

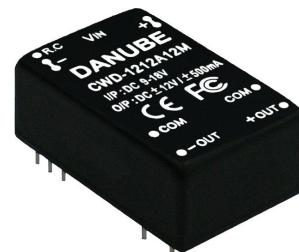
CW SERIES

10W ~ 12W WIDE INPUT RANGE

DANUBE

FEATURES

- 10W ~ 12W DIL PACKAGE
- 9-18V,18-36V,36-75V WIDE INPUT RANGE
- 100% BURNED IN
- HIGH EFFICIENCY
- UL94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- RoHS COMPLIANT
- 3 YEARS WARRANTY



OUTPUT SPECIFICATIONS

| | |
|---------------------------------------|------------------|
| Voltage Setpoint Accuracy | +/-2% max |
| Temperature Coefficient | +/-0.05%/°C |
| Ripple & Noise(20MHz BW) ¹ | 100mVp-p max |
| Line Regulation ² | +/-0.5% max |
| Load Regulation ³ | +/-0.5% max |
| Output: 2.5V , 3.3V | +/-1% max |
| Minimum Load | 20% of Full Load |
| Short Circuit Protection | Continuous |
| Short Circuit Restart | Automatic |
| Over Load Protection | 110%~180% |
| Transient Response ⁵ | 350uS max |

INPUT SPECIFICATIONS

| | |
|---------------------|------------------|
| Input Voltage Range | 2:1 Input Range |
| Input Filter | Pi Network |
| Protection | Fuse Recommended |

GENERAL SPECIFICATIONS

| | |
|--------------------------------|---|
| Efficiency | 78% min |
| Isolation Voltage ⁴ | 1500VDC min |
| Isolation Resistance | 10 ⁹ ohms min |
| Isolation Capacitance | 2200pF max |
| Switching Frequency | 400KHz Typ |
| MTBF ⁶ | >600,000 Hours |
| Weight | 18.5g Typ |
| Case Material | Five-Side Shielded Case |
| Case Size | 31.8mm*20.3mm*12.2mm |
| Potting Material | Epoxy (UL94V-0) |
| Conducted Emissions | EN55022 Class A |
| Radiated Emissions | EN55022 Class A |
| Remote On/Off | |
| -ON | 3.0...12V/DC or open circuit (referenced to-Vin) |
| -Off | 0...1.2V/DC or short circuit pin 1 and pin 2/3 |
| -Off idle current | 2.5mA |

ENVIRONMENTAL SPECIFICATIONS

| | |
|-----------------------|-------------------------------------|
| Operating Temperature | -40 °C to +85 °C (with derating) |
| Case Temperature | +95 °C max |
| Storage Temperature | -55 °C to +105 °C |
| Humidity | 95% max |
| Cooling | Free-Air Convection |

ALL SPECIFICATIONS TYPICAL AT NOMINAL LINE, FULL LOAD , AND 25 °C UNLESS OTHERWISE NOTED.

¹ Measured with 1uF ceramic capacitor connect to the output pins.

² High Line to Low Line.

³ Load Regulation is for output load current change from 20% to 100%.

⁴ 1500VDC for 10 seconds.

⁵ 25% Step Load Change.

⁶ MIL-HDBK-217F @25 °C , Ground Benign.

● **SELECTION GUIDE(1)**
2:1 10W~12W OUTPUT

| MODEL ⁷ NUMBER | INPUT VOLTAGE (VDC) | OUTPUT VOLTAGE (VDC) | OUTPUT CURRENT (mA) | INPUT ⁸ CURRENT(mA) | | EFF (%) ⁹ | PACKAGE | Capacitor Load max |
|------------------------------|---------------------------|----------------------------|---------------------------|-----------------------------------|------------|-------------------------|---------|-----------------------|
| | | | | FULL LOAD | NO LOAD | | | |
| CWS-1202.5A10M | 9-18 | 2.5 | 3000 | 802 | 70 | 78 | A | 1000uF |
| CWS-1203.3A10M | 9-18 | 3.3 | 3000 | 1025 | 70 | 80 | A | 1000uF |
| CWS-1205A12M | 9-18 | 5 | 2400 | 1190 | 70 | 84 | A | 1000uF |
| CWS-1212A12M | 9-18 | 12 | 1000 | 1204 | 70 | 83 | A | 220uF |
| CWS-1215A12M | 9-18 | 15 | 800 | 1204 | 70 | 83 | A | 220uF |
| CWD-1205A12M | 9-18 | +/-5 | +/-1200 | 1235 | 70 | 81 | A | +/-670uF |
| CWD-1212A12M | 9-18 | +/-12 | +/-500 | 1190 | 70 | 84 | A | +/-100uF |
| CWD-1215A12M | 9-18 | +/-15 | +/-400 | 1204 | 70 | 83 | A | +/-47uF |
| CWS-2402.5A10M | 18-36 | 2.5 | 3000 | 401 | 35 | 78 | A | 1000uF |
| CWS-2403.3A10M | 18-36 | 3.3 | 3000 | 513 | 35 | 80 | A | 1000uF |
| CWS-2405A12M | 18-36 | 5 | 2400 | 602 | 35 | 83 | A | 1000uF |
| CWS-2412A12M | 18-36 | 12 | 1000 | 602 | 35 | 83 | A | 220uF |
| CWS-2415A12M | 18-36 | 15 | 800 | 590 | 35 | 85 | A | 220uF |
| CWD-2405A12M | 18-36 | +/-5 | +/-1200 | 618 | 35 | 81 | A | +/-670uF |
| CWD-2412A12M | 18-36 | +/-12 | +/-500 | 595 | 35 | 84 | A | +/-100uF |
| CWD-2415A12M | 18-36 | +/-15 | +/-400 | 595 | 35 | 84 | A | +/-47uF |
| CWS-4802.5A10M | 36-75 | 2.5 | 3000 | 201 | 25 | 78 | A | 1000uF |
| CWS-4803.3A10M | 36-75 | 3.3 | 3000 | 252 | 25 | 83 | A | 1000uF |
| CWS-4805A12M | 36-75 | 5 | 2400 | 298 | 25 | 84 | A | 1000uF |
| CWS-4812A12M | 36-75 | 12 | 1000 | 301 | 25 | 83 | A | 220uF |
| CWS-4815A12M | 36-75 | 15 | 800 | 294 | 25 | 85 | A | 220uF |
| CWD-4805A12M | 36-75 | +/-5 | +/-1200 | 309 | 25 | 81 | A | +/-670uF |
| CWD-4812A12M | 36-75 | +/-12 | +/-500 | 298 | 25 | 84 | A | +/-100uF |
| CWD-4815A12M | 36-75 | +/-15 | +/-400 | 298 | 25 | 84 | A | +/-47uF |

Note: Other input to output voltages may be available. Please contact factory.

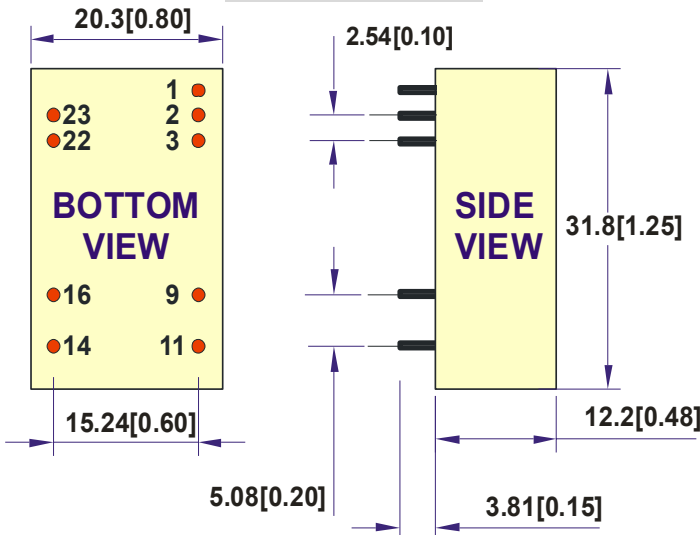
⁷ CW*-*****A12M AND CW*-*****A10M (Isolation For 1500 VDC)

⁸ NOMINAL INPUT VOLTAGE.

⁹ NOMINAL INPUT VOLTAGE, FULL LOAD.

MECHANICAL DIMENSIONS

PACKAGE "A"



| PIN | SINGLE | DUAL |
|---------|---------------|---------------|
| 1 | Remote On/Off | Remote On/Off |
| 2 & 3 | -Vin | -Vin |
| 9 | NC | Common |
| 11 | NC | -Vout |
| 14 | +Vout | +Vout |
| 16 | -Vout | Common |
| 22 & 23 | +Vin | +Vin |

NOTE:

Pin Size is Tolerance $0.6\Phi \pm 0.05\text{mm}$

All Dimensions In mm(Inches)

Tolerance .X or .XX= $\pm 0.5\text{mm}$

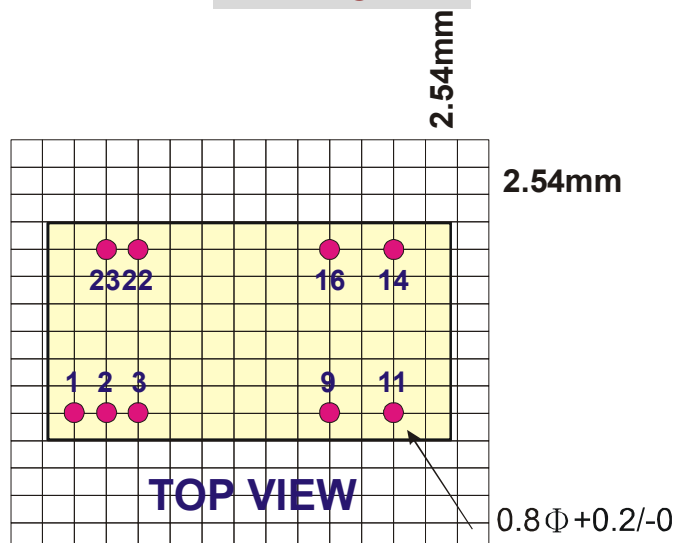
All dimensions are in mm[inches]

Remote On/Off Control

| Control Input | PIN1 | Control Common | PIN2&PIN3 |
|-----------------|---------------------------------|---------------------------------|---------------|
| Control Voltage | | Converter Shutdown Idle Current | 10mA |
| ON | >+2.5VDC or Open Circuit | Logic Compatibility | CMOS or Open |
| OFF | <+0.8VDC or Jumper to PIN2&PIN3 | | Collector TTL |

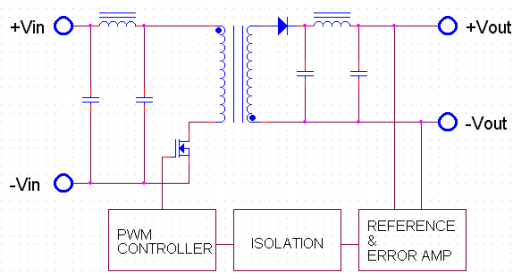
RECOMMENDED FOOTPRINT DETAILS

PACKAGE "A"

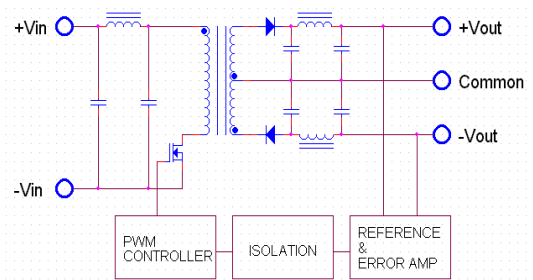


● SIMPLIFIED SCHEMATIC

SINGLE OUTPUT



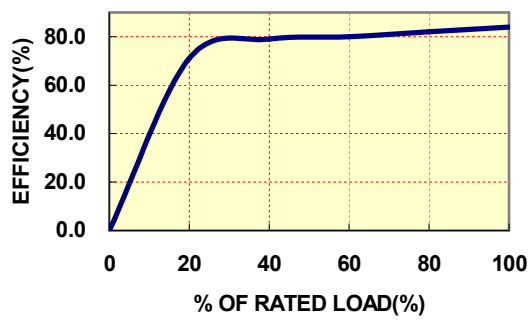
DUAL OUTPUT



● TYPICAL PERFORMANCE CURVES

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

OUTPUT LOAD VS EFFICIENCY



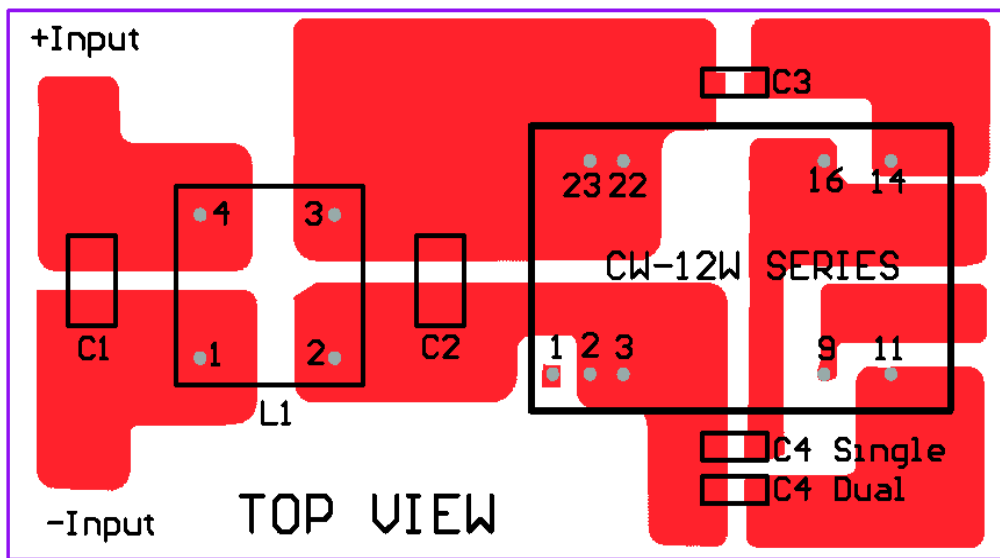
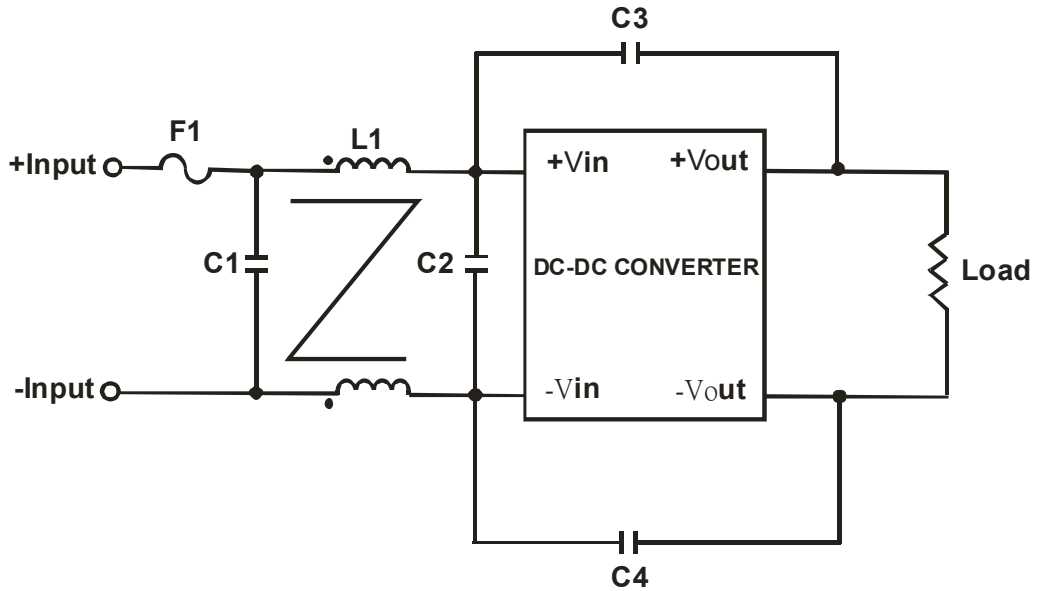
TEMPERATURE DERATING



● Recommended Filter for EN55022 Class B Compliance

The components used in the above figure, together with the manufacturer's part numbers for these components, are as follows:

| | C1 | C2 | C3 | C4 | L1 |
|--------------------|-------------------------|-------------------------|--------------------|--------------------|-----------------------|
| CW-12W CW*-12** | 3.3uF/50V 1812 MLCC | N/A | 1000pF/2KV MLCC | 1000pF/2KV MLCC | 325uH Common Choke |
| CW-12W CW*-24** | 4.7uF/50V 1812 MLCC | N/A | 1000pF/2KV MLCC | 1000pF/2KV MLCC | 325uH Common Choke |
| CW-12W CW*-48** | 2.2uF/100V 1812 MLCC | 2.2uF/100V 1812 MLCC | 1000pF/2KV MLCC | 1000pF/2KV MLCC | 325uH Common Choke |



Recommended EN55022 Class B Filter Circuit Layout

● INPUT FUSE SELECTION GUIDE

| 9-18V INPUT VOLTAGE(VDC) | 18-36V INPUT VOLTAGE(VDC) | 36-75V INPUT VOLTAGE(VDC) |
|-----------------------------|------------------------------|------------------------------|
| 3000mA Slow-Blow Type | 1200mA Slow-Blow Type | 600mA Slow-Blow Type |

Note: Certain applications may require the installation of external fuse in front of the input.

CW 10W ~ 12W SERIES APPLICATION NOTES:

EXTERNAL CAPACITANCE REQUIREMENTS:

No external capacitance is required for operation of the CW 10W ~ 12W SERIES.

To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5 ohm from DC to 100KHz is required.

External output capacitance is not required for operation, however it is recommended that 10uF tantalum and 0.1uF ceramic capacitance be selected for reduced system noise.

We Can Offer EMC-Filter According To EN55011/22 Class A.

FOR MORE INFORMATION CALL:

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Home Page

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