



**FEATURES:**

- Ultra Wide 4:1 input range
- Efficiency up to 91%
- Soft start
- Continuous short circuit protection
- Remote on/off control
- Input/Output Isolation 1600VDC
- Operating temperature -40°C to + 75°C
- RoHS compliant



**Models**  
Single output

| Model           | Input Voltage (V) | Output Voltage (V) | Output Current max (A) | Maximum Capacitive Load (uF) | Efficiency (%) |
|-----------------|-------------------|--------------------|------------------------|------------------------------|----------------|
| AM30EW-2403SZ   | 9-36              | 3.3                | 7.5                    | 20000                        | 86             |
| AM30EW-2405SZ   | 9-36              | 5                  | 6                      | 14000                        | 88             |
| AM30EW-2405.1SZ | 9-36              | 5.1                | 6                      | 14000                        | 88             |
| AM30EW-2412SZ   | 9-36              | 12                 | 2.5                    | 2000                         | 89             |
| AM30EW-2415SZ   | 9-36              | 15                 | 2                      | 2000                         | 89             |
| AM30EW-4803SZ   | 18-75             | 3.3                | 7.5                    | 20000                        | 86             |
| AM30EW-4805SZ   | 18-75             | 5                  | 6                      | 14000                        | 88             |
| AM30EW-4805.1SZ | 18-75             | 5.1                | 6                      | 14000                        | 88             |
| AM30EW-4812SZ   | 18-75             | 12                 | 2.5                    | 2000                         | 90             |
| AM30EW-4815SZ   | 18-75             | 15                 | 2                      | 2000                         | 91             |

**Models**  
Dual output

| Model         | Input Voltage (V) | Output Voltage (V) | Output Current max (A) | Maximum Capacitive Load (uF) | Efficiency (%) |
|---------------|-------------------|--------------------|------------------------|------------------------------|----------------|
| AM30EW-2405DZ | 9-36              | ±5                 | ±3                     | ±3000                        | 88             |
| AM30EW-2412DZ | 9-36              | ±12                | ±1.25                  | ±1300                        | 87             |
| AM30EW-2415DZ | 9-36              | ±15                | ±1                     | ±1300                        | 87             |
| AM30EW-4805DZ | 18-75             | ±5                 | ±3                     | ±3000                        | 88             |
| AM30EW-4812DZ | 18-75             | ±12                | ±1.25                  | ±1300                        | 88             |
| AM30EW-4815DZ | 18-75             | ±15                | ±1                     | ±1300                        | 88             |

**Models**  
Triple output

| Model           | Input Voltage (V) | Output Voltage (V) | Output Auxiliary Voltage (V) | Output Current max (A) | Maximum Capacitive Load (uF) | Efficiency (%) |
|-----------------|-------------------|--------------------|------------------------------|------------------------|------------------------------|----------------|
| AM30EW-240312TZ | 9-36              | 3.3                | ±12                          | 5 / ±0.42              | 15000 / ±220                 | 88             |
| AM30EW-240315TZ | 9-36              | 3.3                | ±15                          | 5 / ±0.33              | 15000 / ±220                 | 88             |
| AM30EW-240512TZ | 9-36              | 5                  | ±12                          | 4 / ±0.42              | 8000 / ±220                  | 90             |
| AM30EW-240515TZ | 9-36              | 5                  | ±15                          | 4 / ±0.33              | 8000 / ±220                  | 90             |
| AM30EW-480312TZ | 18-75             | 3.3                | ±12                          | 5 / ±0.42              | 15000 / ±220                 | 88             |
| AM30EW-480315TZ | 18-75             | 3.3                | ±15                          | 5 / ±0.33              | 15000 / ±220                 | 88             |
| AM30EW-480512TZ | 18-75             | 5                  | ±12                          | 4 / ±0.42              | 8000 / ±220                  | 90             |
| AM30EW-480515TZ | 18-75             | 5                  | ±15                          | 4 / ±0.33              | 8000 / ±220                  | 90             |

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           | 24   | 9-36       |           | VDC   |
|                         | 48   | 36-75      |           |       |
| Filter                  | $\pi$ (Pi) Network                                       |            |           |       |
| Start up time           |  | 30         |           | ms    |
| Absolute Maximum Rating | 24   | -0.7 ~ 50  |           | VDC   |
|                         | 48   | -0.7 ~ 100 |           |       |
| Peak Input Voltage time |  |            | 100       | ms    |
| On/Off control          | ON: 3 ~12VDC or open circuit                             |            |           |       |
|                         | OFF: 0 ~ 1.2VDC or Short circuit between pin 2 and pin 3 |            |           |       |
| No Load Input Current   | Vin 9~36   | 100        |           | mA    |
|                         | Vin 36~75  | 50         |           |       |
| Under voltage lockout   | 24V ON/OFF   |            | 8.8 / 7.9 | VDC   |
|                         | 48V ON/OFF   |            | 17.8 / 16 |       |
| Input reflected current |  | 20         |           | mAp-p |

### Isolation Specifications

| Parameters                | Conditions | Typical | Rated | Units |
|---------------------------|------------|---------|-------|-------|
| Tested I/O voltage        | 3 sec      |         | 1600  | VDC   |
| Case/Input tested voltage | 3 sec      | 1600    |       | VDC   |
| Resistance                |            | 1000    |       | MOhm  |
| Capacitance               |            | 1500    |       | pF    |

### Output Specifications

| Parameters                            | Conditions  | Typical         | Maximum | Units                   |
|---------------------------------------|---|-----------------|---------|-------------------------|
| Voltage accuracy (Single and Dual)    |   | $\pm 1$         |         | %                       |
| Voltage accuracy (Triple)             | Main / Auxiliary  | $\pm 1 / \pm 5$ |         |                         |
| Cross Regulation (Dual Output Models) | 25% load on one output - 100% load on second load         | $\pm 5$         |         | %                       |
| Cross Regulation (Triple)             | Main 100%, 25% load on Aux1 and 100% on Aux2              | $\pm 5$         |         |                         |
| Over voltage protection               | Zener diode clamp   |                 |         |                         |
| Over current protection               |   | 120             |         | %                       |
| Short Circuit protection              | Continuous  |                 |         |                         |
| Short circuit restart                 | Auto-Recovery   |                 |         |                         |
| Thermal Shutdown                      | Case temp   | 115             |         | $^{\circ}\text{C}$      |
| Line voltage regulation (Single)      | HL-LL   | $\pm 0.2$       |         | %                       |
| Line voltage regulation (Dual)        | HL-LL   | $\pm 0.2$       |         | %                       |
| Line voltage regulation (Triple)      | HL-LL Main / Auxiliary                                    | $\pm 1 / \pm 5$ |         | %                       |
| Load voltage regulation (Single)      | 0-100% load   | $\pm 0.5$       |         | %                       |
| Load voltage regulation (Dual)        | Balanced load   | $\pm 1$         |         | %                       |
| Load voltage regulation (Triple)      | 10~100% Main / Auxiliary                                  | $\pm 1 / \pm 5$ |         | %                       |
| Temperature coefficient               |   | $\pm 0.02$      |         | $\% / ^{\circ}\text{C}$ |
| Ripple & Noise (Single and Dual)      | 20MHz bandwidth, 3.3V/5V/5.1V/ $\pm 5\text{V}$            | 100             |         | mV p-p                  |
|                                       | 20MHz bandwidth, 12V/15V/ $\pm 12\text{V}/\pm 15\text{V}$ | 150             |         |                         |
| Ripple & Noise (Triple)               | 20MHz bandwidth Main / Auxiliary                          | 50 / 75         |         | mV p-p                  |
| Voltage adjustment range (single)     |   | $\pm 10$        |         | %                       |
| Minimum Load Current                  |   | 10              |         | % of Max                |

### General Specifications

| Parameters               | Conditions        | Typical     | Maximum    | Units              |
|--------------------------|-------------------|-------------|------------|--------------------|
| Switching frequency      | 100% load         | 330         |            | KHz                |
| Operating temperature    | Derating above 50 |             | -40 to +75 | $^{\circ}\text{C}$ |
| Storage temperature      |                   | -40 to +125 |            | $^{\circ}\text{C}$ |
| Maximum case temperature |                   |             | 105        | $^{\circ}\text{C}$ |

### General Specifications (continued)

| Parameters                    | Conditions                 | Typical   | Maximum                  | Units |
|-------------------------------|----------------------------|---|--------------------------|-------|
| Derating                      |                            | 2   |                          | %/°C  |
| Cooling                       |                            | Free Air Convection   |                          |       |
| Humidity                      |                            |   | 95                       | % RH  |
| Case material                 |                            | Nickel coated Copper  |                          |       |
| Weight                        |                            | 30  |                          | g     |
| Dimensions (L x W x H)        |                            | 2.00 x 1.00 x 0.4 inches  | 50.80 x 25.40 x 10.17 mm |       |
| MTBF                          |                            | Single & Dual: >450000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C) |                          |       |
|                               |                            | Triple: >320000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)        |                          |       |
| Maximum soldering temperature | 1.5mm from case for 10 sec |   | 260                      | °C    |
| Transient recovery time       |                            | 250   |                          | µS    |
| Transient recovery deviation  |                            | ±3  |                          | %     |

### Safety Specifications

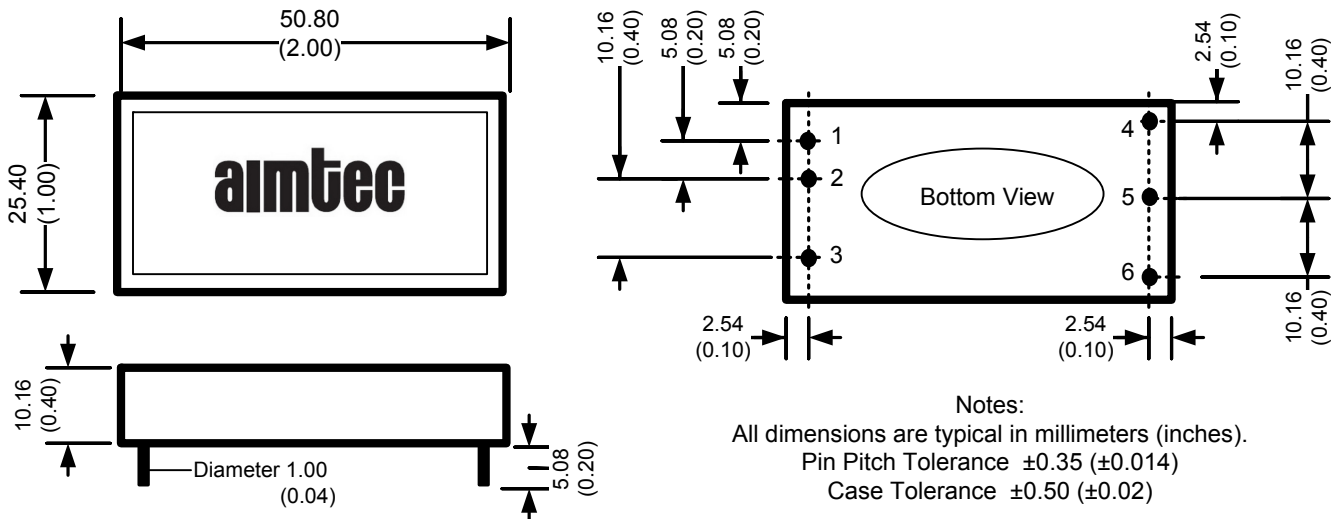
| Parameters      |   |
|-----------------|---|
| Agency Approval | CE  |
| Standards       | EN55022 Class A, EN55024  |
|                 | IEC61000-4-2, Perf. Criteria B                                    |
|                 | IEC61000-4-3, Perf. Criteria A                                    |
|                 | IEC61000-4-4, Perf. Criteria B (external 220µF/100V cap required) |
|                 | IEC61000-4-5, Perf. Criteria B (external 220µF/100V cap required) |
|                 | IEC61000-4-6, Perf. Criteria A                                    |
|                 | IEC61000-4-8, Perf. Criteria A                                    |

### Pin Out Specifications

| Pin | Single         | Dual           | Triple         |
|-----|----------------|----------------|----------------|
| 1   | + V Input      | + V Input      | + V Input      |
| 2   | - V Input      | - V Input      | - V Input      |
| 3   | On/Off Control | On/Off Control | On/Off Control |
| 4   | + V Output     | + V Output     | + Vaux Output  |
| 5   | -V Output      | Common         | - Vaux Output  |
| 6   | Trim           | - V Output     | Common         |
| 7   | No Pin         | No Pin         | + V Output     |

### Dimensions

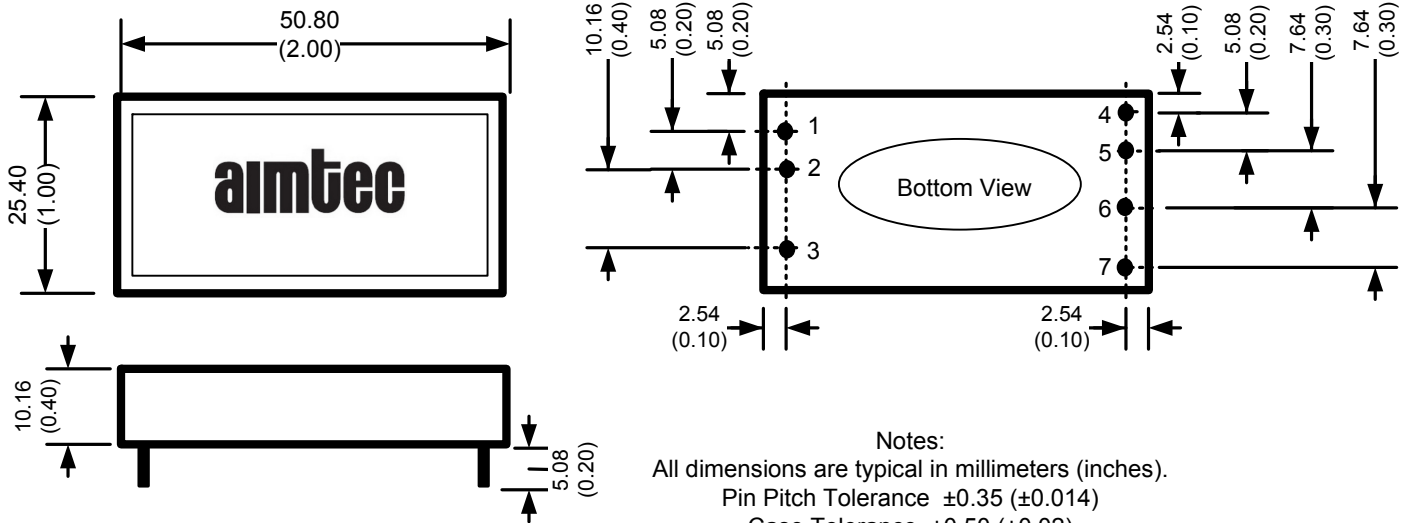
Single and Dual Output Models



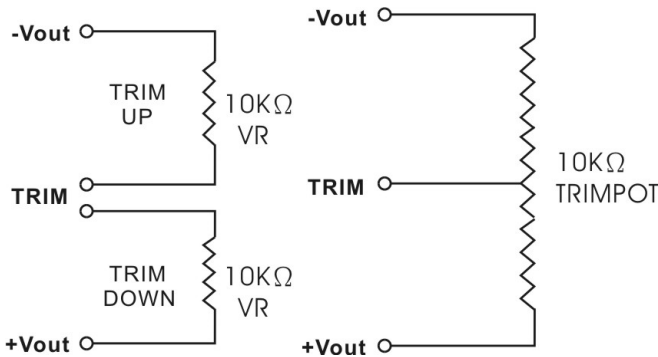
**Notes:**

All dimensions are typical in millimeters (inches).  
Pin Pitch Tolerance ±0.35 (±0.014)  
Case Tolerance ±0.50 (±0.02)

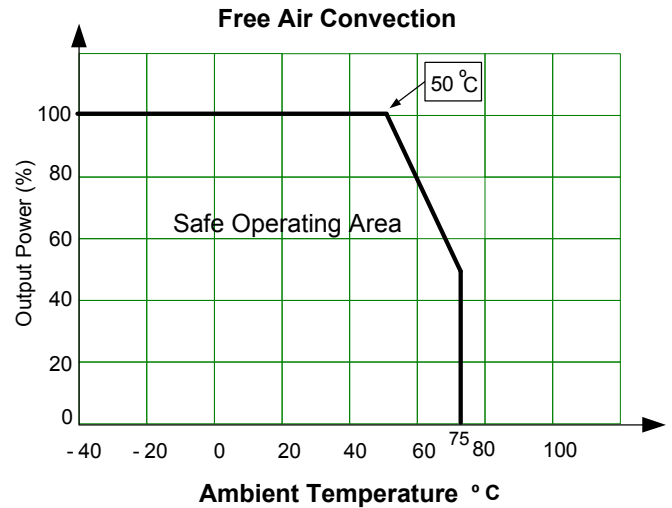
**Triple Output Models**



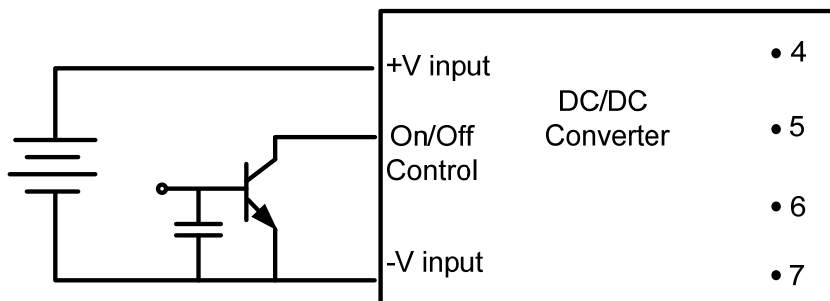
**Trimming**



**Derating**



**On/Off Control**

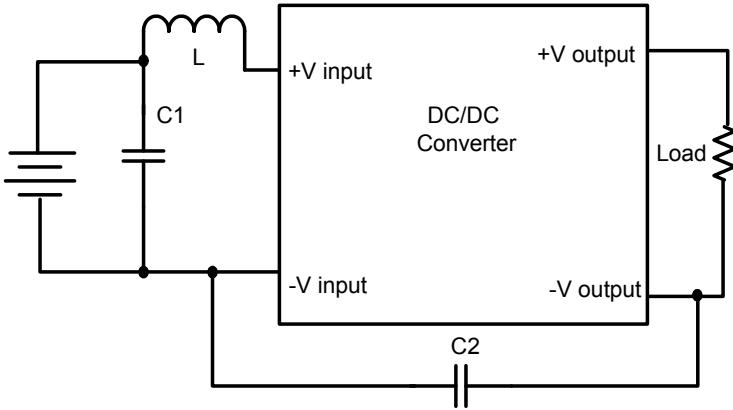


Positive logic turns on the module during high logic and off during low logic. Module can be controlled by an external switch between the On/Off CTRL terminal and -Vinput terminal. The switch can be either open collector or open drain.

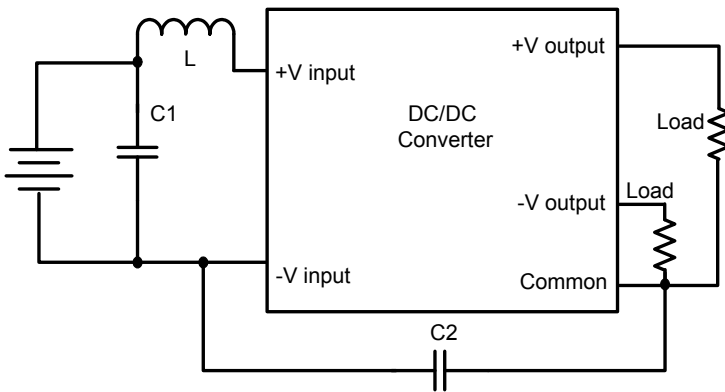
**Recommended Circuits**

| C1          | L    | C2               |
|-------------|------|------------------|
| 100uF, 100V | 12uH | 1206, 470pF, 2KV |

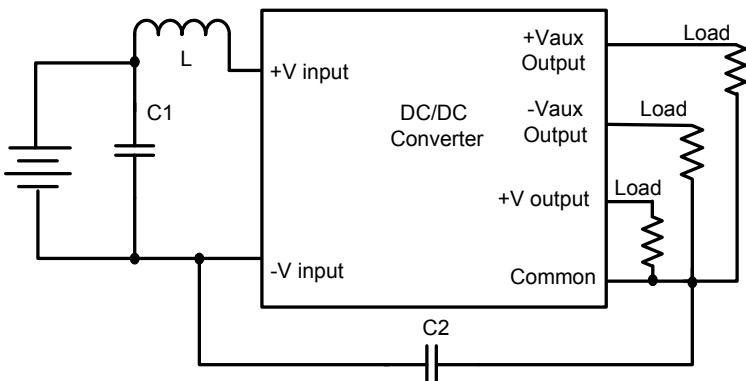
Conducted/Radiated Emissions  
Single Output



Conducted/Radiated Emissions  
Dual Output



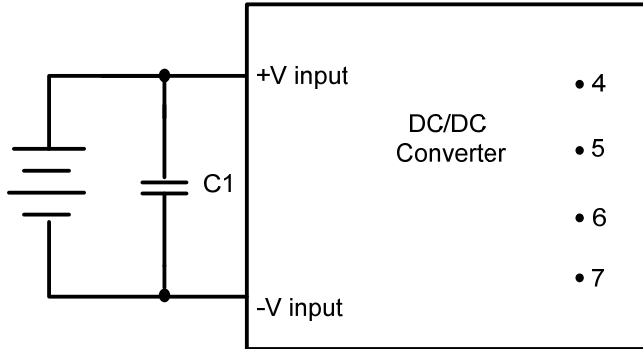
Conducted/Radiated Emissions  
Triple Output



**Surge/EFT**

**C1**

220uF, 100V



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