

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.

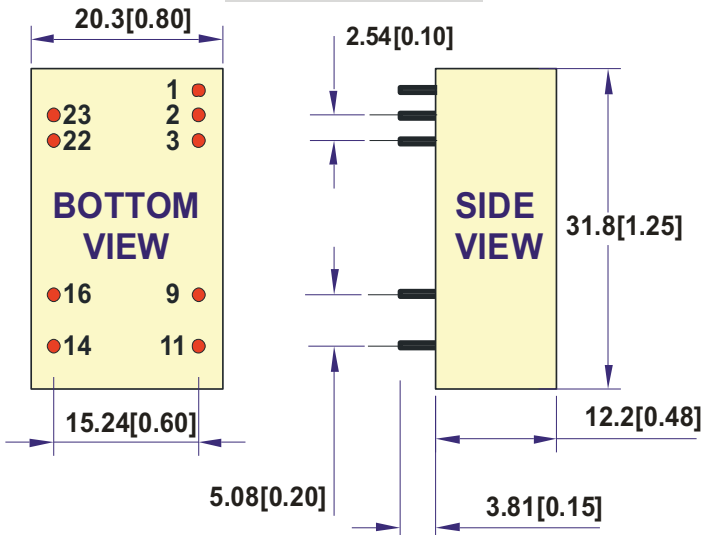
⁷ CW*-****A12M AND CW*-****A10M (Isolation For 1500 VDC)

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= $\pm 0.5\text{mm}$

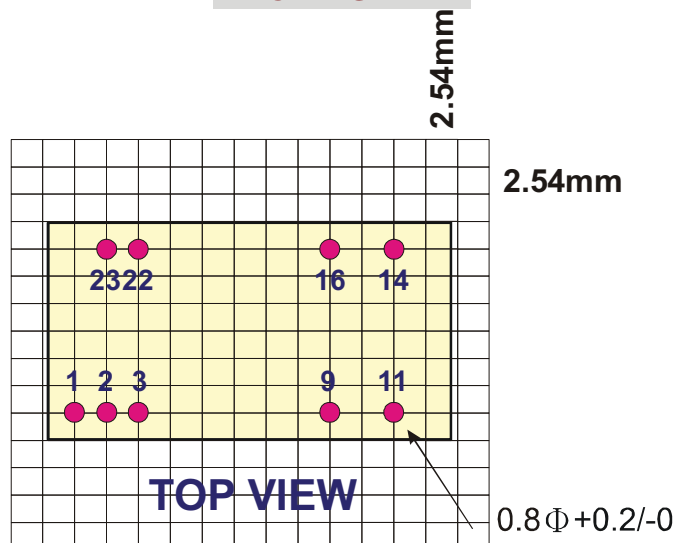
All dimensions are in mm[inches]

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

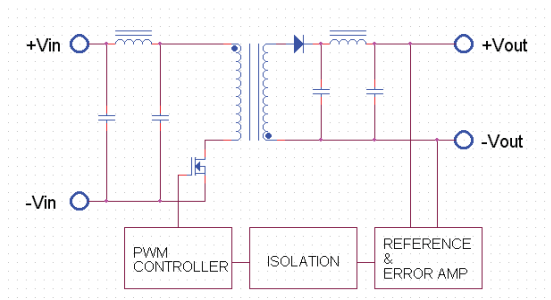
RECOMMENDED FOOTPRINT DETAILS

PACKAGE "A"

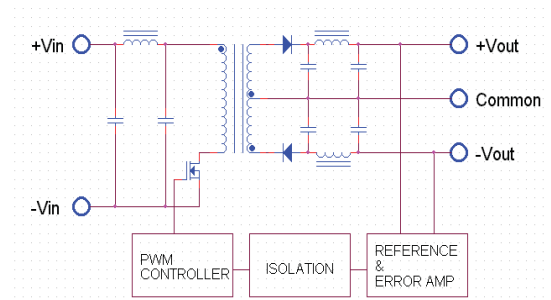


● SIMPLIFIED SCHEMATIC

SINGLE OUTPUT



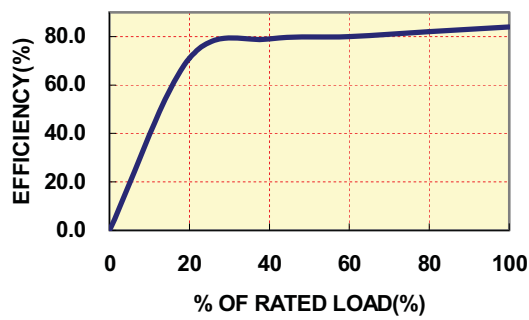
DUAL OUTPUT



● TYPICAL PERFORMANCE CURVES

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

OUTPUT LOAD VS EFFICIENCY



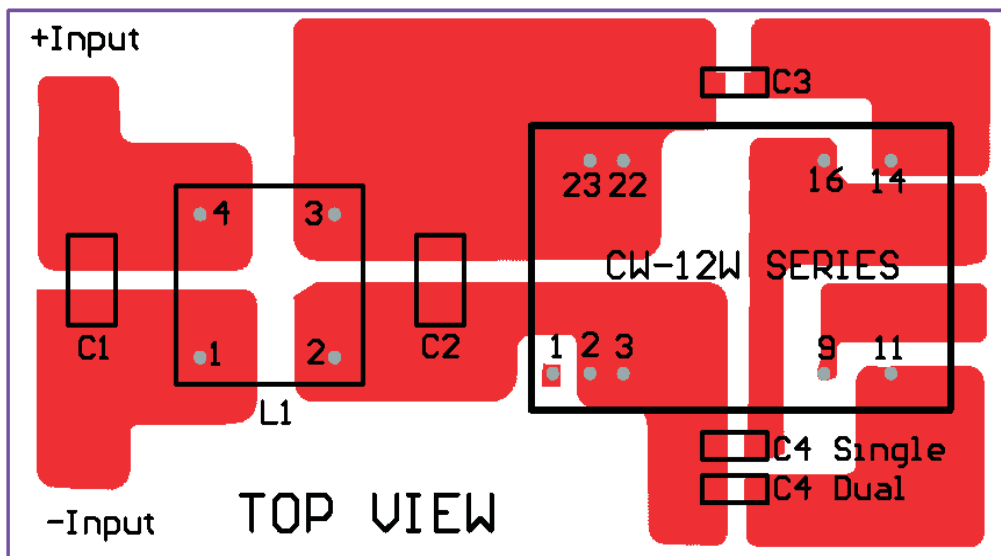
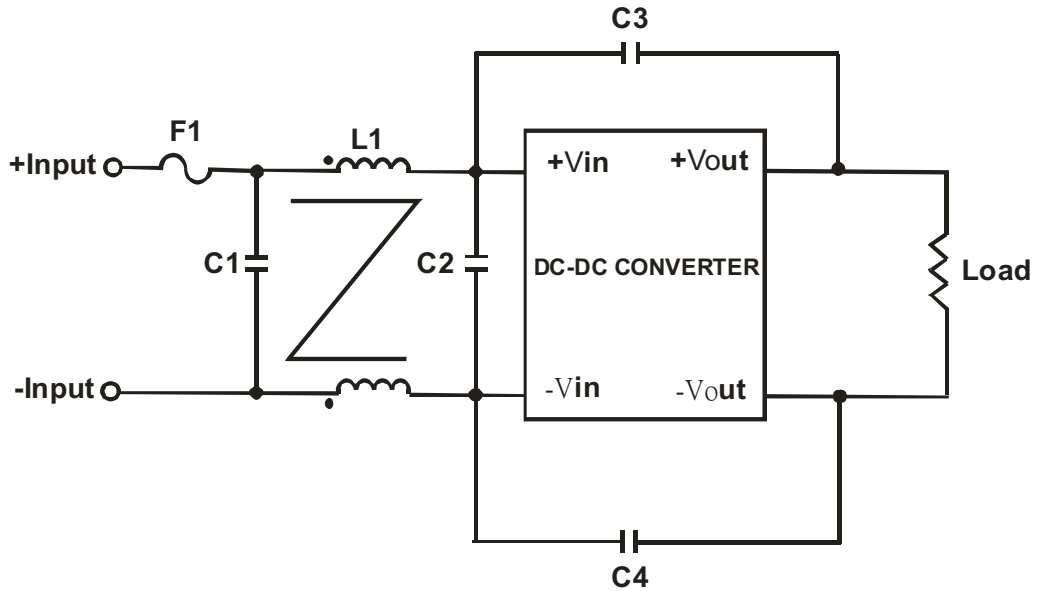
TEMPERATURE DERATING



● 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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DANUBE

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