

# MMT

A decorative blue wavy graphic that flows across the top of the page, starting from the left and curving towards the right.

## DC/DC CONVERTER

A decorative green graphic featuring a branch with leaves and water droplets on the left side, and a large, flowing green ribbon-like shape that curves across the bottom of the page.

# 8 Watt

2019

<http://www.mmtmachrone.com>

**FEATURES :**

- 8W DIL PACKAGE
- 2:1 WIDE INPUT RANGE
- 100% BURNED IN
- HIGH EFFICIENCY
- UL94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- RoHS COMPLIANT
- 1600Vdc Isolation
- Remote Control:On/Off



DC-DC Converter

**68D8 SERIES**

8Watt 1.6KV Isolated

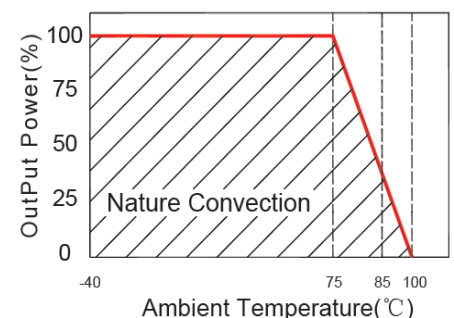
2 : 1 Input Voltage Range

Single & Dual Output

1.2" x 0.4"



Temperature Derating Graph



Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

| Part Number   | Input Voltage | Input Current    |                    | Output Voltage | Output Current | Efficiency |
|---------------|---------------|------------------|--------------------|----------------|----------------|------------|
|               | Vdc           | No Load (mA TYP) | Full Load (mA TYP) | Vdc            | Full Load (mA) | %TYP       |
| 68D8-05S12RNL | 4.5-9         | 120              | 1927               | 12             | 666            | 83         |
| 68D8-05S15RNL | 4.5-9         | 120              | 1927               | 15             | 533            | 83         |
| 68D8-05D12RNL | 4.5-9         | 120              | 1927               | ±12            | ±333           | 83         |
| 68D8-05D15RNL | 4.5-9         | 120              | 1927               | ±15            | ±266           | 83         |
| 68D8-12S03RNL | 9-18          | 50               | 784                | 3.3            | 2424           | 85         |
| 68D8-12S05RNL | 9-18          | 50               | 784                | 5              | 1600           | 86         |
| 68D8-12S12RNL | 9-18          | 50               | 784                | 12             | 666            | 87         |
| 68D8-12S15RNL | 9-18          | 50               | 784                | 15             | 533            | 87         |
| 68D8-12D05RNL | 9-18          | 50               | 784                | ±5             | ±800           | 85         |
| 68D8-12D12RNL | 9-18          | 50               | 784                | ±12            | ±333           | 87         |
| 68D8-12D15RNL | 9-18          | 50               | 784                | ±15            | ±267           | 87         |
| 68D8-24S03RNL | 18-36         | 30               | 392                | 3.3            | 2424           | 85         |
| 68D8-24S05RNL | 18-36         | 30               | 392                | 5              | 1600           | 86         |
| 68D8-24S12RNL | 18-36         | 30               | 392                | 12             | 666            | 87         |
| 68D8-24S15RNL | 18-36         | 30               | 392                | 15             | 533            | 87         |
| 68D8-24D05RNL | 18-36         | 30               | 392                | ±5             | ±800           | 85         |
| 68D8-24D12RNL | 18-36         | 30               | 392                | ±12            | ±333           | 87         |
| 68D8-24D15RNL | 18-36         | 30               | 392                | ±15            | ±267           | 87         |
| 68D8-48S03RNL | 36-75         | 20               | 196                | 3.3            | 2424           | 85         |
| 68D8-48S05RNL | 36-75         | 20               | 196                | 5              | 1600           | 86         |
| 68D8-48S12RNL | 36-75         | 20               | 196                | 12             | 666            | 87         |
| 68D8-48S15RNL | 36-75         | 20               | 196                | 15             | 533            | 87         |
| 68D8-48D05RNL | 36-75         | 20               | 196                | ±5             | ±800           | 85         |
| 68D8-48D12RNL | 36-75         | 20               | 196                | ±12            | ±333           | 87         |

**Input Specifications**

| Parameters    | Conditions | Min | Typ | Max | Units |
|---------------|------------|-----|-----|-----|-------|
| Voltage Types |            |     |     | 2:1 |       |
| Filter        | Capacitor  |     |     |     |       |

**Output Specifications**

| Parameters                      | Conditions                           | Min | Typ | Max        | Units |
|---------------------------------|--------------------------------------|-----|-----|------------|-------|
| Voltage Tolerance               | Full load@Vin(nom.)                  |     |     | ±2         | %     |
| Short Circuit Protection        | Hiccup, automatic Recovery           |     |     |            |       |
| Line Regulation                 |                                      |     |     | ±0.5       | %     |
| Load Regulation                 | Single<br>Dual(Balance Load)         |     |     | ±0.5<br>±1 | %     |
| Cross Regulation                | Dual<br>(25% To 100% Load)           |     |     | ±5         | %     |
| Ripple & Noise                  | Output:3-15V TYPES<br>BW=DC To 20MHz |     |     | 100        | mVp-p |
| Ripple & Noise                  | Output > 15V TYPES<br>BW=DC To 20MHz |     |     | 1% of Vout | mVp-p |
| Transient response setting time | 25% load step change                 |     | 350 |            | us    |

**General Specifications**

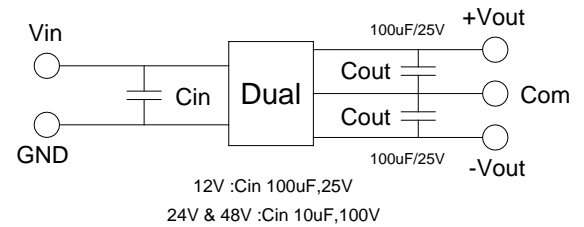
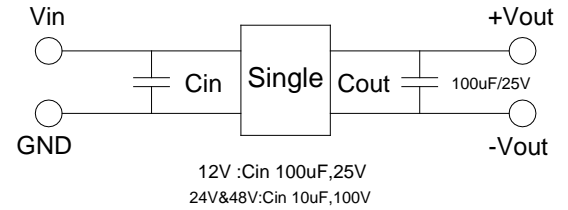
| Parameters            | Conditions                                   | Min     | Typ            | Max | Units |
|-----------------------|--|---------|----------------|-----|-------|
| Isolation Voltage     |  |         | 1600           |     | Vdc   |
| Isolation Resistance  | 500Vdc                                       | 1000    |                |     | MΩ    |
| Switching Frequency   |  |         | 400            |     | KHz   |
| Operating Temperature | With derating                                | -40     |                | 100 | °C    |
| Storage Temperature   |  | -55     |                | 125 | °C    |
| Humidity              | Non Condensing                               |         |                | 95  | %     |
| Cooling               | Free air Convection                          |         |                |     |       |
| Case material         | Nickel coated copper with no-conductive base |         |                |     |       |
| MTBF                  | MIL-HDBK-217F@25°C                           | 1500000 |                |     | Hours |
| Weight                |  |         | 16.2           |     | g     |
| Dimensions            |  |         | 31.6x20.1x10.0 |     | mm    |

**Part Number**

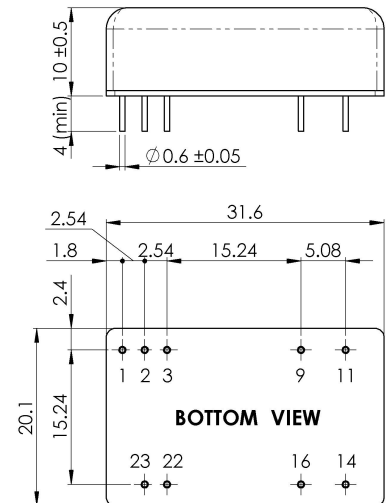
68D8 - 12 S 03 R NL  
A B C D E F

- A : Series
- B : Input Voltage
- C : Single Output(S),Dual(D)
- D : Output Voltage
- E : Regulated(R)
- F : RoHs Version

**Recommended Test Circuit**



**Markings and dimensions**



Unit : mm  
Tolerance : XX.X ±0.5 , XX.XX ±0.25

**PIN Assignment**

| Pin    | 1             | 2,3  | 9      | 11    | 14    | 16     | 22,23 |
|--------|---------------|------|--------|-------|-------|--------|-------|
| Single | Remote ON/OFF | -Vin | NC     | NC    | +Vout | -Vout  | +Vin  |
| Dual   | Remote ON/OFF | -Vin | Common | -Vout | +Vout | Common | +Vin  |

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- CUSTOM SOLUTIONS AVAILABLE
- RoHS COMPLIANT
- 1600Vdc Isolation
- Remote Control:On/Off



DC-DC Converter

**68DW8 SERIES**

8Watt 1.6KV Isolated

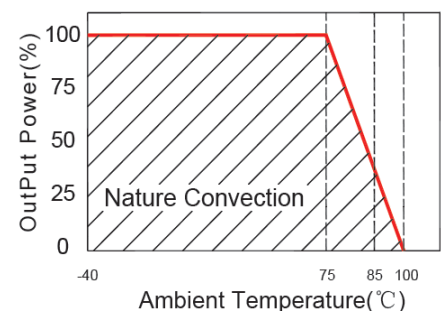
4 : 1 Input Voltage Range

Single & Dual Output

1.2" x 0.4"



Temperature Derating Graph



Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

| Part Number    | Input Voltage | Input Current    |                    | Output Voltage | Output Current | Efficiency |
|----------------|---------------|------------------|--------------------|----------------|----------------|------------|
|                | Vdc           | No Load (mA TYP) | Full Load (mA TYP) | Vdc            | Full Load (mA) | %TYP       |
| 68DW8-24S03RNL | 9-36          | 30               | 392                | 3.3            | 2424           | 85         |
| 68DW8-24S05RNL | 9-36          | 30               | 392                | 5              | 1600           | 86         |
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**Input Specifications**

| Parameters    | Conditions | Min | Typ        | Max | Units |
|---------------|------------|-----|------------|-----|-------|
| Voltage Types |            |     |            | 4:1 |       |
| Filter        |            |     | PI Network |     |       |

**Output Specifications**

| Parameters                      | Conditions                           | Min | Typ | Max        | Units |
|---------------------------------|--------------------------------------|-----|-----|------------|-------|
| Voltage Tolerance               | Full load@Vin(nom.)                  |     |     | ±2         | %     |
| Short Circuit Protection        | Hiccup, automatic Recovery           |     |     |            |       |
| Line Regulation                 |                                      |     |     | ±0.5       | %     |
| Load Regulation                 | Single<br>Dual(Balance Load)         |     |     | ±0.5<br>±1 | %     |
| Cross Regulation                | Dual<br>(25% To 100% Load)           |     |     | ±5         | %     |
| Ripple & Noise                  | Output:3-15V TYPES<br>BW=DC To 20MHz |     |     | 100        | mVp-p |
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**General Specifications**

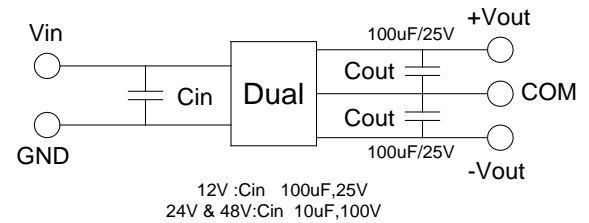
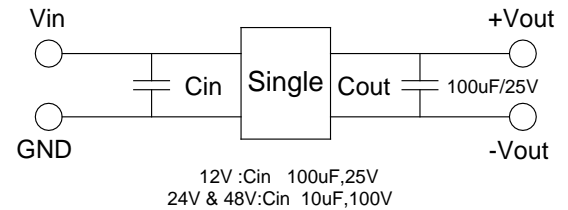
| Parameters            | Conditions                                   | Min            | Typ  | Max | Units |
|-----------------------|--|----------------|------|-----|-------|
| Isolation Voltage     |  |                | 1600 |     | Vdc   |
| Isolation Resistance  | 500Vdc                                       | 1000           |      |     | MΩ    |
| Switching Frequency   |  |                | 400  |     | KHz   |
| Operating Temperature | With derating                                | -40            |      | 100 | °C    |
| Storage Temperature   |  | -55            |      | 125 | °C    |
| Humidity              | Non Condensing                               |                |      | 95  | %     |
| Cooling               | Free air Convection                          |                |      |     |       |
| Case material         | Nickel coated copper with no-conductive base |                |      |     |       |
| MTBF                  | MIL-HDBK-217F@25°C                           | 1500000        |      |     | Hours |
| Weight                |  |                | 16.2 |     | g     |
| Dimensions            |  | 31.6x20.1x10.0 |      |     | mm    |

**Part Number**

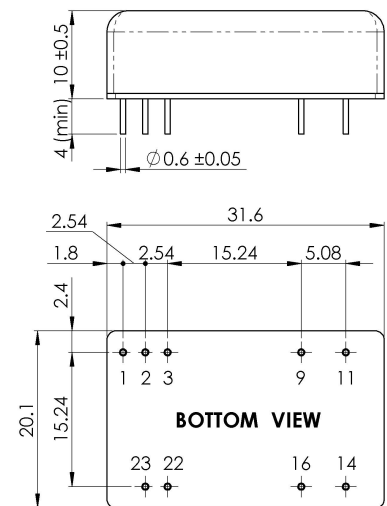
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**PIN Assignment**

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|--------|---------------|------|--------|-------|-------|--------|-------|
| Single | Remote ON/OFF | -Vin | NC     | NC    | +Vout | -Vout  | +Vin  |
| Dual   | Remote ON/OFF | -Vin | Common | -Vout | +Vout | Common | +Vin  |