

## FEATURES:



- Regulated Single Output
- Continuous Short Circuit Protection
- RoHS Compliant
- MTBF>3,500,000 hours
- 1000VDC Isolation
- Operating temperature: -40°C to +85°C
- Industry Standard Pinout
- 14 Pin DIP Package

## Models Single output



| Model        | Input Voltage (V) | Output Voltage (V) | Output Current max (mA) | Isolation (VDC) | Max Capacitive Load (uF) | Input Current FL   No Load (mA) | Efficiency (%) |
|--------------|-------------------|--------------------|-------------------------|-----------------|--------------------------|---------------------------------|----------------|
| AM1MR-0503SZ | 4.5-5.5           | 3.3                | 303                     | 1000            | 220                      | 363 30                          | 57             |
| AM1MR-0505SZ | 4.5-5.5           | 5                  | 200                     | 1000            | 220                      | 313 35                          | 65             |
| AM1MR-0507SZ | 4.5-5.5           | 7.2                | 139                     | 1000            | 220                      | 312 30                          | 66             |
| AM1MR-0509SZ | 4.5-5.5           | 9                  | 111                     | 1000            | 220                      | 307 35                          | 67             |
| AM1MR-0512SZ | 4.5-5.5           | 12                 | 83                      | 1000            | 220                      | 303 35                          | 66             |
| AM1MR-0515SZ | 4.5-5.5           | 15                 | 67                      | 1000            | 220                      | 303 35                          | 64             |
| AM1MR-1203SZ | 10.8-13.2         | 3.3                | 303                     | 1000            | 220                      | 148 20                          | 60             |
| AM1MR-1205SZ | 10.8-13.2         | 5                  | 200                     | 1000            | 220                      | 130 20                          | 63             |
| AM1MR-1207SZ | 10.8-13.2         | 7.2                | 139                     | 1000            | 220                      | 128 20                          | 66             |
| AM1MR-1209SZ | 10.8-13.2         | 9                  | 111                     | 1000            | 220                      | 126 20                          | 67             |
| AM1MR-1212SZ | 10.8-13.2         | 12                 | 83                      | 1000            | 220                      | 126 20                          | 66             |
| AM1MR-1215SZ | 10.8-13.2         | 15                 | 67                      | 1000            | 220                      | 122 20                          | 68             |
| AM1MR-2403SZ | 21.6- 26.4        | 3.3                | 303                     | 1000            | 220                      | 74 10                           | 63             |
| AM1MR-2405SZ | 21.6- 26.4        | 5                  | 200                     | 1000            | 220                      | 66 10                           | 68             |
| AM1MR-2407SZ | 21.6- 26.4        | 7.2                | 139                     | 1000            | 220                      | 64 10                           | 68             |
| AM1MR-2409SZ | 21.6- 26.4        | 9                  | 111                     | 1000            | 220                      | 63 10                           | 69             |
| AM1MR-2412SZ | 21.6- 26.4        | 12                 | 83                      | 1000            | 220                      | 62 10                           | 68             |
| AM1MR-2415SZ | 21.6- 26.4        | 15                 | 67                      | 1000            | 220                      | 62 10                           | 66             |

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                    | 5<br>12<br>24 | 4.5- 5.5<br>10.8-13.2<br>21.6- 26.4 |               | VDC   |
| Filter                           | Capacitor     |                                     |               |       |
| Absolute Maximum Rating (100 ms) | 5<br>12<br>24 |                                     | 7<br>15<br>28 | VDC   |
| Input reflected current          |               | 20                                  |               | mA    |

## Isolation Specifications

| Parameters         | Conditions | Typical | Rated | Units |
|--------------------|------------|---------|-------|-------|
| Tested I/O voltage | 60 sec     |         | 1000  | VDC   |
| Resistance         | At 500VDC  | >1000   |       | MOhm  |
| Capacitance        |            | 60      |       | pF    |

## Output Specifications

| Parameters               | Conditions    | Typical | Maximum | Units    |
|--------------------------|---------------|---------|---------|----------|
| Voltage accuracy         |               | ±2      |         | %        |
| Short Circuit protection | Continuous    |         |         |          |
| Short circuit restart    | Auto-Recovery |         |         |          |
| Line voltage regulation  | LL ~ HL       | ±0.5    |         | % of Vin |

## Output Specifications (continued)

| Parameters                            | Conditions           | Typical | Maximum | Units |
|---------------------------------------|----------------------|---------|---------|-------|
| Load voltage regulation               | From 0% to 100% Load | ±0.5    |         | %     |
| Load voltage regulation (3.3V output) | From 0% to 100% Load | ±1      |         | %     |
| Temperature coefficient               |                      | ±0.02   |         | %/°C  |
| Ripple & Noise                        | 20MHz Bandwidth      | 50      |         | mVp-p |

## General Specifications

| Parameters                    | Conditions                                                  | Typical     | Maximum | Units |
|-------------------------------|-------------------------------------------------------------|-------------|---------|-------|
| Switching frequency           |                                                             | 50          |         | KHz   |
| Operating temperature         | Full Load                                                   | -40 to +85  |         | °C    |
| Storage temperature           |                                                             | -40 to +125 |         | °C    |
| Maximum case temperature      |                                                             |             | 100     | °C    |
| Cooling                       | Free Air Convection                                         |             |         |       |
| Humidity                      |                                                             |             | 95      | % RH  |
| Case material                 | Non-Conductive Plastic (UL94V-0)                            |             |         |       |
| Weight                        |                                                             | 2.7         |         | g     |
| Dimensions (L x W x H)        | 20.30 x 10.16 x 6.90mm (0.80 x 0.40 x 0.27 inches)          |             |         |       |
| MTBF                          | >3,500,000hrs dual (MIL-HDBK -217F, Ground Benign, t=+25°C) |             |         |       |
| Maximum soldering temperature | 1.5mm from case for 10 sec                                  |             | 260     | °C    |

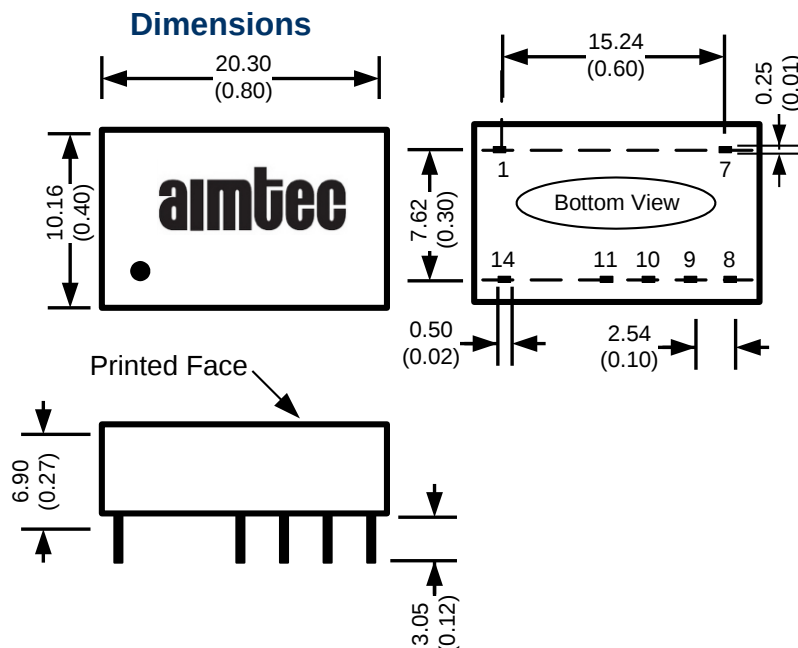
## Safety Specifications

| Parameters       |                                                                                                                                        |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Agency Approvals | CE                                                                                                                                     |
| Safety Standards | EN 55032, Class B<br>IEC61000-4-2<br>IEC61000-4-3<br>IEC61000-4-4<br>IEC61000-4-6<br>IEC61000-4-8<br>Also designed to meet IEC 60950-1 |

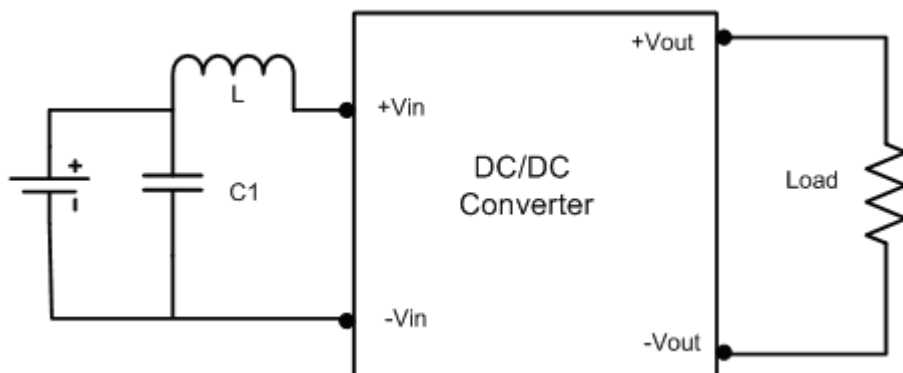
## Pin Out Specifications

| Pin | Single     |
|-----|------------|
| 1   | - V input  |
| 7   | NC         |
| 8   | No Pin     |
| 9   | + V output |
| 10  | No Pin     |
| 11  | - V output |
| 14  | + V input  |

NC: No Connection

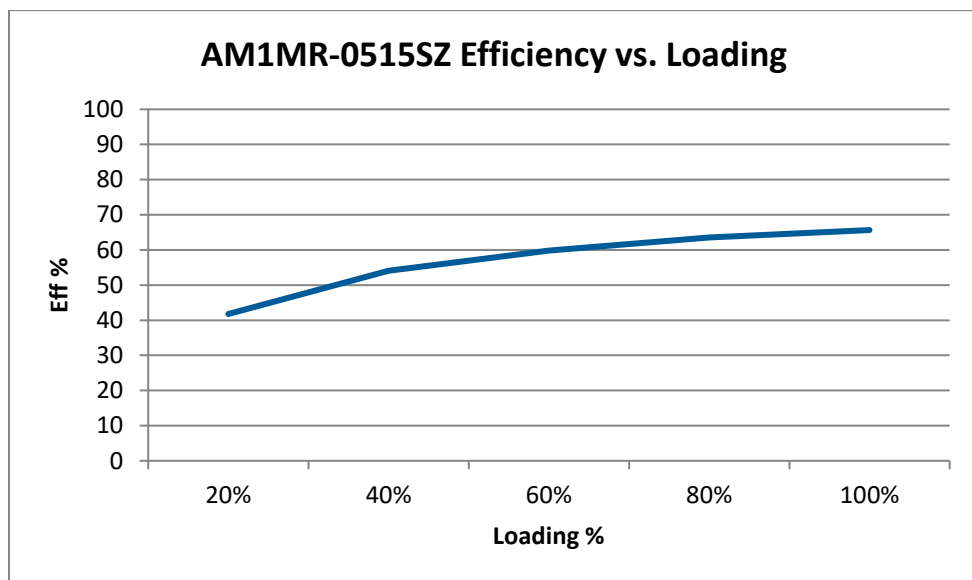


Radiated and Conducted Emissions Application circuit:

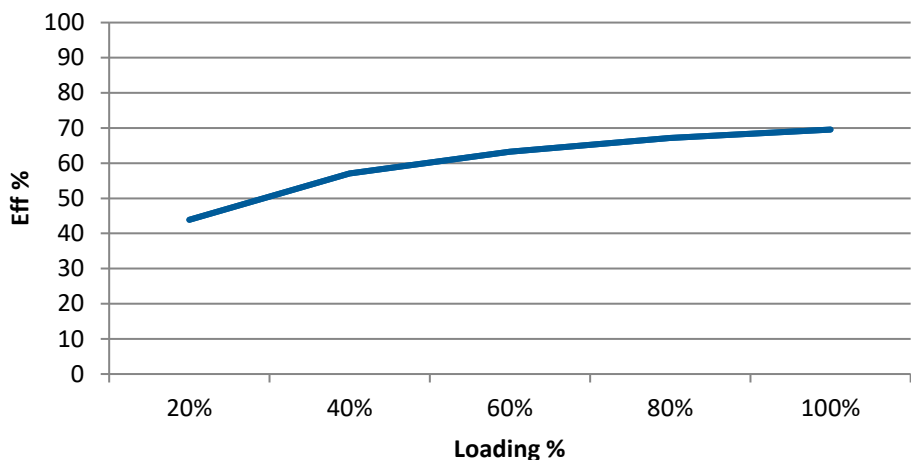


| C1         | L1    |
|------------|-------|
| 470μF/100V | 12 μH |

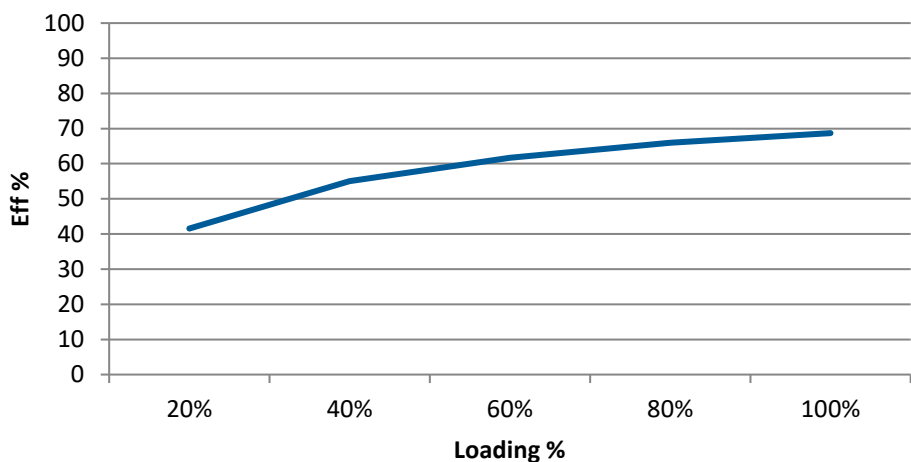
### Typical Efficiency Chart Examples



**AM1MR-1215SZ Efficiency vs. Loading**



**AM1MR-2415SZ Efficiency vs. Loading**



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