



100 Watt, 12 – 160VDC Wide Input DC/DC Converters Series DV100Q14-72



Features

- 100 Watt Isolated Output
- Regulated Outputs
- 14 : 1 Wide Input Range
- Isolation I/O 3000VAC
- Fixed Switching Frequency
- Low No Load Power Consumption
- Meets IEC62368-1
- UL62368-1 (Reinforce Insulation) Approval
- Meets EN55032/EN55035/EN50155 with External Circuits
- Efficiency to 89%
- Operating Case Temperature -40 to +105°C
- Protection (OTP/OCP/OVP/UVLO)
- Continuous Short Circuit Protection
- Remote ON/OFF
- Quarter Brick Size Meet Industrial Standard
- Meets Fire & Smoke EN45545-2
- Meets Shock & Vibration EN50155 (EN61373)

MODEL NUMBER	INPUT VOLTAGE [VDC]	OUTPUT VOLTAGE [VDC]	OUTPUT CURRENT [A] MAX.	INPUT CURRENT NO LOAD [mA]	INPUT CURRENT FULL LOAD [A]	EFF. [%] @Vin 72V / 110V (Note 1 & 2)	CAP. LOAD Max. [µF]	CASE
DV100Q14-72S05	12 – 160	5	20	20	1,60	87 / 87	20000	Q
DV100Q14-72S12		12	8,3	20	1,57	88 / 88	8300	
DV100Q14-72S15		15	6,7	20	1,59	88 / 88	6700	
DV100Q14-72S24		24	4,2	15	1,59	87 / 87	4200	
DV100Q14-72S28		28	3,6	15	1,59	88 / 88	3600	
DV100Q14-72S54		54	1,85	15	1,56	89 / 89	1850	

NOTE:

1. Nominal Input Voltage 72 VDC.
2. Nominal Input Voltage 110 VDC.
3. An external input capacitor 220µF for all models are Recommended to Reduce Input Ripple Voltage.
4. Suffix "N" to Model Number with Negative Remote On/Off Logic For Example: DV100Q14-72S15N
5. Suffix "-C" to Model Number with Clear Mounting Insert (3.2mm DIA.) For Example: DV100Q14-72S15-C

INPUT SPECIFICATIONS:

Input Voltage Range.....	72V	12-160Vdc
Input Surge Voltage.....	100ms max.	185Vdc max.
Under Voltage Lockout	Turn-ON Voltage Threshold, 80% Load	11Vdc typ.
	Turn-OFF Voltage Threshold, 80% Load	10Vdc typ.
	Lockout Hysteresis Voltage, 80% Load	1,0Vdc typ.
Maximum Input Current	Vin=16V,Full Load /Vin=12V,80% Load	8,0A max.
Input Filter		PI Filter
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	Open Circuit or 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	Open Circuit or 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	10mA 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 (Note 1), 5Hz to 20 MHz BW.....	5V	80mV RMS / 150mV pk-pk max.
	12V	80mV RMS / 150mV pk-pk max.
	15V	80mV RMS / 150mV pk-pk max.
	24V	120mV RMS / 240mV pk-pk max.
	28V	120mV RMS / 240mV pk-pk max.
	48V	220mV RMS / 480mV pk-pk max.
Over Current Protection.....	Hiccup Mode. Auto recovery	110%-180%
Over Voltage Protection	Limited Voltage, % of Nominal Vo	117%-140%
Short Circuit Protection.....		Continuous, Auto Recovery
Output Voltage Trim Range (Po≤max power, Io ≤ Io_max).....	Others	-20% to +15%
	54Vo	-20% to +10%
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	50ms typ.
Turn-On Delay Time, From Input	Vin_min to 10%Vo_set, Power up	50ms typ.
Output Voltage Rise Time.....	10%Vo_set to 90%Vo_set	50ms typ.

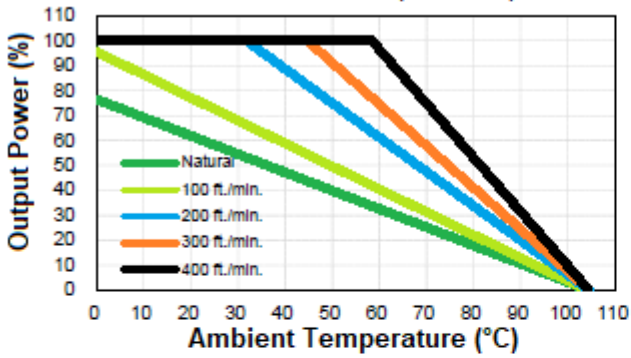
GENERAL SPECIFICATIONS:

Efficiency.....		See Table
Isolation Voltage (1 minute;)	Input/Output	3000Vac / 4200Vdc max.
	Input/Case (Base Plate)	2100Vac / 3000Vdc max.
	Output/Case (Base Plate)	1500Vac / 2100Vdc max.
Isolation Resistance	Input/Output	100M Ohm min.
Isolation Capacitance	Input/Output	1000pF typ.
Switching Frequency		200 KHz typ.
Operating Case Temperature		-40°C to +105°C
Output Current Range	Vin= 12 to 16V	See Power Derating Curve
Storage Temperature		-55°C to +125°C
Over Temperature Shutdown		110°C typ.
Over Temperature Recovery		100°C typ.
Humidity		95% RH max. Non condensing
MTBF (Io=100% of Io_max; MIL-HDBK - 217F_Notice 1, GB, 25°C).....	5V	TBD Khrs typ.
	12V	TBD Khrs typ.
	15V	TBD Khrs typ.
	24V	TBD Khrs typ.
	28V	TBD Khrs typ.
	54V	TBD 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		2.28x1.45x0.50 inches (57.9x36.8x12.7 mm)
Case Material		Plastic, UL 94V-0
Base plate Material.....		Aluminum Base Plate
Weight.....		66g

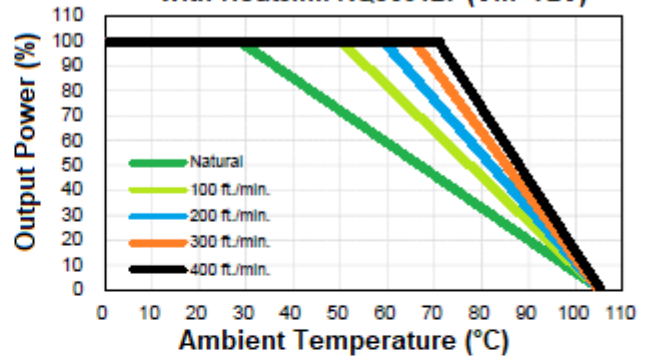
NOTE: 1. Output ripple and noise measured with 10uF tantalum and 1uF ceramic capacitors (for Vo=54V: Full Load 10uF aluminum and 1uF ceramic capacitors).
All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted.

Technische Änderungen vorbehalten / Technical change reserved without notice

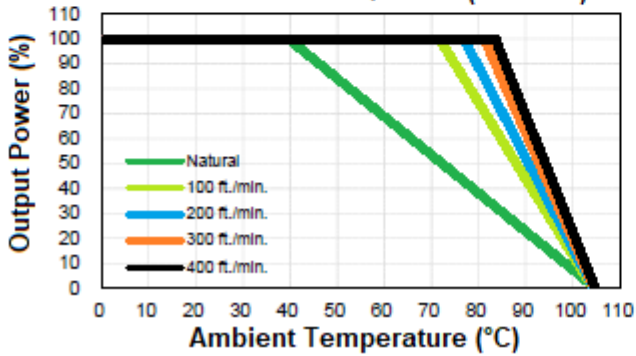
DV100Q14-72S05 & 12 Derating Curve without Heatsink (Vin=72V)



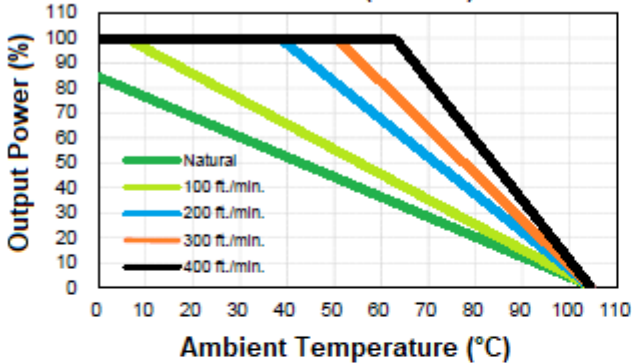
DV100Q14-72-S05 & 12 Derating Curve with Heatsink KQ368127 (Vin=72V)



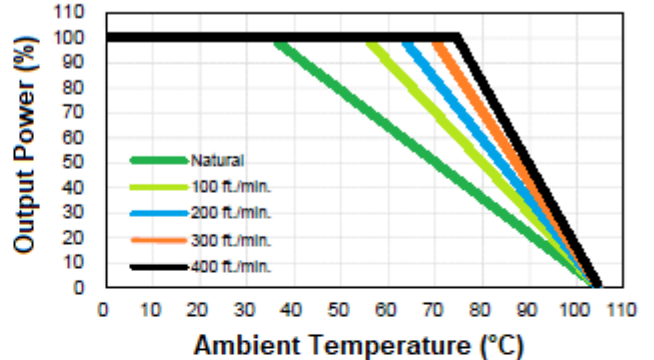
DV100Q14-72-S05 & 12 Derating Curve with Heatsink KQ580210 (Vin=72V)



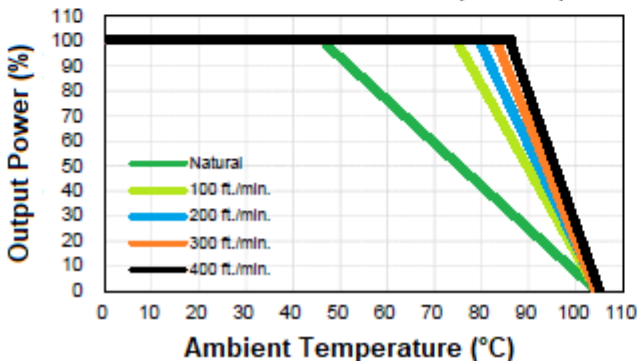
DV100Q14-72S15, 24, 28, 54 Derating Curve without Heatsink (Vin=72V)



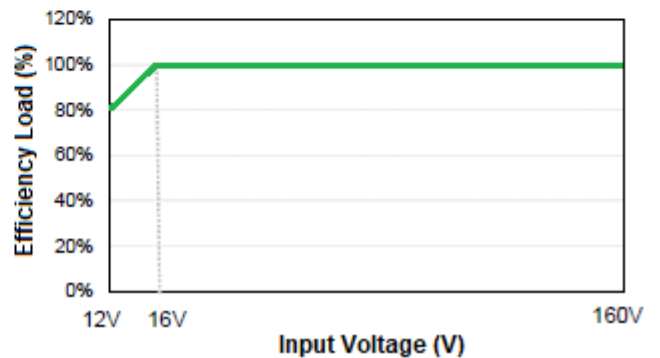
DV100Q14-72S15, 24, 28, 54 Derating Curve with Heatsink KQ368127 (Vin=72V)



DV100Q14-72S15, 24, 28, 54 Derating Curve with Heatsink KQ580210 (Vin=72V)

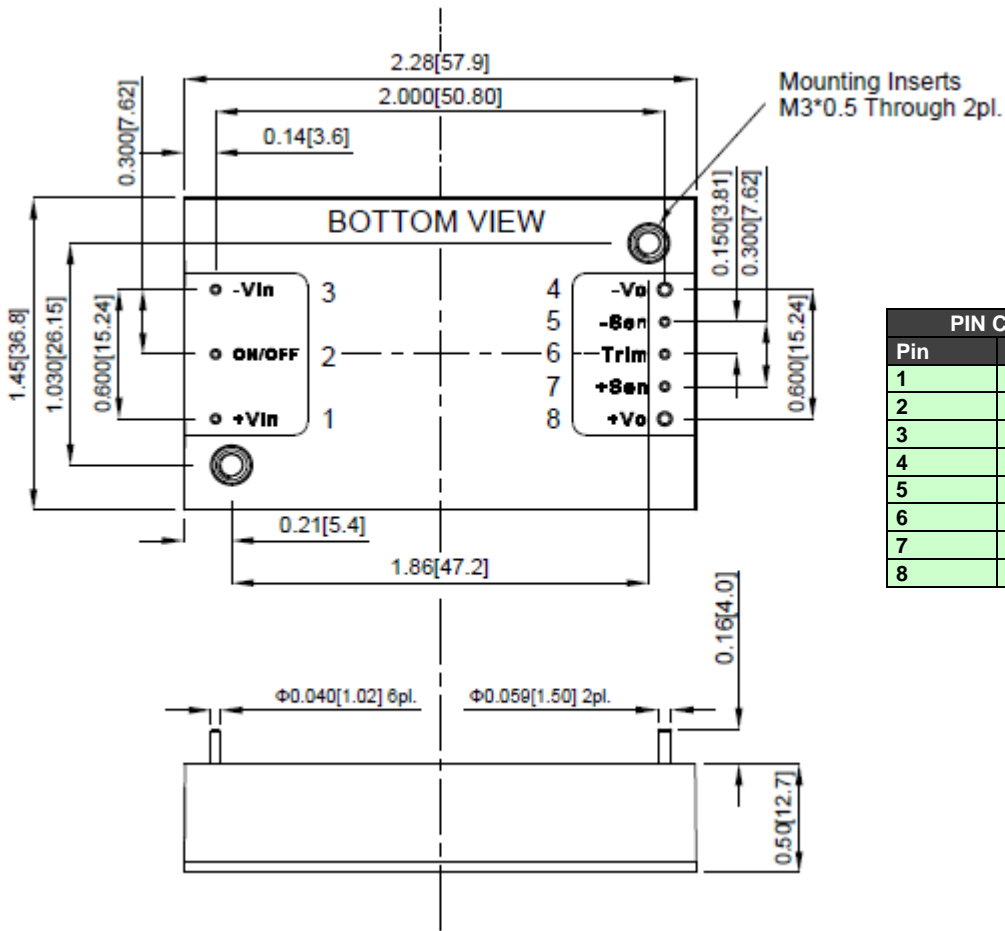


Typical Derating Curve VS Input Voltage



All Dimensions in Inches (mm)

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



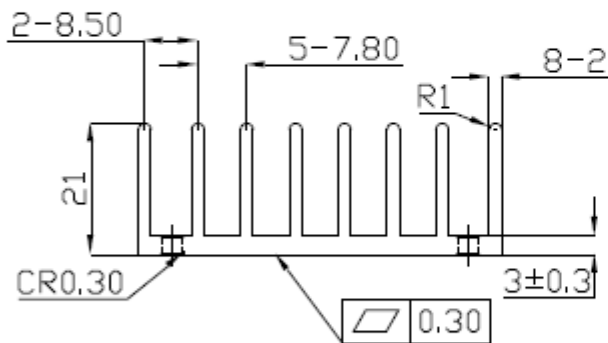
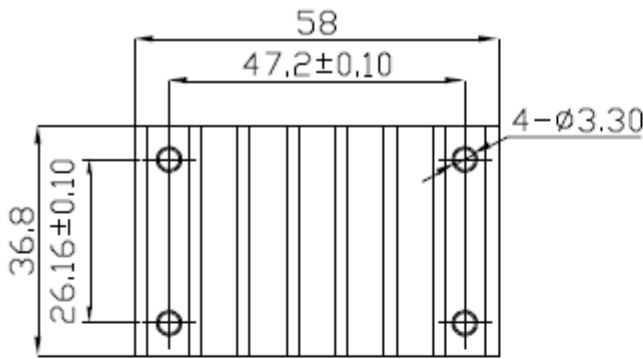
PIN CONNECTION	
Pin	Function
1	+V Input
2	On/Off
3	-V Input
4	-V Output
5	-Sense
6	Trim
7	+Sense
8	+V Output

Heat Sinks Case Q

CASE Q: HEAT SINK

Model No. KQ580210
all dimensions in mm

Model No. KQ368127

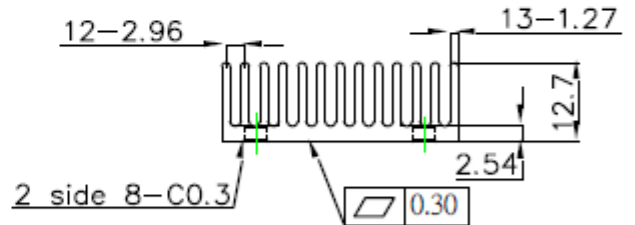
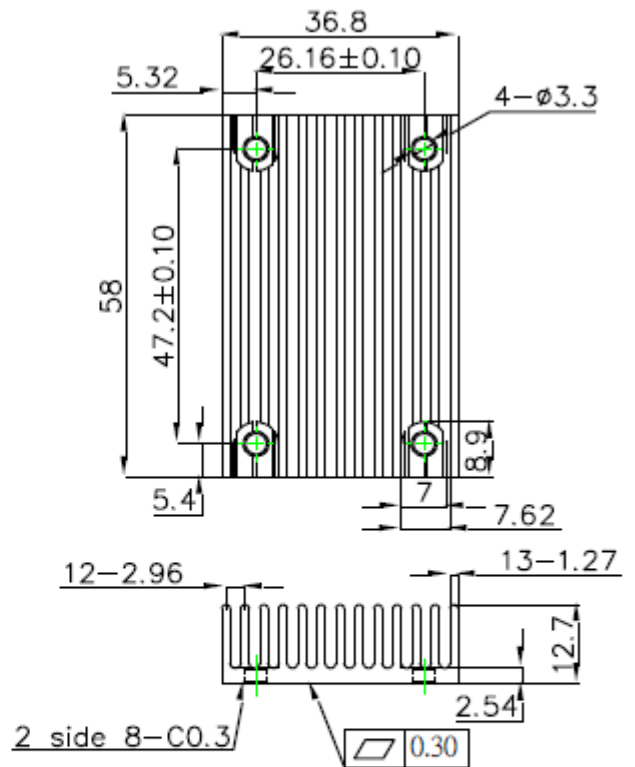
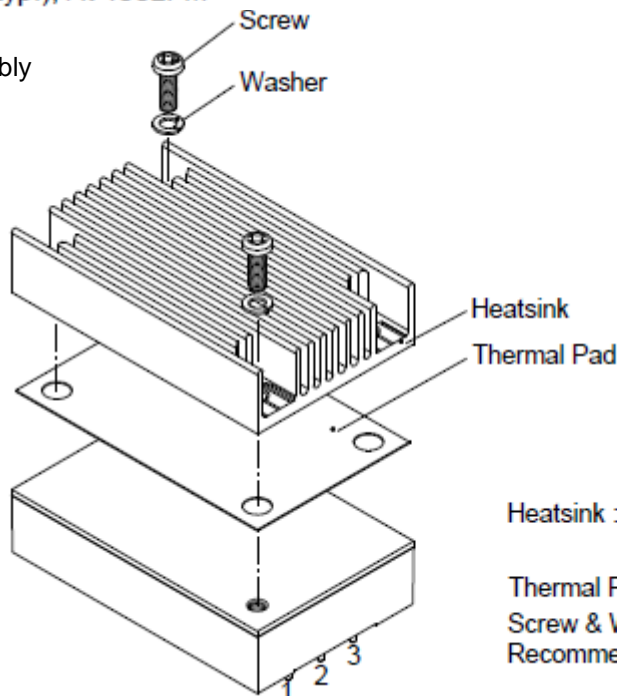


All Dimensions in mm

KQ580210 Heat Sink

Rca: 4.78°C/W (typ.), At natural convection
2.44°C/W (typ.), At 100LFM
2.06°C/W (typ.), At 200LFM
1.76°C/W (typ.), At 300LFM
1.58°C/W (typ.), At 400LFM

Heat Sink Assembly
example



KQ368127 Heat Sink

Rca: 5.61°C/W (typ.), At natural convection
4.01°C/W (typ.), At 100LFM
3.39°C/W (typ.), At 200LFM
2.86°C/W (typ.), At 300LFM
2.49°C/W (typ.), At 400LFM

Heatsink : KQ580210
KQ368127

Thermal Pad SZ35.8x56.9x0.25mm
Screw & Washer
Recommended torque 3 Kgf-cm