



200 Watt, 12:1 Wide Input DC/DC Converters Series DV200H12-72



Features

- 200 Watt Isolated Output
- 12:1 Wide Input Range
- Fixed Switching Frequency
- Regulated Outputs
- Isolation I/O 3000VAC
- Meets IEC62368-1
- Approval UL62368-1 2nd (Reinforce Insulation)
- Meet Shock & Vibration EN50155 (EN61373)
- Efficiency to 90%
- Over Current-, Temperature-, Voltage Protection
- Under Voltage Lockout
- Remote ON/OFF
- Industry Standard Half-Brick Package
- 5000m Operating Altitude
- Meets EN50155 with External Circuit
- Meet Fire & Smoke EN45545-2

MODEL NUMBER	INPUT VOLTAGE [VDC]	OUTPUT VOLTAGE [VDC]	OUTPUT CURRENT [A] MAX.	INPUT CURRENT NO LOAD [mA]	INPUT CURRENT FULL LOAD [A]	EFF. [%] (Note 1)	EFF. [%] (Note 2)	CAPACITOR LOAD [μ F] MAX.
DV200H12-72S12	14 – 160	12	16,7	50	3,1	90	90	16700
DV200H12-72S15		15	13,5	50	3,1	90	89	13500
DV200H12-72S24		24	8,4	50	3,2	88	88	8000
DV200H12-72S48		48	4,2	50	3,2	89	89	2200

NOTE:

1. Nominal Input Voltage 72 VDC.
2. Measured at Input Voltage 110 VDC.
3. An External Input Capacitor 100 μ F for All Models are Recommended to Reduce Input Ripple Voltage.
4. An External Electrolytic Capacitor at least 240 μ F connected between BUS and -Vin is necessary.
5. For Clear Mount insert, please add -C, for example DV200H12-72S12-C.
6. For Negative Logic, please add "N", for example DV200H12-72S12N.

INPUT SPECIFICATIONS:

Input Voltage Range.....	72V	14-160Vdc
Input Surge Voltage.....	100ms max.	180Vdc max.
Under Voltage Lockout.....	Turn-ON Voltage Threshold	13Vdc typ.
	Turn-OFF Voltage Threshold	11Vdc typ.
	Lockout Hysteresis Voltage	2.0Vdc typ.
Maximum Input Current.....	Vin=16V, Full Load	15A typ.
Input Filter.....		PI Filter
Inrush Current.....	As per ETS300 132-2.	0,1 A2s max.
Input Reflected Ripple Current.....	P-P thru 12uH inductor, 5Hz to 20MHz.	50mA typ.
On/Off Control, Positive Remote On/Off logic, Refer to -Vin pin.		
Logic High (Module On).....	Von/off at Ion/off=0.0uA, Pin open=On	3.5V to 160V
Logic Low (Module Off).....	Von/off at Ion/off=1.0mA	0 to 1,2V
On/Off Control, Negative Remote On/Off logic, Refer to -Vin pin		
Logic High (Module On).....	Von/off at Ion/off=1.0mA	0 to 1,2V
Logic Low (Module Off).....	Von/off at Ion/off=0.0uA, Pin open=Off	3.5V to 160V
On/Off Current (for both remote on/off logic).....	Ion/off at Von/off=0V	1mA max.
Off Converter Input Current.....	Shutdown input idle current	20mA max.
Leakage Current (for both remote on/off logic).....	Logic High, Von/off=15V	30uF max.

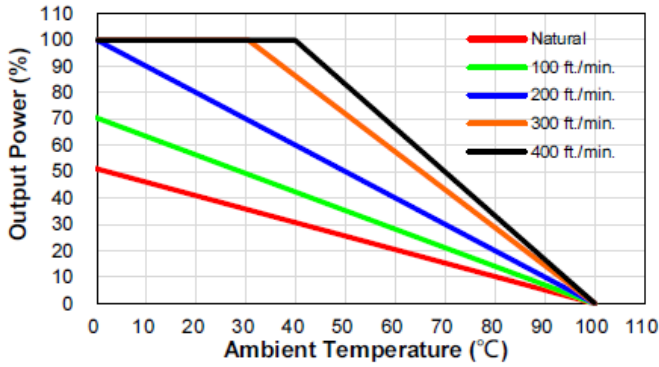
OUTPUT SPECIFICATION:

Output Current Min.....		0 mA
Voltage Accuracy.....	Vin=72V, Full Load	±1,0% max.
Line Regulation.....	Vin=High Line to Low Line, Full Load	±0,2% max.
Load Regulation.....	Full Load to No Load	±0,2% max.
Temperature Coefficient.....		±0,02%/°C max.
Ripple and Noise, 5Hz to 20 MHz BW.....	12V	200mV pk-pk max.
Full load, 10uF tantalum and 1.0uF ceramic capacitors	15V	200mV pk-pk max.
(for Vo=48V: Full Load 10uF aluminum and 1uF ceramic capacitors).	24V	240mV pk-pk max.
	48V	240mV pk-pk max.
Output Current Range.....		see Typical Derating Curve VS Input Voltage
Over Current Protection.....	<90% Vo	110%-140%
Over Voltage Protection.....	Limited Voltage, % of Nominal Vo	117%-140%
Short Circuit Protection.....	Hiccup Mode	Continuous, Auto Recovery
Output Voltage Trim Range.....	Po≤max power, Io ≤ Io_max	-20% to +15%
Output Voltage Remote Sense Range.....	Po≤max rated power, Io ≤ Io_max % of nominal Vo	+15% max.
Output Voltage Current Transient: 75% to 100% of Io_max step load change di/dt=0.1A/us (within 1% Vout nominal)		
Error Band.....		±5% max.
Recovery Time.....		<250µ sec. max.
Turn-On Delay Time, From On/Off Control.....	Von/off to 10%Vo_set, Remote on	100ms typ.
Turn-On Delay Time, From Input.....	Vin_min to 10%Vo_set, Power up	100ms typ.
Output Voltage Rise Time.....	10%Vo_set to 90%Vo_set	100ms typ.

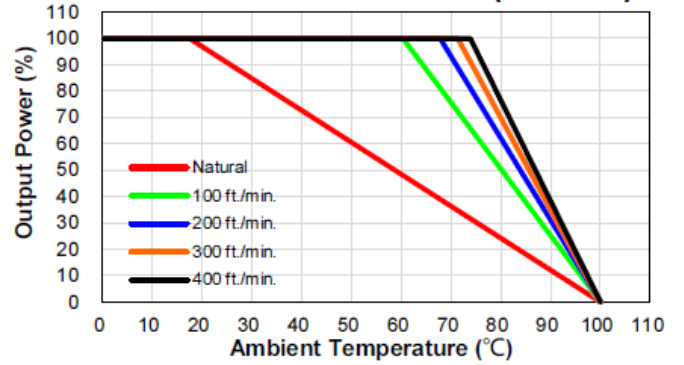
GENERAL SPECIFICATIONS:

Efficiency.....		See Table
Isolation Voltage (1 minute;).....	Input/Output	3000Vac / 4200Vdc max.
	Input/Case (Base Plate)	3000Vac / 4200Vdc max.
	Output/Case (Base Plate)	500Vac / 700Vdc max.
Isolation Resistance.....	Input/Output	100M Ohm min.
Isolation Capacitance.....	Input/Output	500pF typ.
	Input/Case (Base Plate)	None
	Output/Case (Base Plate)	2000pF typ.
Switching Frequency.....		480 KHz typ.
Operating Case Temperature.....	At the Center Part of Base Plate	-40°C to +100°C
Storage Temperature.....		-55°C to +125°C
Over Temperature Shutdown.....	Non-Latching	105°C typ.
Over Temperature Recovery.....	Non-Latching	95°C typ.
Humidity.....		95% RH max. Non condensing
MTBF.....	Io=100% of Io_max; MIL-HDBK - 217F_Notice 1, GB, 25°C	475 - 629 Khrs typ.
Altitude.....		3000m Operating Altitude, 12000m Transport Altitude
Shock/Vibration.....		Meet MIL-STD-810F/EN61373 (EN50155)
Thermal Shock.....		MIL-STD-810F
Fire & Smoke.....		Meet EN45545-2
EMI.....		Meets EN55032 & EN50155 Compliant (with external filter) Class A
Safety.....		UL62368-1 2nd (Reinforce Insulation) Approval
Dimensions.....		2.28x2.40x0.50 inches (57.9x61,00x12.7 mm)
Case Material.....		Plastic, UL 94V-0
Base plate Material.....		Aluminum
Weight.....		105g typ.

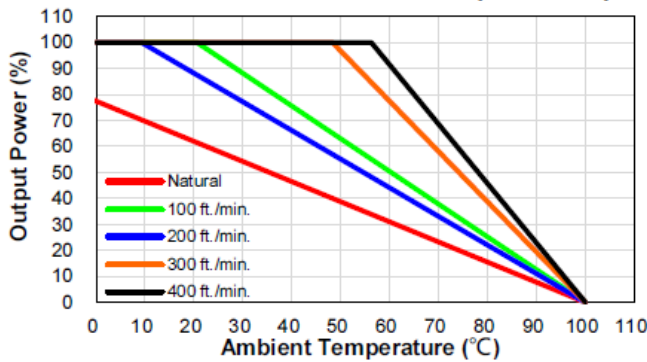
Derating Curve without Heatsink (Vin=72V)



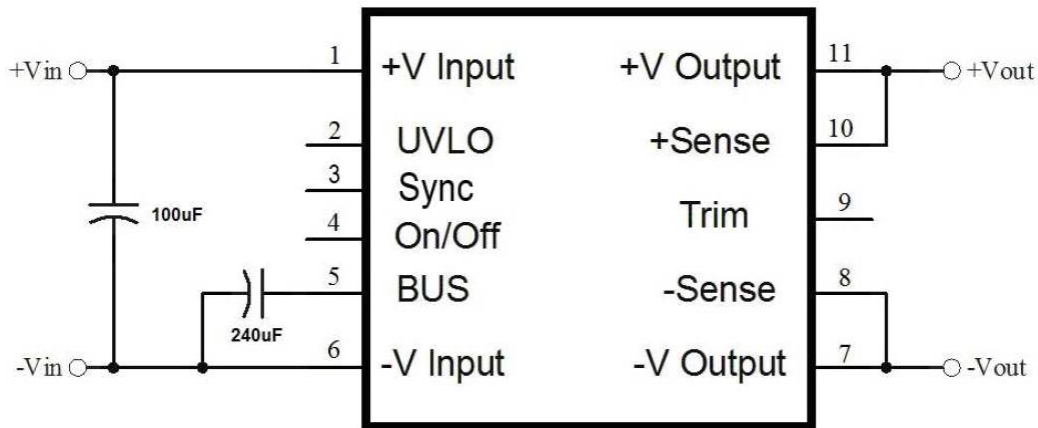
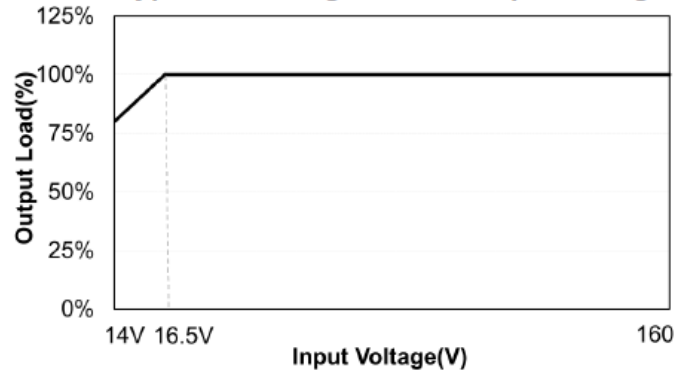
Derating Curve with Heatsink KH610254 (Vin=72V)



Derating Curve with Heatsink KH610127 (Vin=72V)



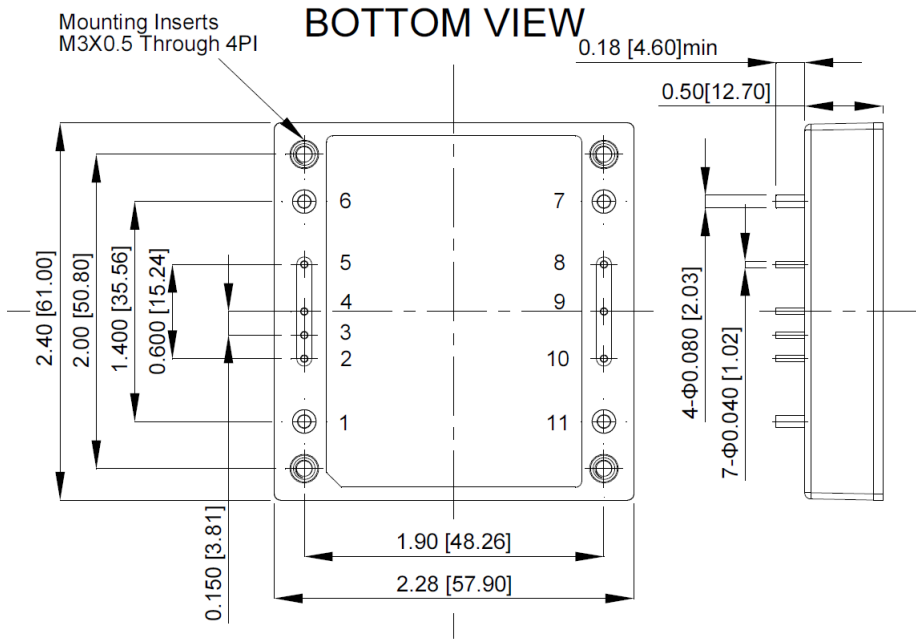
Typical Derating Curve VS Input Voltage



Simplified Application Circuit

All Dimensions in Inches (mm)

Tolerance Inches x.xx = ±0.02 x.xxx = ±0.010
 Millimeters x.x = ±0.5 x.xx = ±0.25



PIN CONNECTION	
Pin	Function
1	+V Input
2	UVLO
3	Sync
4	On/Off
5	BUS
6	-V Input
7	-V Output
8	-Sense
9	Trim
10	+Sense
11	+V Output

CASE H: HEAT SINK

Vertical Fins
Model No. KH580210

Vertical Fins
Model No. KH610127

Vertical Fins
Model No. KH610254

HEAT SINK SET (NOT MOUNTED incl. Heat Sink, Thermal Pad, Screw)

Order No. 17.079.811
Model No. Heatsink-SET/KH580210

Order No. 17.079.812
Model No. Heatsink-SET/KH610127

Order No. 17.079.813
Model No. Heatsink-ET/KH610254

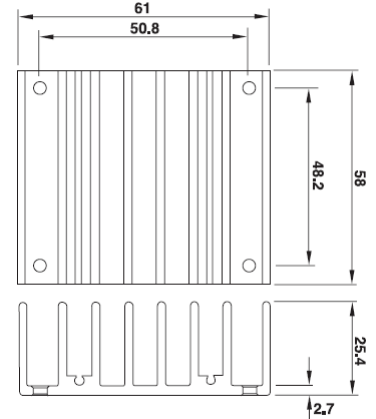
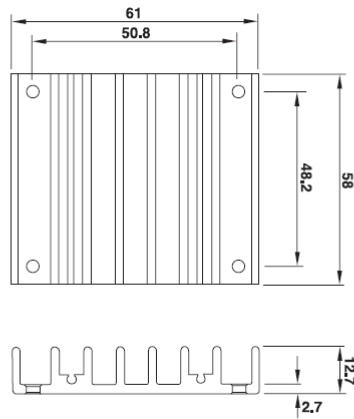
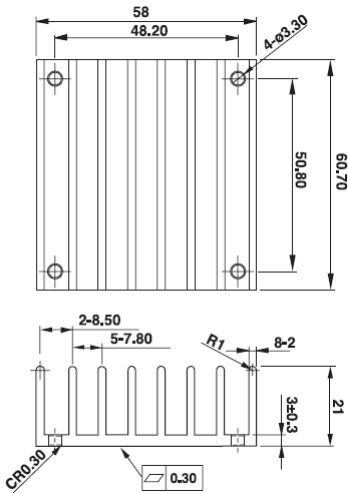
HEAT SINK SET (MOUNTED incl. Heat Sink, Thermal Pad, Screw)

Order No. 17.079.201
Model No. Heatsink-SET/KH580210

Order No. 17.079.202
Model No. Heatsink-SET/KH610127

Order No. 17.079.203
Model No. Heatsink-ET/KH610254

all dimensions in mm

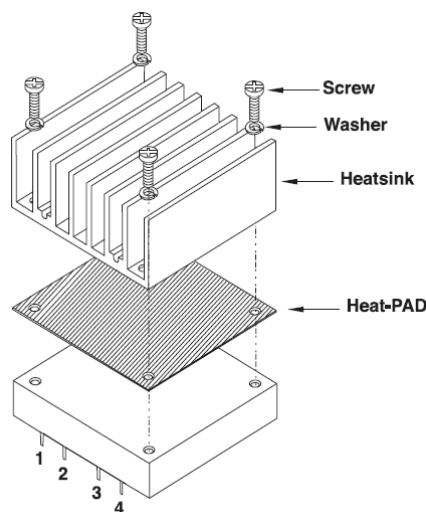


Rca: 3,9°C/W (typ.), At natural convection
1,74°C/W (typ.), At 100LFM
1,33°C/W (typ.), At 200LFM
1,12°C/W (typ.), At 300LFM
0,97°C/W (typ.), At 400LFM

Rca: 4,7°C/W (typ.), At natural convection
2,89°C/W (typ.), At 100LFM
2,30°C/W (typ.), At 200LFM
1,88°C/W (typ.), At 300LFM
1,59°C/W (typ.), At 400LFM

Rca: 3°C/W (typ.), At natural convection
1,44°C/W (typ.), At 100LFM
1,17°C/W (typ.), At 200LFM
1,04°C/W (typ.), At 300LFM
0,95°C/W (typ.), At 400LFM

Heat Sink Assembly example



Screw M3x8

Heatsink

Thermal Pad 56.9x60x0.25mm