

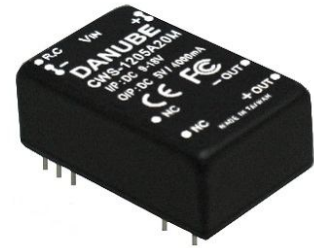
# CW-A20M SERIES

20W WIDE INPUT RANGE

# DANUBE

## FEATURES

- 20W DIL PACKAGE
- 9-18V,18-36V,36-75V WIDE INPUT RANGE
- 100% BURN IN
- HIGH EFFICIENCY
- CUSTOM SOLUTIONS AVAILABLE
- RoHS COMPLIANT
- 3 YEARS WARRANTY



## OUTPUT SPECIFICATIONS

Voltage Setpoint Accuracy	+/-2% max.
Temperature Coefficient	+/-0.05%/°C
Ripple & Noise(20MHz BW) <sup>1</sup>	150mVp-p max.
Line Regulation <sup>2</sup>	+/-0.5% max.
Load Regulation <sup>3</sup>	+/-0.5% max.

	Vout: 3.3V	+/-1% max.
Minimum Load	20% of Full Load	
Short Circuit Protection	Continuous	
Short Circuit Restart	Automatic	
Over Load Protection	120%~190%	
Transient Response <sup>5</sup>	500uS max.	

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40 °C to +100 °C (with derating)
Case Temperature	+110 °C max.
Storage Temperature	-55 °C to +105 °C
Humidity	95% max.
Cooling	Free-Air Convection

## INPUT SPECIFICATIONS

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

## GENERAL SPECIFICATIONS

Efficiency	85% min.
Isolation Voltage <sup>4</sup>	1500VDC min.
Isolation Resistance	10 <sup>9</sup> ohms min.
Isolation Capacitance	2200pF max.
Switching Frequency	400KHz Typ.
MTBF <sup>6</sup>	>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

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

<sup>1</sup> Measured with 1uF ceramic capacitor connect to the output pins.

<sup>2</sup> High Line to Low Line.

<sup>3</sup> Load Regulation is for output load current change from 20% to 100%.

<sup>4</sup> 1500VDC for 10 seconds.

<sup>5</sup> 25% Step Load Change.

<sup>6</sup> MIL-HDBK-217F @25 °C , Ground Benign.

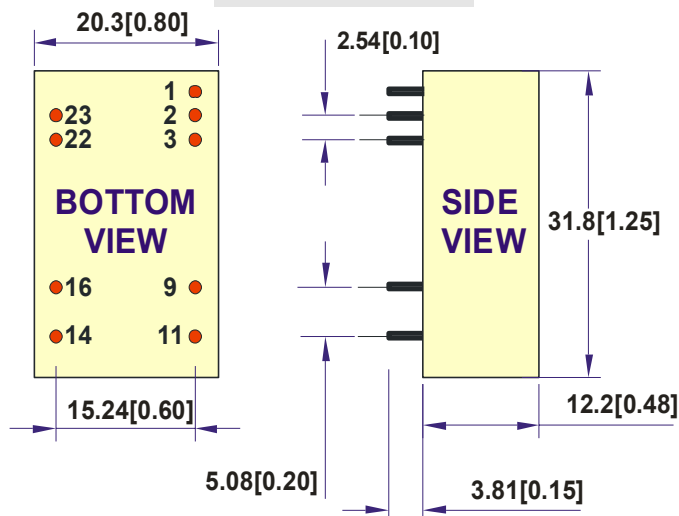
## ● SELECTION GUIDE(1) 2:1 20W OUTPUT

MODEL <sup>7</sup> NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT <sup>8</sup> CURRENT(mA)		EFF (%) <sup>9</sup>	PACKAGE	Capacitor Load max
				FULL LOAD	NO LOAD			
CWS-1205A20M	9-18	5	4000	1938	110	86	A	1000uF
CWS-1212A20M	9-18	12	1666	1937	30	86	A	220uF
CWS-1215A20M	9-18	15	1333	1915	30	87	A	220uF
CWS-2403.3A20M	18-36	3.3	4000	640	60	86	A	1000uF
CWS-2405A20M	18-36	5	4000	969	60	86	A	1000uF
CWS-2412A20M	18-36	12	1666	957	25	87	A	220uF
CWS-2415A20M	18-36	15	1333	958	25	87	A	220uF
CWS-4805A20M	36-75	5	4000	484	45	86	A	1000uF
CWS-4812A20M	36-75	12	1666	479	25	87	A	220uF
CWS-4815A20M	36-75	15	1333	479	25	87	A	220uF

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

## ● MECHANICAL DIMENSIONS

### PACKAGE "A"



**All dimensions are in mm[inches]**

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

**NOTE:**

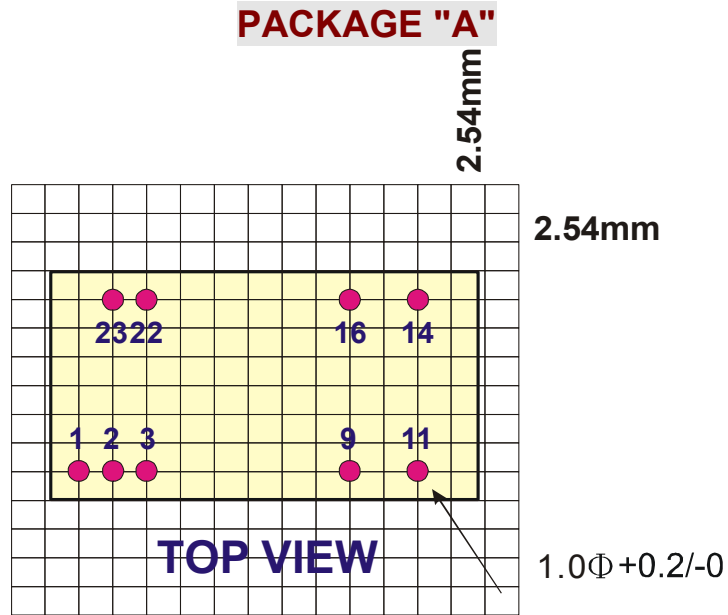
Pin Size is Tolerance 0.8Φ ±0.05mm

All Dimensions In mm(Inches)

Tolerance .X or .XX= ±0.80mm

<sup>7</sup> CW\*.\*\*\*\*A20M (Isolation For 1500 VDC)  
<sup>8</sup> NOMINAL INPUT VOLTAGE.  
<sup>9</sup> NOMINAL INPUT VOLTAGE, FULL LOAD.

- **RECOMMENDED FOOTPRINT DETAILS**

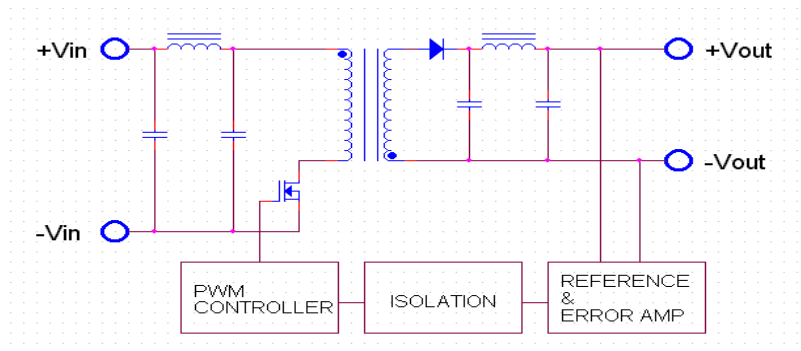


- **Table1 (Remote On/Off Control)**

<b>Remote On/Off Control</b>			
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

- **SIMPLIFIED SCHEMATIC**

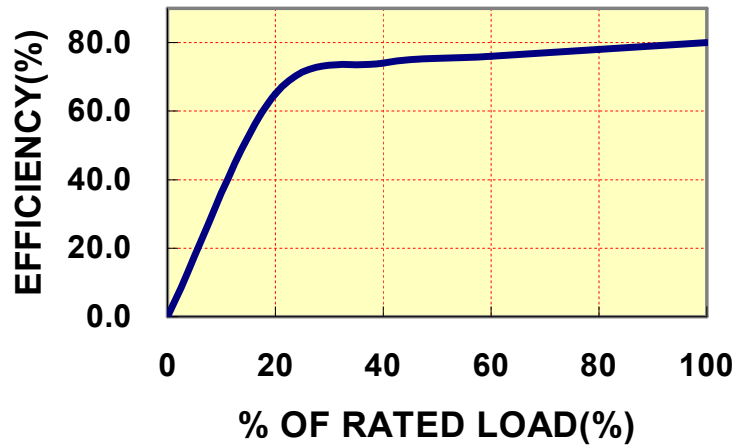
**SINGLE OUTPUT**



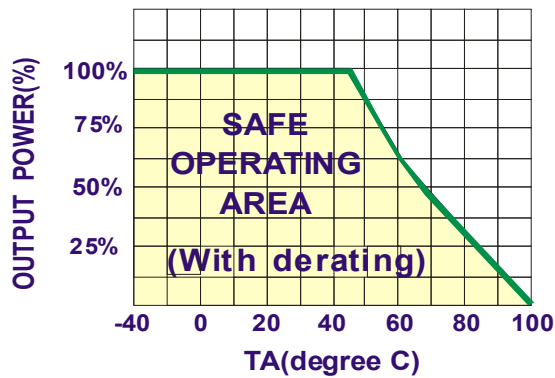
## ● TYPICAL PERFORMANCE CURVES

Specifications typical at  $T_a=25^{\circ}\text{C}$ , nominal input voltage, rated output current unless otherwise specified.

### OUTPUT LOAD VS EFFICIENCY

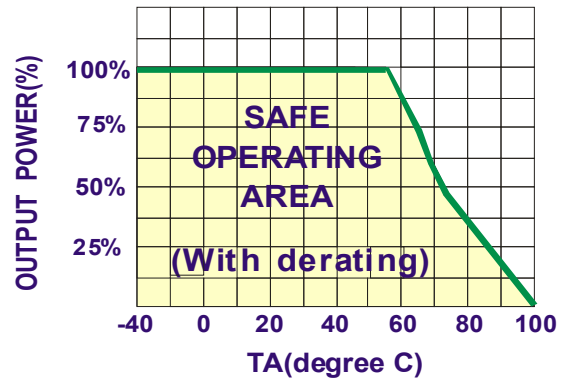


### TEMPERATURE DERATING



### TEMPERATURE DERATING

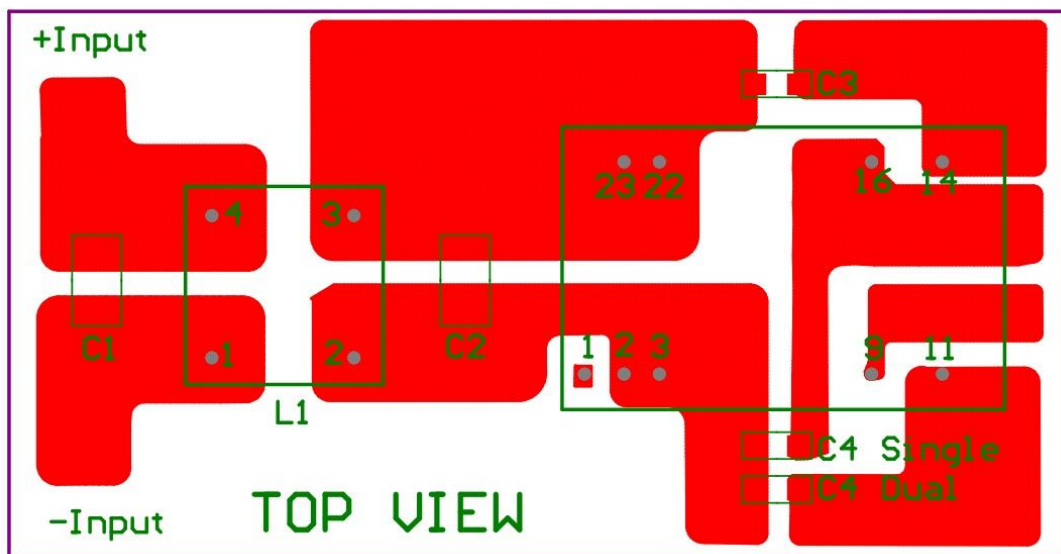
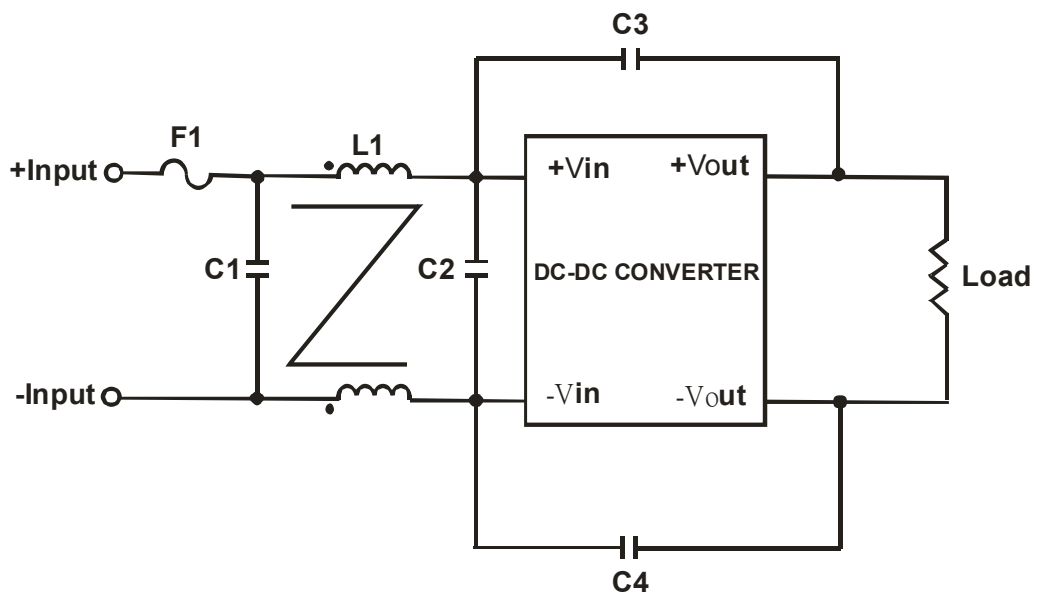
( With heat sink )



## ● 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-20W CW*-12**	3.3uF/50V 1812 MLCC	N/A	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke
CW-20W CW*-24**	4.7uF/50V 1812 MLCC	N/A	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke
CW-20W 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)
4000mA Slow-Blow Type	2000mA Slow-Blow Type	1000mA Slow-Blow Type

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

### CW-A20M SERIES APPLICATION NOTES:

#### EXTERNAL CAPACITANCE REQUIREMENTS:

No external capacitance is required for operation of the CW-A20M 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.

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### FOR MORE INFORMATION CALL:

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Home Page

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