# Series AM6C-NZ

## 6 Watt | DC-DC Converter

**Picture coming soon**

**FEATURES:**

- Wide input voltage range (2:1)
- Efficiency up to 88%
- Isolation voltage of 1500VDC
- Output Over Voltage Protection
- Operating temperature: -40 ºC to +85 ºC
- Low ripple and noise
- Continuous Short Circuit Protection
- 1x1” package

## Models
## Single output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Isolation (VDC) | Max Capacitive Load(uF) | Efficiency (%) |
|---|---|---|---|---|---|---|
| AM6C-1203S-NZ | 9-18 | 3.3 | 1500 | 1500 | 1800 | 76 |
| AM6C-1205S-NZ | 9-18 | 5 | 1200 | 1500 | 1000 | 81 |
| AM6C-1212S-NZ | 9-18 | 12 | 500 | 1500 | 100 | 85 |
| AM6C-1215S-NZ | 9-18 | 15 | 400 | 1500 | 100 | 85 |
| AM6C-1224S-NZ | 9-18 | 24 | 250 | 1500 | 47 | 86 |
| AM6C-2403S-NZ | 18-36 | 3.3 | 1500 | 1500 | 1800 | 79 |
| AM6C-2405S-NZ | 18-36 | 5 | 1200 | 1500 | 1000 | 83 |
| AM6C-2412S-NZ | 18-36 | 12 | 500 | 1500 | 100 | 87 |
| AM6C-2415S-NZ | 18-36 | 15 | 400 | 1500 | 100 | 87 |
| AM6C-2424S-NZ | 18-36 | 24 | 250 | 1500 | 47 | 87 |
| AM6C-4803S-NZ | 36-75 | 3.3 | 1500 | 1500 | 1800 | 79 |
| AM6C-4805S-NZ | 36-75 | 5 | 1200 | 1500 | 1000 | 83 |
| AM6C-4812S-NZ | 36-75 | 12 | 500 | 1500 | 100 | 87 |
| AM6C-4815S-NZ | 36-75 | 15 | 400 | 1500 | 100 | 88 |
| AM6C-4824S-NZ | 36-75 | 24 | 250 | 1500 | 47 | 88 |

## Models
## Dual output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Isolation (VDC) | Max Capacitive Load(uF) | Efficiency (%) |
|---|---|---|---|---|---|---|
| AM6C-1205D-NZ | 9-18 | ±5 | ±600 | 1500 | 470 | 81 |
| AM6C-1212D-NZ | 9-18 | ±12 | ±250 | 1500 | 100 | 85 |
| AM6C-1215D-NZ | 9-18 | ±15 | ±200 | 1500 | 100 | 85 |
| AM6C-2405D-NZ | 18-36 | ±5 | ±600 | 1500 | 470 | 83 |
| AM6C-2412D-NZ | 18-36 | ±12 | ±250 | 1500 | 100 | 87 |
| AM6C-2415D-NZ | 18-36 | ±15 | ±200 | 1500 | 100 | 87 |
| AM6C-2424D-NZ | 18-36 | ±24 | ±125 | 1500 | 47 | 87 |
| AM6C-4805D-NZ | 36-75 | ±5 | ±600 | 1500 | 470 | 83 |
| AM6C-4812D-NZ | 36-75 | ±12 | ±250 | 1500 | 100 | 87 |
| AM6C-4815D-NZ | 36-75 | ±15 | ±200 | 1500 | 100 | 88 |
| AM6C-4824D-NZ | 36-75 | ±24 | ±125 | 1500 | 47 | 88 |

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 | Nominal | Typical | Maximum | Units |
|---|---|---|---|---|
| Voltage range | 12 | 9-18 | | VDC |
| | 24 | 18-36 | | |
| | 48 | 36-75 | | |
| Filter | | π(Pi) Network | | |
| Start up time | | | | ms |
| Absolute Maximum Rating | 12<br>24<br>48 | | -0.7 – 25<br>-0.7 – 50<br>-0.7 - 100 | VDC |

## Input Specifications (continued)

| Parameters | Nominal | Typical | Maximum | Units |
|---|---|---|---|---|
| Peak Input Voltage time | | | 1 | s |
| No Load Input Current | 12<br>24<br>48 | | 25<br>13<br>7 | mA |
| Input reflected current | | 20 | | mA |

## Isolation Specifications

| Parameters | Conditions | Typical | Rated | Units |
|---|---|---|---|---|
| Tested I/O voltage | 1 min, ≤1mA | | 1500 | VDC |
| Resistance | Isolation 500VDC | >1000 | | MOhm |
| Capacitance | 100kHz, 0.1V | 1000 | | pF |

## Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|---|---|---|---|---|
| Voltage accuracy | | ±2 | | % |
| Voltage balance (Dual Output Models) | Balanced Load | ±1.5 | | % |
| Cross Regulation (Dual Output Models) | 25% load on one output - 100% load on second load | ±5 | | % |
| Over voltage protection | | 110-140 | | % of Vout |
| Short Circuit protection | Continuous | | | |
| Short circuit restart | Auto recovery | | | |
| Line voltage regulation (Single) | LL-HL, full load | ±0.5 | | % of Vin |
| Line voltage regulation (Dual) | LL-HL, full load | ±1 | | % of Vin |
| Load voltage regulation | 5% -100% load | ±1 | | % |
| Temperature coefficient | Full load | ±0.03 | | %/°C |
| Ripple & Noise | 20MHz Bandwidth | 75 | | mV p-p |
| Transient recovery time | 25% load step change | 500 | | µs |
| Transient recovery deviation | 25% load step change | ±5 | | % |

## General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|---|---|---|---|---|
| Switching frequency | 100% load | 300 | | KHz |
| Operating temperature | With derating above 71ºC | -40 to +85 | | °C |
| Storage temperature | -55 to +125 | | | °C |
| Maximum case temperature | | | 105 | °C |
| Cooling | Free convection | | | |
| Humidity | | | 95 | % RH |
| Case material | Aluminum alloy | | | |
| Weight | 13 | | | g |
| Dimensions (L x W x H) | 1 x 1 x 0.46 inches 25.40 x 25.40 x 11.70 mm | | | |
| MTBF | >1,000,000 hours (MIL-HDBK -217F, Ground Benign, t=+25°C) | | | |
| Maximum soldering temperature | 10sec, 1.5mm from case | | 300 | °C |

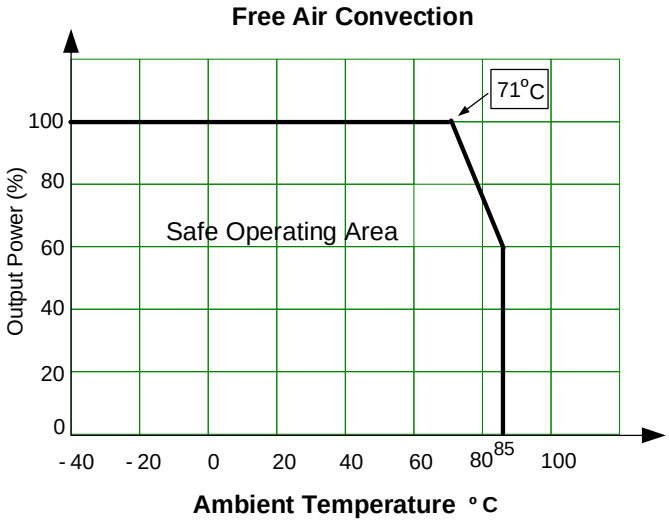
## Safety Specifications

| Parameters | | |
|---|---|---|
| Standards | Information Technology Equipment | EN55022 Class B, with the recommended circuit below, EN55024 |
| | Electrostatic Discharge Immunity | IEC 61000-4-2, Contact ±4KV, Criteria B |
| | RF, Electromagnetic Field Immunity | IEC 61000-4-3, 10V/m, Criteria A |
| | Electrical Fast Transient / Burst Immunity | IEC 61000-4-4, ±2KV, Criteria B, with the recommended circuit below |
| | Surge Immunity | IEC 61000-4-5, ±2KV, Criteria B, with the recommended circuit below |
| | RF, Conducted Disturbance Immunity | IEC 61000-4-6, 3 Vrms, Criteria A |

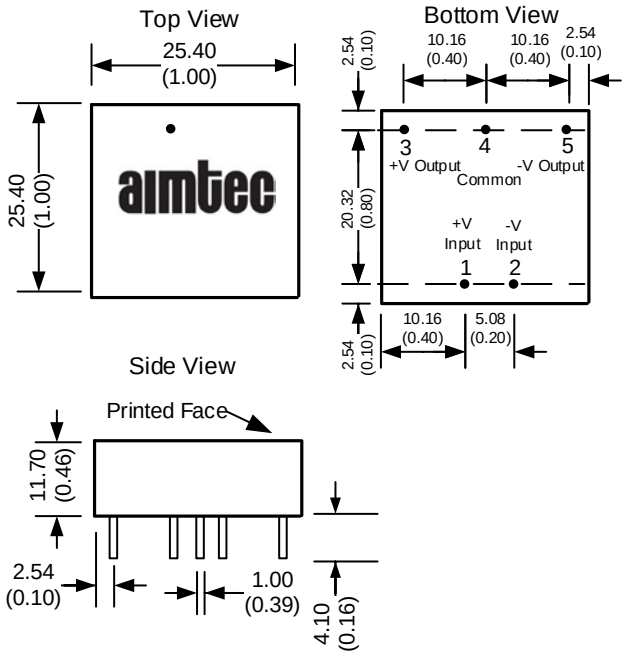
## Pin Out Specifications

| Pin | Single | Dual |
|---|---|---|
| 1 | +V Input | +V Input |
| 2 | -V Input | -V Input |
| 3 | +V Output | +V Output |
| 4 | No pin | Common |
| 5 | -V Output | -V Output |

## Derating

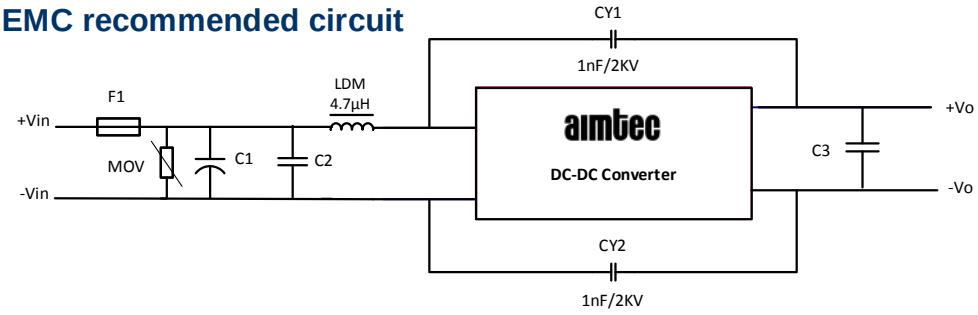



## Dimensions




Notes: All dimensions are typical in millimeters (inches).
Case Tolerance ±0.25 (±0.01)
Pin diameter tolerance ±0.1 (±0.004)
Pin height tolerance ±0.5 (±0.02)

## EMC recommended circuit




| | 12V input | 24V input | 48V input |
|---|---|---|---|
| MOV | S14K20 | S14K35 | S14K60 |
| C1 | 680µF/25V | 330µF/50V | 330µF/100V |
| C2 | 1µF/50V | 1µF/50V | 1µF/100V |
| C3 | 10µF/50V | 10µF/50V | 10µF/100V |

**NOTE: 1.** Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. **2.** Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. **3.** Mechanical drawings and specifications are for reference only. **4.** All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. **5.** Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. **6.** This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.