



FEATURES:

- Wide Input Range (4:1)
- 24 Pin DIP Package
- Metal Package
- High Efficiency up to 79%
- Operating Temperature -40°C to +85°C
- Input / Output Isolation 1500 or 3500VDC
- Pin Compatible with Multiple Manufacturers
- Continuous Short Circuit Protection



Models Single Output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current Max (mA) | Capacitive Load Max (μF) | Input Current Full No Load (mA) | | Efficiency (%) |
|-------------------|-------------------|--------------------|-------------------------|--------------------------|-----------------------------------|----|----------------|
| AM3TW-2405S-VZ | 9-36 | 5 | 600 | 2200 | 178 | 20 | 70 |
| AM3TW-2409S-VZ | 9-36 | 9 | 333 | 470 | 176 | 20 | 71 |
| AM3TW-2412S-VZ | 9-36 | 12 | 250 | 470 | 171 | 20 | 73 |
| AM3TW-2415S-VZ | 9-36 | 15 | 200 | 470 | 171 | 20 | 73 |
| AM3TW-2424S-VZ | 9-36 | 24 | 125 | 220 | 176 | 30 | 71 |
| AM3TW-4805S-VZ | 18-72 | 5 | 600 | 2200 | 83 | 10 | 75 |
| AM3TW-4809S-VZ | 18-72 | 9 | 333 | 470 | 81 | 10 | 77 |
| AM3TW-4812S-VZ | 18-72 | 12 | 250 | 470 | 79 | 10 | 79 |
| AM3TW-4815S-VZ | 18-72 | 15 | 200 | 470 | 79 | 10 | 79 |
| AM3TW-4824S-VZ | 18-72 | 24 | 125 | 220 | 82 | 10 | 76 |
| AM3TW-2405SH35-VZ | 9-36 | 5 | 600 | 2200 | 178 | 20 | 70 |
| AM3TW-2409SH35-VZ | 9-36 | 9 | 333 | 470 | 176 | 20 | 71 |
| AM3TW-2412SH35-VZ | 9-36 | 12 | 250 | 470 | 171 | 20 | 73 |
| AM3TW-2415SH35-VZ | 9-36 | 15 | 200 | 470 | 171 | 20 | 73 |
| AM3TW-2424SH35-VZ | 9-36 | 24 | 125 | 220 | 176 | 30 | 71 |
| AM3TW-4805SH35-VZ | 18-72 | 5 | 600 | 2200 | 83 | 10 | 75 |
| AM3TW-4809SH35-VZ | 18-72 | 9 | 333 | 470 | 81 | 10 | 77 |
| AM3TW-4812SH35-VZ | 18-72 | 12 | 250 | 470 | 79 | 10 | 79 |
| AM3TW-4815SH35-VZ | 18-72 | 15 | 200 | 470 | 79 | 10 | 79 |
| AM3TW-4824SH35-VZ | 18-72 | 24 | 125 | 220 | 82 | 10 | 76 |

Models Dual Output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current Max (mA) | Capacitive Load Max (μF) | Input Current Full No Load (mA) | | Efficiency (%) |
|-------------------|-------------------|--------------------|-------------------------|--------------------------|-----------------------------------|----|----------------|
| AM3TW-2405D-VZ | 9-36 | ±5 | ±300 | ±1000 | 178 | 20 | 70 |
| AM3TW-2409D-VZ | 9-36 | ±9 | ±167 | ±220 | 173 | 20 | 72 |
| AM3TW-2412D-VZ | 9-36 | ±12 | ±125 | ±220 | 168 | 20 | 74 |
| AM3TW-2415D-VZ | 9-36 | ±15 | ±100 | ±220 | 168 | 20 | 74 |
| AM3TW-2424D-VZ | 9-36 | ±24 | ±63 | ±100 | 176 | 30 | 73 |
| AM3TW-4805D-VZ | 18-72 | ±5 | ±300 | ±1000 | 85 | 10 | 73 |
| AM3TW-4809D-VZ | 18-72 | ±9 | ±167 | ±220 | 83 | 10 | 75 |
| AM3TW-4812D-VZ | 18-72 | ±12 | ±125 | ±220 | 80 | 10 | 78 |
| AM3TW-4815D-VZ | 18-72 | ±15 | ±100 | ±220 | 80 | 10 | 78 |
| AM3TW-4824D-VZ | 18-72 | ±24 | ±63 | ±100 | 82 | 10 | 76 |
| AM3TW-2405DH35-VZ | 9-36 | ±5 | ±300 | ±1000 | 178 | 20 | 70 |
| AM3TW-2409DH35-VZ | 9-36 | ±9 | ±167 | ±220 | 173 | 20 | 72 |
| AM3TW-2412DH35-VZ | 9-36 | ±12 | ±125 | ±220 | 168 | 20 | 74 |
| AM3TW-2415DH35-VZ | 9-36 | ±15 | ±100 | ±220 | 168 | 20 | 74 |
| AM3TW-2424DH35-VZ | 9-36 | ±24 | ±63 | ±100 | 176 | 30 | 73 |
| AM3TW-4805DH35-VZ | 18-72 | ±5 | ±300 | ±1000 | 85 | 10 | 73 |
| AM3TW-4809DH35-VZ | 18-72 | ±9 | ±167 | ±220 | 83 | 10 | 75 |
| AM3TW-4812DH35-VZ | 18-72 | ±12 | ±125 | ±220 | 80 | 10 | 78 |
| AM3TW-4815DH35-VZ | 18-72 | ±15 | ±100 | ±220 | 80 | 10 | 78 |
| AM3TW-4824DH35-VZ | 18-72 | ±24 | ±63 | ±100 | 82 | 10 | 76 |

Input Specifications

| Parameters | Nominal | Typical | Maximum | Units |
|---------------------------------|--------------------|---------|---------|--------|
| Voltage Range | 24 | 9-36 | | VCD |
| | 48 | 18-72 | | VCD |
| Filter | π (Pi) Network | | | |
| Absolute Max Rating | 24 Vin | -0.7-40 | | VCD |
| | 48 Vin | -0.7-80 | | VCD |
| Peak Input Voltage time | | 15 | | ms |
| Input Reflected Ripple Current* | | 35 | | mA p-p |

* The input reflected ripple current should be measured with connected 12 μ H inductor and a 47 μ F capacitor.

Isolation Specifications

| Parameters | Conditions | Typical | Rated | Units |
|--------------------|----------------------|---------|-------|-------|
| Tested I/O Voltage | 60 sec, H35 models | | 3500 | VDC |
| | 60 sec, other models | | 1500 | VDC |
| Resistance | | > 1000 | | MOhm |
| Capacitance | | 60 | | pF |

Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|--------------------------|--------------------|------------|-----------|-----------------|
| Voltage Accuracy | | | ± 1 | % |
| Short Circuit Protection | Continuous | | | |
| Short Circuit Restart | Auto Recovery | | | |
| Line Voltage Regulation | | | ± 0.5 | % |
| Load Voltage Regulation | | | ± 0.5 | % |
| Temperature Coefficient | | ± 0.02 | | %/ $^{\circ}$ C |
| Ripple & Noise | At 20MHz Bandwidth | | 60 | mV p-p |
| Minimum load* | | 33 | | % |

* Specifications may not be met if the minimum load is not satisfied.

General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|------------------------------|---|-------------------------|-------------------------|--------------|
| Switching Frequency | 100% load | 100-400 | | KHz |
| Operating Temperature | Full Load (see derating chart) | -40 to +85 | | $^{\circ}$ C |
| Storage Temperature | | -40 to +125 | | $^{\circ}$ C |
| Max Case Temperature | | | 100 | $^{\circ}$ C |
| Cooling | Free air convection | | | |
| Humidity | | | 95 | % |
| Case Material | Nickel coated copper | | | |
| Weight | | 17 | | g |
| Dimensions (L x W x H) | Tolerance ± 0.5 mm or ± 0.02 inches | 1.25 x 0.8 x 0.4 inches | 31.75 x 20.32 x 10.2 mm | |
| MTBF | >1,000,000 hrs (MIL-HDBK -217F, Ground Benign, $t=+25^{\circ}$ C) | | | |
| Manual soldering temperature | 1.5mm from case for 10sec | | 260 | $^{\circ}$ C |

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25 $^{\circ}$ C, humidity < 75%, nominal input voltage and at rated output load unless otherwise specified.

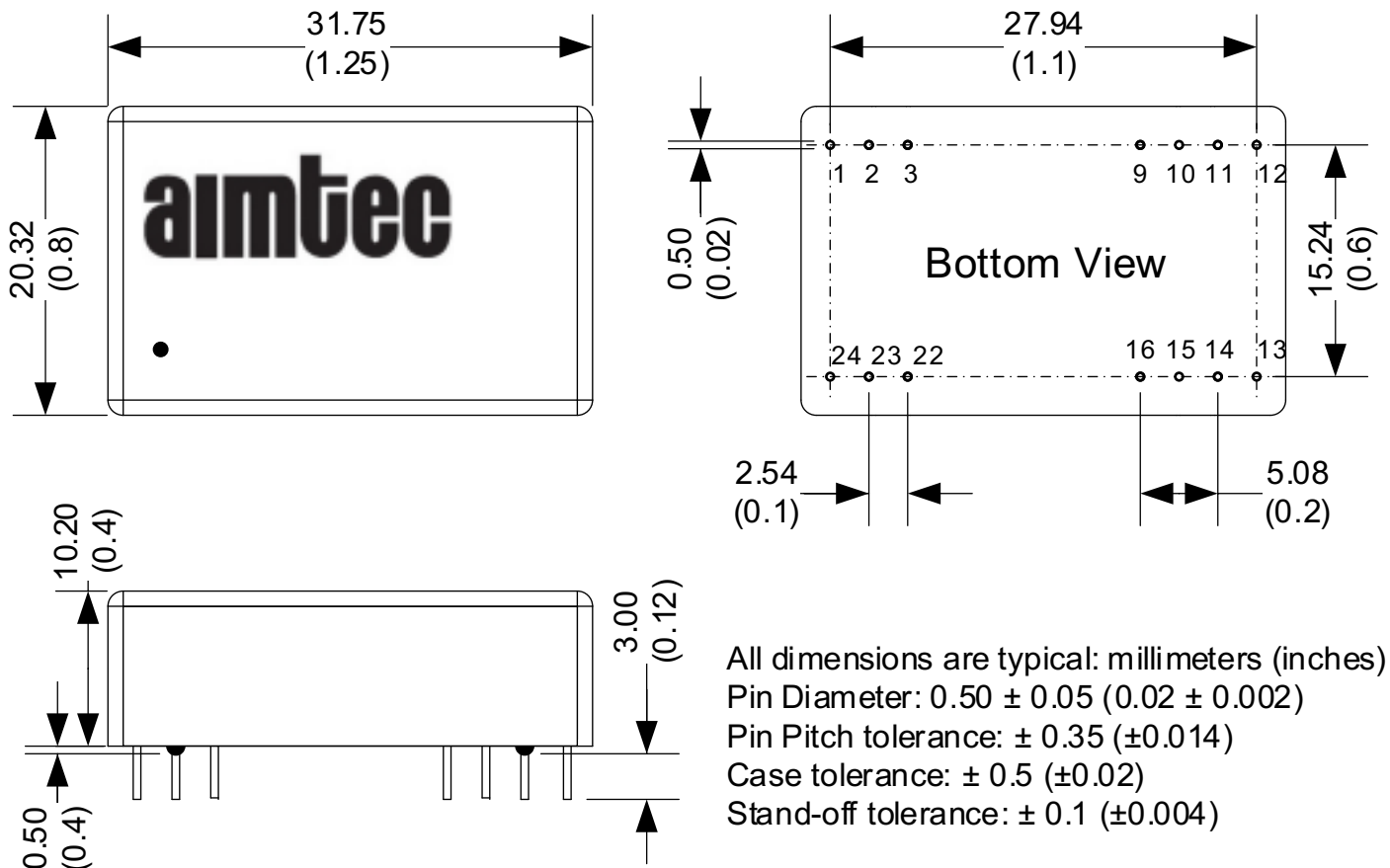
Safety Specifications

| Parameters | |
|------------|------------------------------|
| Standards | Designed to meet IEC 60950-1 |

Pin Out Specifications

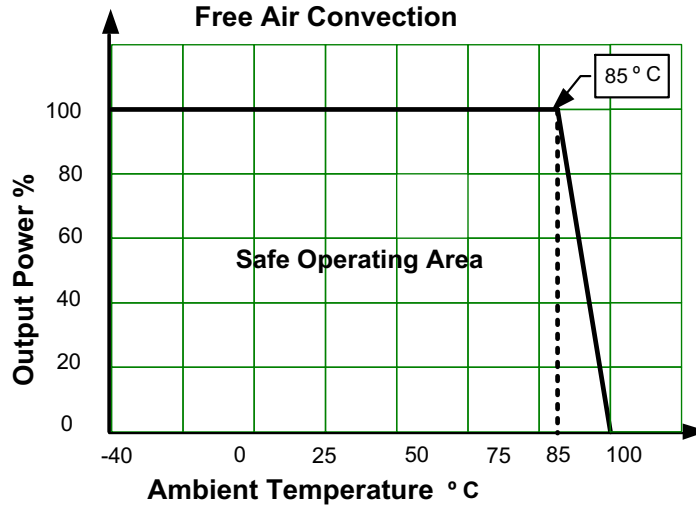
| Pin | 1500VDC | | 3500VDC | |
|-------|-----------|-----------|-----------|-----------|
| | Single | Dual | Single | Dual |
| 1 | +V Input | +V Input | No pin | No pin |
| 2 | N.C. | -V Output | -V Input | -V Input |
| 3 | N.C. | Common | -V Input | -V Input |
| 9 | No pin | No pin | No pin | Common |
| 10 | -V Output | Common | No pin | No pin |
| 11 | +V Output | +V Output | N.C. | -V Output |
| 12/13 | -V Input | -V Input | No pin | No pin |
| 14 | +V Output | +V Output | +V Output | +V Output |
| 15 | -V Output | Common | No pin | No pin |
| 16 | No pin | No pin | -V Output | Common |
| 22 | N.C. | Common | +V Input | +V Input |
| 23 | N.C. | -V Output | +V Input | +V Input |
| 24 | +V Input | +V Input | No pin | No pin |

Dimensions

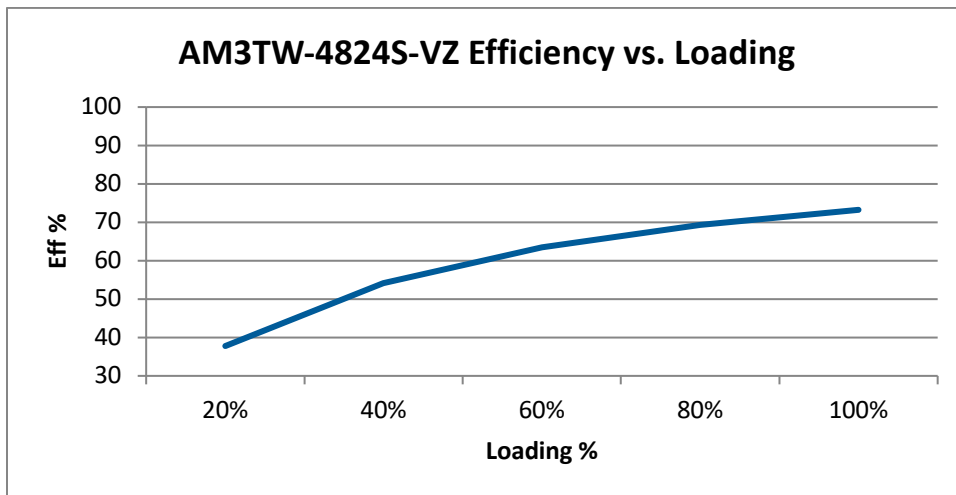
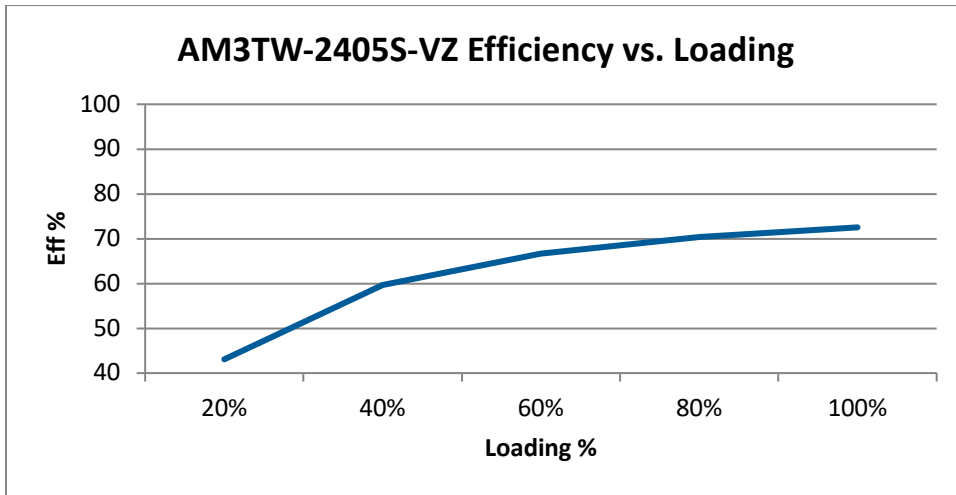


All dimensions are typical: millimeters (inches)
 Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)
 Pin Pitch tolerance: ± 0.35 (±0.014)
 Case tolerance: ± 0.5 (±0.02)
 Stand-off tolerance: ± 0.1 (±0.004)

Derating



Typical Efficiency Example Charts



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