



**60 Watt, 43 – 160VDC Wide Input
DC/DC Converters
Series DV604Q-Railway**



Features

- 60 Watt Isolated Output
- Regulated Outputs
- 4:1 Wide Input Range
- Low No Load Power Consumption
- UL60950-1 2nd (Basic Insulation)
- EMC: EN50155 with External Circuits
- 4000m Operating Altitude
- Efficiency to 92%
- Remote ON/OFF
- Continuous Short Circuit Protection
- Over Temperature/Over Voltage/Current Protection
- Industry Standard Quarter-Brick Package
- Shock & Vibration: EN50155 (EN61373)
- EMC: EN50155 (EN20121-3-2) with External Filter

MODEL NUMBER	INPUT VOLTAGE [VDC]	OUTPUT VOLTAGE [VDC]	OUTPUT CURRENT [A]	INPUT CURRENT NO LOAD [mA]	INPUT CURRENT FULL LOAD [mA]	EFF. [%]	CAP. LOAD Max. [μ F]	CASE
DV43-160-05SA12Q	43 - 160	5	12	5	600	91	6800	Q
DV43-160-12SA5Q		12	5	5	593	92	3300	
DV43-160-15SA4Q		15	4	5	606	90	3300	
DV43-160-24SA2,5Q		24	2,5	5	606	90	1200	
DV43-160-28SA2,14Q		28	2,14	5	606	90	1200	
DV43-160-48SA1,25Q		48	1,25	5	613	89	470	

NOTE:

1. Nominal Input Voltage 110 Vdc

INPUT SPECIFICATIONS:

Input Voltage Range.....	43-160V
Input Surge Voltage (100ms max.).....	180Vdc max.
Under Voltage Lockout:.....Power up.....	42V
Power down.....	38V
Input Filter.....	Pi Type
Positive Logic Remote ON/OFF (see note 2 & 3)	

OUTPUT SPECIFICATION:

Voltage Accuracy.....	±1,5%max.
Transient Response: 25% Step Load Change	
Recover Time.....	<250µ sec.
External Trim Adj. Range.....	±10%
Ripple and Noise, 20 MHz BW (see note 4)	
5V.....	40mV RMS / 100mV pk-pk max
12V/15V.....	60mV RMS / 150mV pk-pk max
24V/28V.....	100mV RMS / 240mV pk-pk max
48V.....	200mV RMS / 480mV pk-pk max
Temperature Coefficient.....	±0,03%/°C max.
Short Circuit Protection.....	Continuous
Line Regulation (From High Line to Low Line).....	±0,2% max.
Load Regulation (From Full Load to Zero Load).....	±0,2% max.
Over Voltage Protection trip Range, % Vo nom.....	115-140%
Current Limit.....	110-165% Nominal Output
Start up time.....	15ms typ.

GENERAL SPECIFICATIONS:

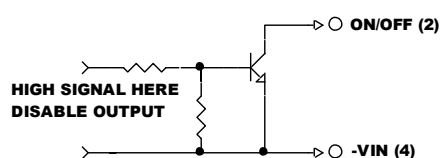
Efficiency.....	See Table
Isolation Voltage.....	Input/Output..... 2250 VDC min.
Input/Case.....	2250 VDC min.
Output/Case.....	1500 VDC min.
Isolation Resistance.....	10 ⁷ Ohm min.
Isolation Capacitance.....	1000pF typ.
Switching Frequency.....	200 KHz typ.
Operating Case Temperature Range.....	-40°C to +100°C
Storage Temperature Range.....	-55°C to +105°C
Humidity.....	95% RH max. Non condensing
Thermal Shutdown, Case Temp.....	110°C typ.
Operating Altitude.....	4000m
Safety.....	UL60950-1 2 nd (Basic insulation)
EMC (Note 7).....	meet EN50155 (EN50121-3-2) with external filter
Shock/Vibration.....	meet EN50155 (EN61373)
Dimensions.....	57,9 x 36,8 x 12,7 mm (2,28 x 1,45 x 0,50 inches)
Case Material.....	Aluminum Baseplate with Plastic Case
Weight.....	61,5 g

NOTE:

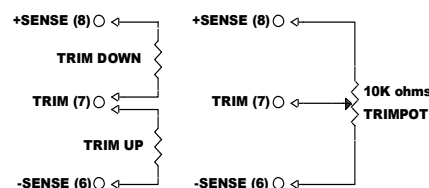
- Positive Logic Remote ON/OFF:
Logic Compatibility..... Open Collector Ref. to -Inut
Module ON..... >3,5Vdc to 75Vdc or Open Circuit
Module OFF..... < 1,2Vdc
- Suffix "N" to the Model Number with Negative Logic Remote ON/OFF.
Module ON..... < 1,2Vdc
Module OFF..... >3,5Vdc to 75Vdc or Open Circuit
- Output Ripple and Noise measured with 10µF tantalum and 1µF Ceramic capacitor across output.
- Suffix "-C" to the Model Number with Clear Mounting Insert (3.2mm DIA)
- An external input capacitor 68µF for all models are recommended to reduce input ripple voltage.
- Design meet EN50155 and RIA12 refer to Application Note.

All Specifications Typical at Nominal Line, Full Load and 25°C.

REMOTE ON/OFF CONTROL



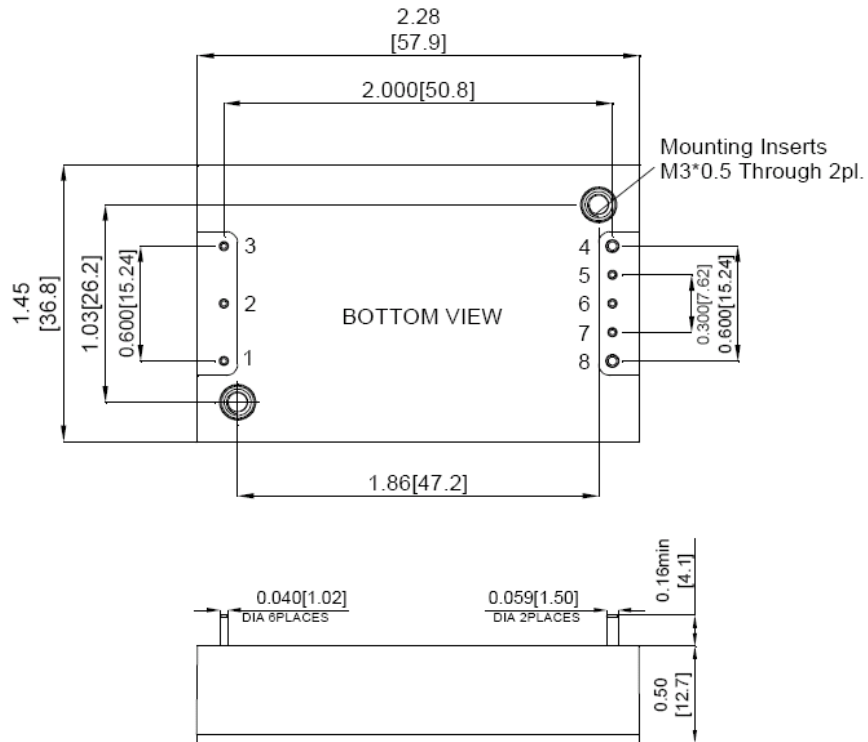
EXTERNAL OUTPUT TRIM



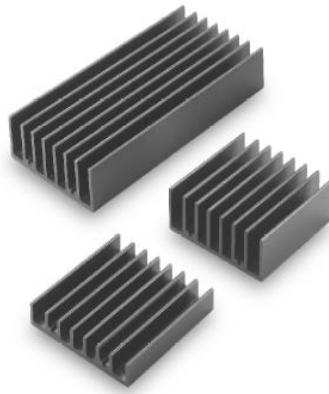
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All Dimensions in Inches (mm)

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	Remote ON/OFF
3	-V Input
4	-V Output
5	-Sense
6	Trim
7	+Sense
8	+Vout

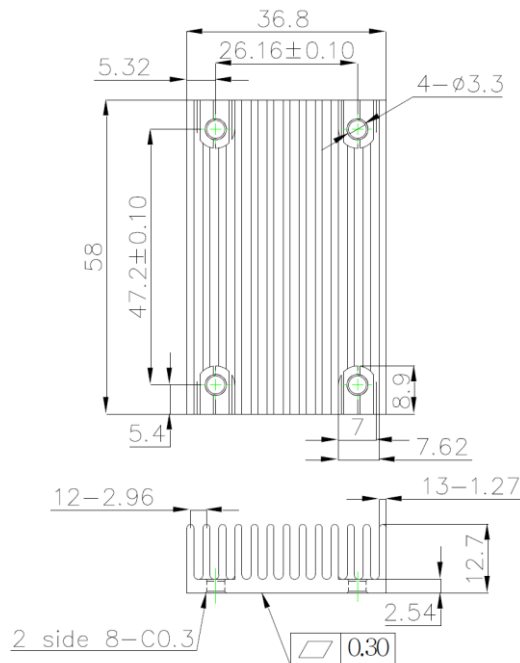
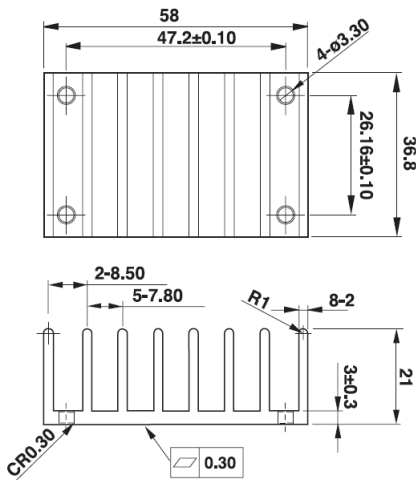


CASE Q: HEAT SINK

Vertical Fins
 Order No. 17.079.206
 Model No. M-C421

Horizontal Fins
 Order No. 17.079.209
 Model No. M-C448

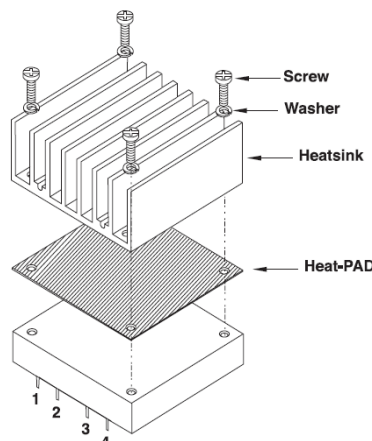
all dimensions in mm



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

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

Heat Sink Assembly
 example



Screw SMP+SW M3x8L

Thermal pad SZ 35,8x56,9x0,25

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