



## Wide Input Voltage Range 10 Watt Dc-Dc Converter



### FEATURES:

- 10W DIL PACKAGE
- 2:1 WIDE INPUT RANGE
- 100% BURNED IN
- HIGH EFFICIENCY
- UL94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- RoHS COMPLIANT
- 3 YEARS WARRANTY
- Remote Control:On/Off



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       |
| 68D10-12S03RNL | 9-18          | 30               | 1006               | 3.3            | 3000           | 82         |
| 68D10-12S05RNL | 9-18          | 30               | 1016               | 5              | 2000           | 82         |
| 68D10-12S12RNL | 9-18          | 30               | 1004               | 12             | 833            | 83         |
| 68D10-12S15RNL | 9-18          | 30               | 1009               | 15             | 670            | 83         |
| 68D10-12D05RNL | 9-18          | 30               | 1004               | ±5             | ±1000          | 83         |
| 68D10-12D12RNL | 9-18          | 30               | 1012               | ±12            | ±420           | 83         |
| 68D10-12D15RNL | 9-18          | 30               | 1024               | ±15            | ±340           | 83         |
| 68D10-24S03RNL | 18-36         | 30               | 503                | 3.3            | 3000           | 82         |
| 68D10-24S05RNL | 18-36         | 30               | 508                | 5              | 2000           | 82         |
| 68D10-24S12RNL | 18-36         | 30               | 502                | 12             | 833            | 83         |
| 68D10-24S15RNL | 18-36         | 30               | 504                | 15             | 670            | 83         |
| 68D10-24D05RNL | 18-36         | 30               | 502                | ±5             | ±1000          | 83         |
| 68D10-24D12RNL | 18-36         | 30               | 506                | ±12            | ±420           | 83         |
| 68D10-24D15RNL | 18-36         | 30               | 512                | ±15            | ±340           | 83         |
| 68D10-48S03RNL | 36-75         | 20               | 251                | 3.3            | 3000           | 82         |
| 68D10-48S05RNL | 36-75         | 20               | 254                | 5              | 2000           | 82         |
| 68D10-48S12RNL | 36-75         | 20               | 251                | 12             | 833            | 83         |
| 68D10-48S15RNL | 36-75         | 20               | 252                | 15             | 670            | 83         |
| 68D10-48D05RNL | 36-75         | 20               | 251                | ±5             | ±1000          | 83         |
| 68D10-48D12RNL | 36-75         | 20               | 253                | ±12            | ±420           | 83         |
| 68D10-48D15RNL | 36-75         | 20               | 256                | ±15            | ±340           | 83         |

### Input Specifications

| Parameters           | Conditions       | Min | Typ | Max | Units |
|----------------------|------------------|-----|-----|-----|-------|
| <b>Voltage Types</b> |                  |     |     | 2:1 |       |
| <b>Filter</b>        | Pi Network       |     |     |     |       |
| <b>Protection</b>    | Fuse Recommended |     |     |     |       |

### Output Specifications (Temperature Coefficient : ±0.05%/°C)

| Parameters                             | Conditions                      | Min | Typ | Max  | Units |
|--|---------------------------------|-----|-----|------|-------|
| <b>Voltage Tolerance</b>               | Single/Dual                     |     |     | ±2   | %     |
| <b>Short Circuit/ Restart</b>          | Continuous/ Automatic           |     |     |      |       |
| <b>Over Load Protection</b>            |                                 |     | 150 |      | %     |
| <b>Line Regulation</b>                 | High Line to Low Line           |     |     | ±0.5 | %     |
| <b>Load Regulation</b>                 | Single & Dual (F.L-25%F.L)      |     |     | ±0.5 | %     |
| <b>Minimum Load</b>                    | 10% of Full Load                |     |     |      |       |
| <b>Ripple &amp; Noise</b>              | BW=DC To 20MHz (with 1uF Cap.)  |     |     | 100  | mVp-p |
| <b>Transient response setting time</b> | current change from 25% to 100% |     |     | 350  | us    |

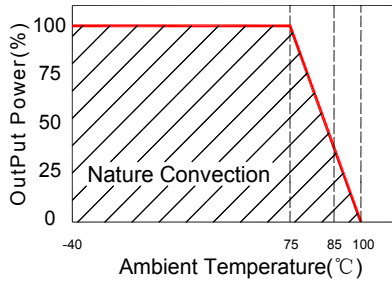
### General Specifications

| Parameters                   | Conditions                          | Min    | Typ                   | Max  | Units |
|------------------------------|-------------------------------------|--------|-----------------------|------|-------|
| <b>Isolation Resistance</b>  | 500Vdc                              | 1000   |                       |      | MΩ    |
| <b>Switching Frequency</b>   |                                     |        | 400                   |      | KHz   |
| <b>Operating Temperature</b> |                                     | -40    |                       | 100  | °C    |
| <b>Humidity</b>              | Non Condensing                      |        |                       | 95   | %     |
| <b>Cooling</b>               | Free air Convection                 |        |                       |      |       |
| <b>Case material</b>         | Five-Side Shielded Case             |        |                       |      |       |
| <b>Weight</b>                |                                     |        | 17.5                  |      | g     |
| <b>Dimensions</b>            | Appearance size                     |        | 31.6X20.1X10.0        |      | mm    |
| <b>Potting Material</b>      |                                     |        | Epoxy (UL94V-0 rated) |      |       |
| <b>Radiated Emissions</b>    | EN55022                             |        | CLASS A               |      |       |
| <b>Conducted Emissions</b>   | EN55022                             |        | CLASS A               |      |       |
| <b>Efficiency</b>            |                                     | 80     |                       |      | %     |
| <b>Isolation Voltage</b>     | For 10 seconds                      |        |                       | 1500 | VDC   |
| <b>MTBF</b>                  | MIL-HDBK-217F @25°C , Ground Benign | 900000 |                       |      | Hours |
| <b>Storage Temperature</b>   |                                     | -55    |                       | +125 | °C    |
| <b>Case Temperature</b>      |                                     |        |                       | +95  | °C    |

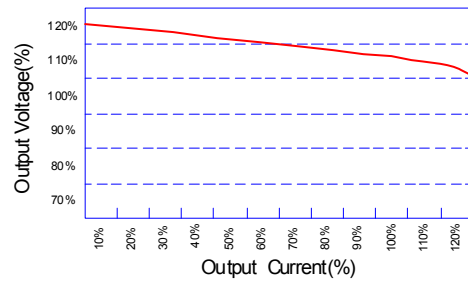


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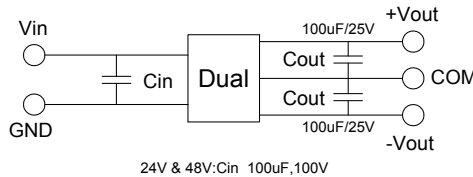
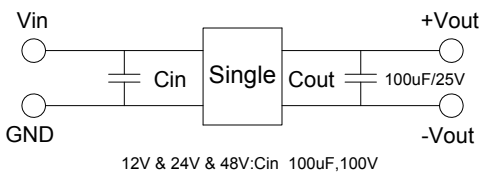
Temperature Derating Graph



Tolerance Envelope Graph



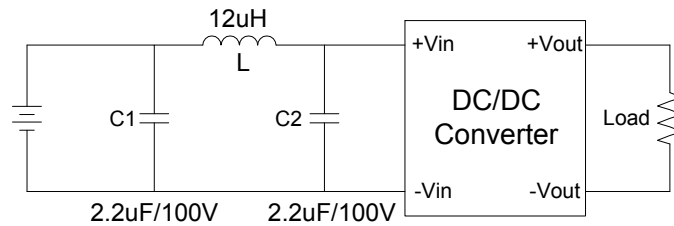
Recommended Test Circuit



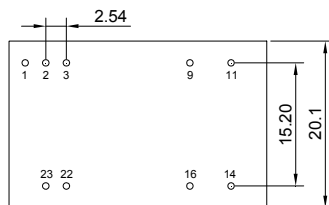
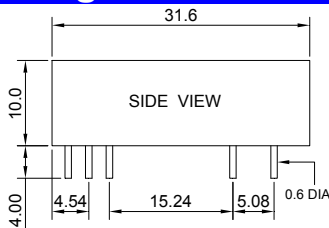
Part Number

68D10-12 S 03 R NL  
 A B C D E F  
 A:Series  
 B:Input Voltage  
 C:Single(S)Dual(D)  
 D:Output Voltage  
 E:Regulated(R)  
 F:RoHS Version

Input filter components(C1, C2,L) are used to help meet conducted emissions (EN55022 class A) requirement for the module . These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.

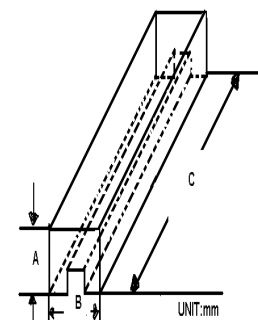


Markings and dimensions



UNIT:mm XX.X±0.5 XX.XX±0.25  
 Pin Size Tolerance: 0.6Φ ±0.05mm

Packaging



| SIZE(mm) |       |     |
|----------|-------|-----|
| A        | B     | C   |
| 18.71    | 23.00 | 522 |

PIN Connection

| 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  |