode Clamp                                     |                         |         |        |
| Short circuit protection | Continuous                                            |                         |         |        |
| Short circuit restart    | Auto recovery                                         |                         |         |        |
| Operating temperature    | See derating table                                    | -40 to +70              |         | °C     |
| Maximum case temperature |                                                       |                         | 100     | °C     |
| Storage temperature      |                                                       | -45 to +95              |         | °C     |
| Temperature coefficient  |                                                       | ±0.02                   |         | % / °C |
| Cooling                  | Free air convection                                   |                         |         |        |
| Humidity                 | Non condensing                                        | 20 ~ 95                 |         | % RH   |
| Case material            | Plastic resin + Fiberglass (flammability to UL 94V-0) |                         |         |        |
| Weight                   |                                                       | 70                      |         | g      |
| Dimensions (L x W x H)   | 2.22 x 1.21 x 0.99 inches                             | 56.48 x 30.86 x 25.10mm |         |        |
| MTBF                     | > 400 000 hrs (MIL-HDBK -217F, t=+25°C)               |                         |         |        |

## Environment Approval

| Test      | Parameters             | Conditions                                       |
|-----------|------------------------|--------------------------------------------------|
| Shock     | Wave form              | Half sine wave                                   |
|           | Acceleration amplitude | 5gn                                              |
|           | Bump duration          | 30 ms                                            |
|           | Converter operation    | before and after test, body mounted (on chassis) |
|           | Number of bumps        | 18 (3 in each direction for every axis)          |
| Vibration | Test mode              | Sweep sine                                       |
|           | Displacement           | 1mm                                              |
|           | Acceleration           | 3g                                               |
|           | Converter operation    | 10-100Hz, speed 0.05Hz/s                         |

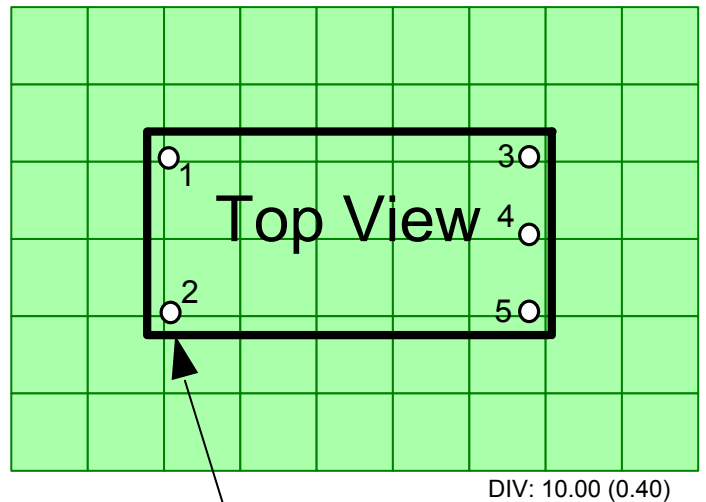
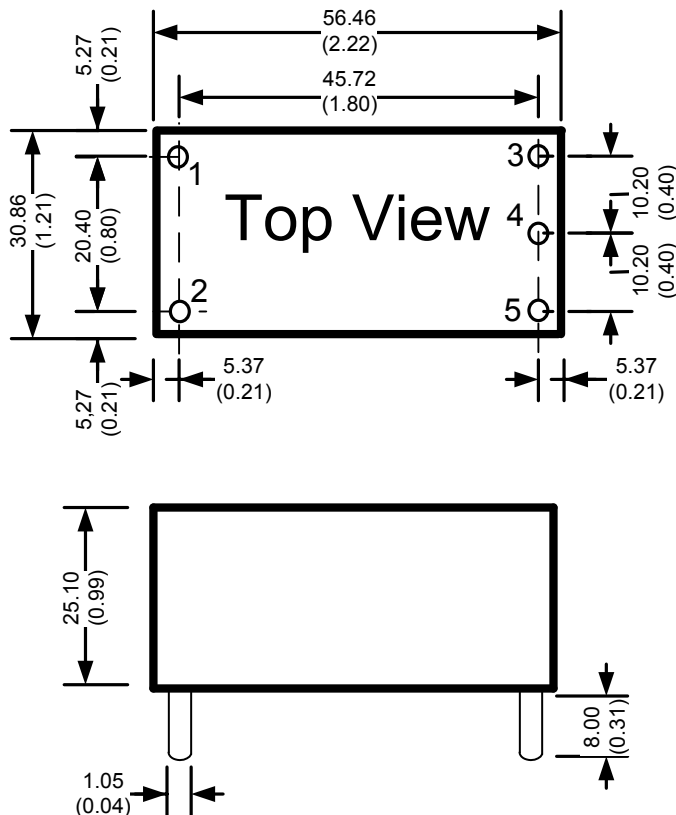
## Safety Specifications

| Parameters       |                                                    |                                            |
|------------------|----------------------------------------------------|--------------------------------------------|
| Agency approvals | cULus, CE, CB, TÜV Rheinland (cTUVus), Bauart-Mark |                                            |
|                  | Medical Electrical Equipment                       | IEC\EN\UL 60601-1, CSA-C22.2 No. 601.1-M90 |
| Standards        | Information technology Equipment                   | EN 60950-1:2006+A11:2009                   |
|                  | EMI - Conducted and radiated emission              | EN55011, class B                           |
|                  | Harmonic Current Emissions                         | IEC/EN 61000-3-2, (EN60555-2)              |
|                  | Voltage fluctuations and flicker                   | IEC/EN 61000-3-3, (EN60555-3)              |
|                  | Electrostatic Discharge Immunity                   | IEC 61000-4-2                              |
|                  | RF, Electromagnetic Field Immunity                 | IEC 61000-4-3                              |
|                  | Electrical Fast Transient/Burst Immunity           | IEC 61000-4-4                              |
|                  | Surge Immunity                                     | IEC 61000-4-5                              |
|                  | RF, Conducted Disturbance Immunity                 | IEC 61000-4-6                              |
|                  | Power frequency Magnetic Field Immunity            | IEC 61000-4-8                              |
|                  | Voltage dips, Short Interruptions Immunity         | IEC 61000-4-11                             |
|                  | Information Technology Equipment                   | UL 60950-1:2007                            |
|                  | Information Technology Equipment                   | CAN/CSA-C22.2 No.60950-1-07                |

## Pin Out Specifications

| Pin | Single       | Dual positive | Dual negative/positive |
|-----|--------------|---------------|------------------------|
| 1   | AC Input (N) | AC Input (N)  | AC Input (N)           |
| 2   | AC Input (L) | AC Input (L)  | AC Input (L)           |
| 3   | +V Output    | +V1 Output    | +V1 Output             |
| 4   | -V Output    | Common        | Common                 |
| 5   | No pin       | +V2 Output    | -V2 Output             |

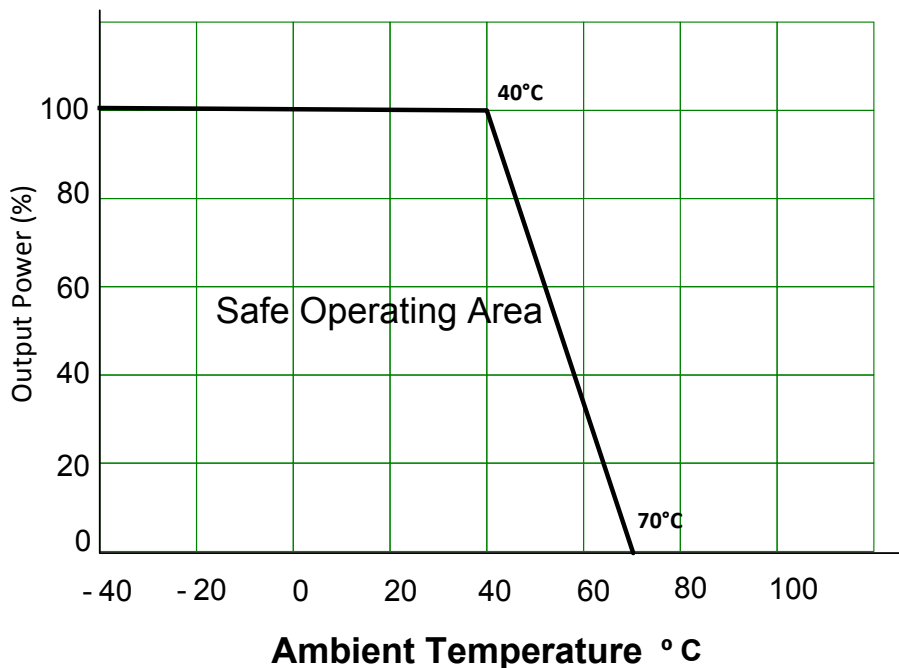
## Dimensions



Dimensions mm (inch)  
Case Tolerance  $\pm 0.50$  ( $\pm 0.02$ )  
Pin Diameter  $1.0 \pm 0.05$  ( $0.04 \pm 0.002$ )  
Pin Pitch Tolerance  $\pm 0.35$  ( $\pm 0.014$ )

## Derating

### Free Air Convection



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