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AM20CW-LPZ



1” x 1”

The AM20CW-LPZ is a 20W DC/DC converter that offers a regulated output which contributes to a more stable and reliable output performance. It features a wide 4:1 input voltage range of 9-75VDC, which will benefit your new system design.

This series offers great operating temperatures, from -40°C to 85°C. Furthermore, an isolation of 1500VDC, a high MTBF of 1,000,000h, continuous output short circuit protection (OSCP), over-current protection (OCP), over-voltage protection (OVP), and under voltage lock-out (UVLO) come standard with the series.

The AM20CW-LPZ is suitable for distributed power supply systems, industrial controls, power grid, instruments, and communications applications.

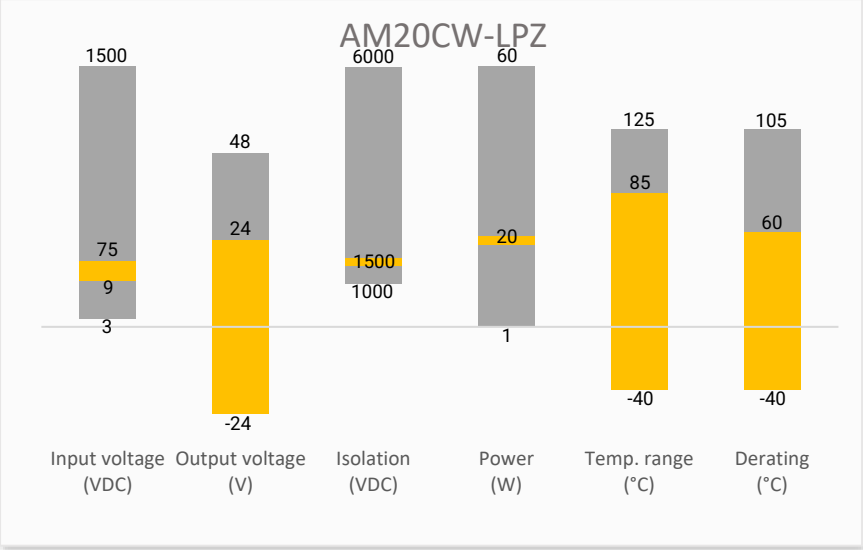
Features

- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 1500VDC
- Low ripple & noise, 100mV (p-p), typ.
- Regulated Output
- 1” x 1” package
- Output short circuit, over-current, over-voltage, input under voltage protection

RoHS

3yr Warranty

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Power Grid

Industrial

Telecom

Instrumentation

Models & Specifications

Single Output							
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current (mA TYP)		Output Current Max (mA) Full Load	Maximum Capacitive Load (µF)	Efficiency Full Load Typ. (%)
			No Load	Full Load			
AM20CW-2403SLPZ	24 (9-36)	3.3	30	782	5000	10000	88
AM20CW-2405SLPZ	24 (9-36)	5	35	926	4000	10000	90
AM20CW-2406SLPZ	24 (9-36)	6	50	936	3333	10000	89
AM20CW-2412SLPZ	24 (9-36)	12	6	926	1667	1600	90
AM20CW-2415SLPZ	24 (9-36)	15	6	916	1333	1000	91
AM20CW-2424SLPZ	24 (9-36)	24	10	916	833	500	91
AM20CW-4803SLPZ	48 (18-75)	3.3	15	391	5000	10000	88
AM20CW-4805SLPZ	48 (18-75)	5	20	463	4000	10000	90
AM20CW-4812SLPZ	48 (18-75)	12	3	458	1667	1600	91
AM20CW-4815SLPZ	48 (18-75)	15	3	458	133.3	1000	91
AM20CW-4824SLPZ	48 (18-75)	24	4	458	833	500	91

Dual Output							
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Max (mA)		Output Current Max (mA) Full Load	Maximum Capacitive Load (µF)	Efficiency (%) Full Load Typ.
			No Load	Full Load			
AM20CW-2405DLPZ	24 (9-36)	±5	35	920	±2000	2000	87
AM20CW-2412DLPZ	24 (9-36)	±12	35	920	±833	800	90
AM20CW-2415DLPZ	24 (9-36)	±15	35	920	±667	600	90
AM20CW-2424DLPZ	24 (9-36)	±24	35	920	±417	300	89
AM20CW-4805DLPZ	48 (18-75)	±5	20	460	±2000	2000	86
AM20CW-4812DLPZ	48 (18-75)	±12	20	460	±833	800	90
AM20CW-4815DLPZ	48 (18-75)	±15	20	460	±667	600	90
AM20CW-4824DLPZ	48 (18-75)	±24	20	460	±417	300	90

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage Types			4:1	
Filter	PI filter			
Absolute maximum rating	24Vin models, 1 sec.		-0.7~50	VDC
	48Vin models, 1 sec.		-0.7~100	VDC
Input reflected current		30		mA
Input Under Voltage turn off	24Vin models	5.5~6.5		VDC
	48Vin models	12~15.5		VDC
Startup Voltage	24Vin models		9	VDC
	48Vin models		18	VDC
Startup time		10		ms
Remote On/Off control	ON - open or pulled high (3.5 - 12 VDC) OFF - pulled low to GND (0 - 1.2 VDC), idle current 7mA max.			

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested isolation voltage	Input / output 60 sec, ≤ 1mA	1500		VDC
Resistance	500VDC	≥1000		MΩ
Capacitance	Input / output, 100KHz/0.1V	2000		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage Tolerance	5% to 100% load	±1	±3	%
Line regulation	Full load, LL to HL	±0.2	±0.5	%
	Full load, LL to HL, dual 2nd output	±0.5	±1	%
Load regulation	5% to 100% load	±0.5	±1	%
Cross Regulation	50% at 1st output, 10-100% at 2nd output		±5	%
Voltage adjustment			±10	%
Transient recovery time	25% load step change	300	500	μs
Transient recovery deviation	3.3/5/6VDC single output, 25% load step change	±5	±8	%
	Others, 25% load step change	±3	±5	%
Ripple & Noise	20MHz bandwidth, single output	50	100	mV pk-pk
	20MHz bandwidth, dual output	100	200	mV pk-pk

General Specifications

Parameters	Conditions	Minimum	Typical	Maximum	Units
Switching frequency	100% load		300		KHz
Over Current protection	Input voltage range	110	150	200	%Io
Over voltage protection	Input voltage range	110		160	%Vo
Short circuit protection	Continuous, Auto recovery				
Operating temperature	With derating	-40		85	℃
Storage temperature		-55		125	℃
Temperature coefficient	100% Load			± 0.03	%/℃
Maximum soldering temperature	1.5mm from case for 10 sec.			300	℃
Cooling	Free air convection				
Humidity	Non-condensing	5		95	% RH
Case material	Aluminum alloy				
Weight			21		g
Dimensions (L x W x H)	1.00 x 1.00 x 0.47 inches (25.40 × 25.40 × 12.00 mm)				
MTBF	> 1 000 000 hrs (MIL-HDBK -217F, t=+25°C)				

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

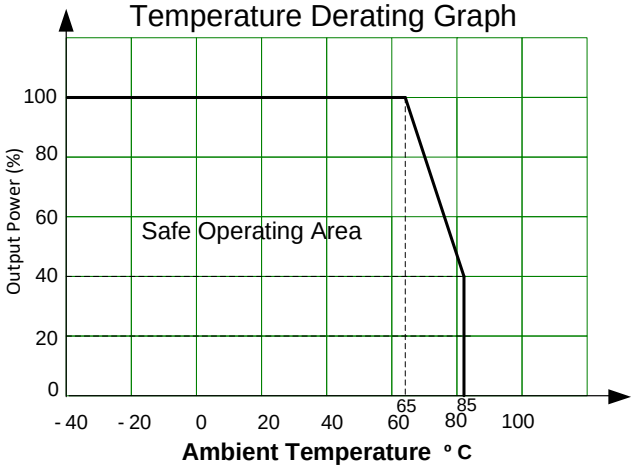
Safety Specifications

Parameters		
Standards	Designed to meet IEC/UL/EN62368-1	
	EMI - Conducted and radiated emission	CISPR32/EN55032, Class B
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2

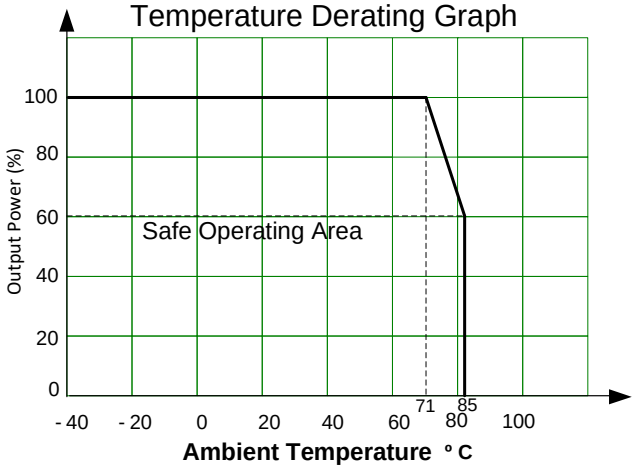
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4
	Surge Immunity	IEC/EN 61000-4-5
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6
	Vibration	IEC/EN61373, category 1/grade B

Derating

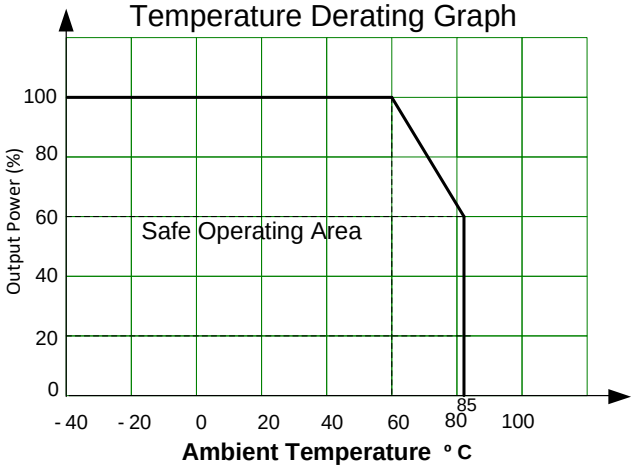
3.3/5/6Vout models



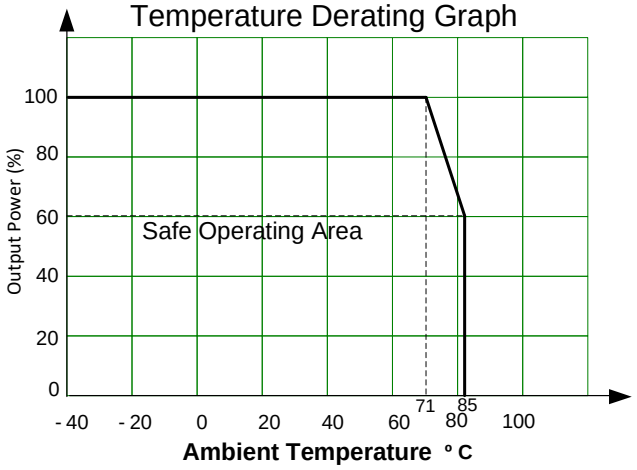
12/15/24Vout models



±5Vout models

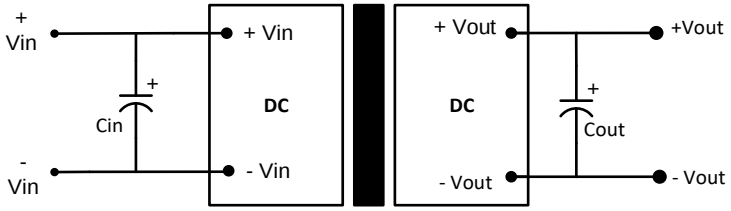


±12/±15/±24Vout models

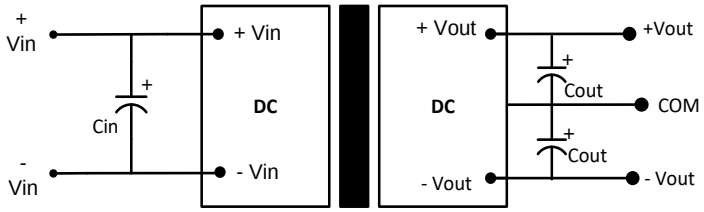


Typical Application Circuit

Single

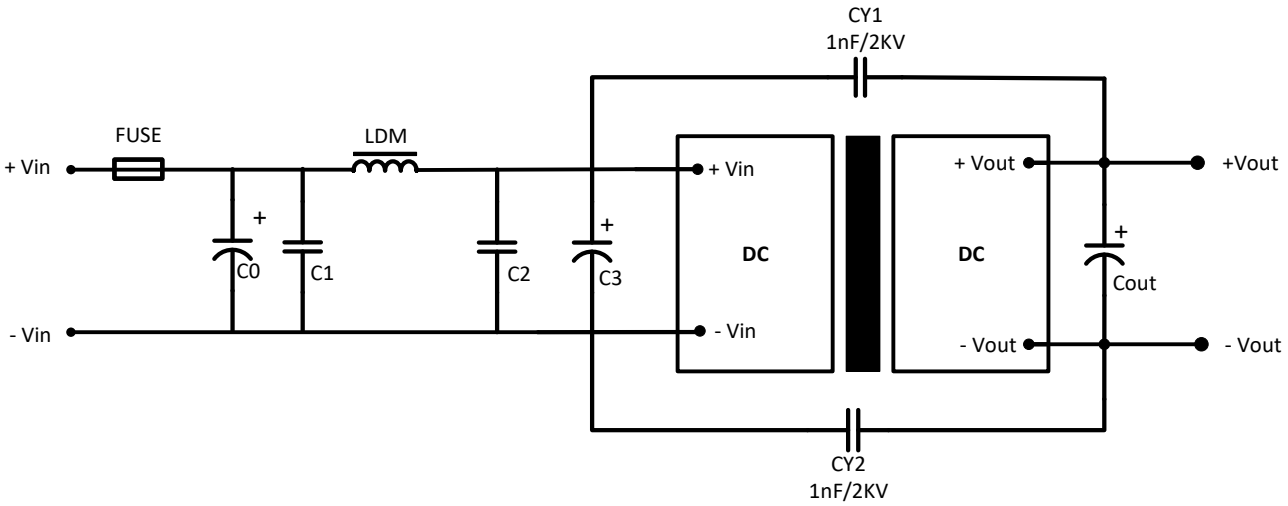


Dual



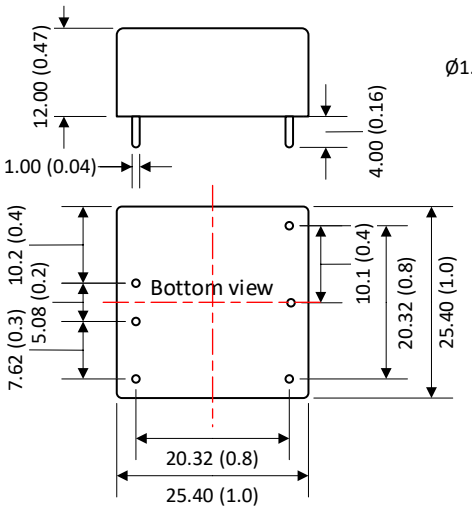
Vin	Cin	Cout
24VDC	100µF/50V	10µF
48VDC	10-47µF/100V	10µF

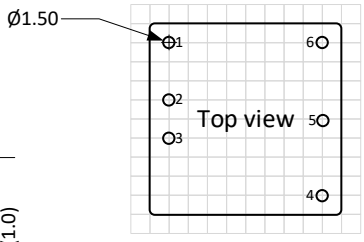
Recommended EMC Circuit



Component	24Vin	48Vin
C0, C3	330µF, 50V	330µF, 100V
C1, C2	4.7µF, 50V	4.7µF, 100V
Cout	10µF	10µF
LDM	2.2µH, 4A	2.2µH, 2A

Dimensions





Grid size: 2.54 x 2.54 mm

Note:
Unit: mm (inch)
Pin tolerance: ±0.05 (0.002)
General tolerance: ±0.5 (0.02)

Pin Out Specifications		
Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-V Input	-V Input
3	+V Input	+V Input
4	+V Output	+V Output
5	Trim	Com
6	-V Output	-V Output

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