

# Railway Power Series

## xQB150W-24(48)SXX SERIES

### 150 WATT 4:1 INPUT DC-DC CONVERTERS SINGLE OUTPUT



## FEATURES

- \* 150W Isolated Output
- \* Efficiency up to 92%
- \* Fixed Switching Frequency
- \* 4:1 Input Range
- \* Regulated Outputs
- \* Remote On/Off
- \* Low No Load Power Consumption
- \* Over Temperature Protection
- \* Over Voltage/Current Protection
- \* Continuous Short Circuit Protection
- \* Quarter Brick Size Meet Industrial Standard
- \* UL60950-1 2<sup>nd</sup> Approval
- \* CB Test Certificate IEC60950-1
- \* Meets EN50155 with External Circuits
- \* Shock & Vibration Meets EN50155 (EN61373)
- \* Fire & Smoke Meets EN45545-2
- \* 3000m Operating Altitude



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.		CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD	(3)	(2)	
xQB150W-24S05	9-36 VDC	5 VDC	0 mA	30 A	10 mA	7.02 A	91	92	30000μF
xQB150W-24S12	9-36 VDC	12 VDC	0 mA	12.5 A	10 mA	7.02 A	91	92	12500μF
xQB150W-24S24	9-36 VDC	24 VDC	0 mA	6.3 A	10 mA	7.08 A	89.5	89.5	6300μF
xQB150W-24S28	9-36 VDC	28 VDC	0 mA	5.4 A	10 mA	7.08 A	90	90	5400μF
xQB150W-24S48	9-36 VDC	48 VDC	0 mA	3.2 A	10 mA	7.19 A	90.5	90.5	1000μF
xQB150W-48S05	18-75 VDC	5 VDC	0 mA	30 A	8 mA	3.47 A	92	92	30000μF
xQB150W-48S12	18-75 VDC	12 VDC	0 mA	12.5 A	8 mA	3.47 A	92	91	12500μF
xQB150W-48S24	18-75 VDC	24 VDC	0 mA	6.3 A	8 mA	3.50 A	91	90.5	6300μF
xQB150W-48S28	18-75 VDC	28 VDC	0 mA	5.4 A	8 mA	3.50 A	91.5	90.5	5400μF
xQB150W-48S48	18-75 VDC	48 VDC	0 mA	3.2 A	8 mA	3.56 A	92	91.5	1000μF

#### NOTE:

1. Nominal Input Voltage 24, 48 VDC
2. Measured at Nominal Input Voltage
3. Measured at 12VDC for 24Vin, 24VDC for 48Vin

# SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted

## INPUT SPECIFICATIONS:

Input Voltage Range	24V	9-36V
	48V	18-75V
Input Surge Voltage (100ms max.)	24V	50Vdc max.
	48V	100Vdc max.
Under voltage lockout	24Vin power up	8.8V
	24Vin power down	8.0V
	48Vin power up	17V
	48Vin power down	16V
Positive Logic Remote On/Off (note 4&5)		
Input Filter (note 7)		PI Type

## OUTPUT SPECIFICATIONS:

Voltage Accuracy	±1.0% max.
Transient Response: 75%-100% Step Load Change	
Error Band	±5% Vout
Recover Time	<250us
External Trim Adj. Range	±10%
Ripple & Noise, 20MHz BW	
5V	40mV RMS, 100mV pk-pk max.
12V	60mV RMS, 150mV pk-pk max.
24V&28V	100mV RMS, 280mV pk-pk max.
48V	200mV RMS, 480mV pk-pk max.
Temperature Coefficient	±0.02%/°C max.
Short Circuit Protection	Continuous
Line Regulation (note1)	±0.2% max.
Load Regulation (note2)	±0.2% max.
Over Voltage Protection trip Range ,% Vo nom.	115-140%
Current Limit	110-160% Nominal Output
Start up time	60ms typ.

## GENERAL SPECIFICATIONS:

Efficiency	See Table
Isolation Voltage	Input/Output 2250VDC min.
	Input/Case, Output/Case 2250VDC min.
Isolation Resistance	10 <sup>8</sup> ohm min.
Isolation Capacitance	1500pF typ.
Switching Frequency	300KHz typ.
Operating Case Temperature	-40°C to +105°C
Storage Temperature	-55°C to +125°C
Thermal Shutdown, Case Temperature	110°C typ.
Humidity	95% RH max. Non condensing
Shock/Vibration	Meet MIL-STD-810F/EN61373
MTBF ... MIL-HDBK-217F, GB, 25°C, Full Load	XXS05, XXS12... 300Khrs typ.
	Others ... 560Khrs typ.
Dimensions	2.28x1.45x0.50 inches (57.9x36.8x12.7 mm)
Case Material	Aluminum Baseplate with Plastic Case
Weight	68g

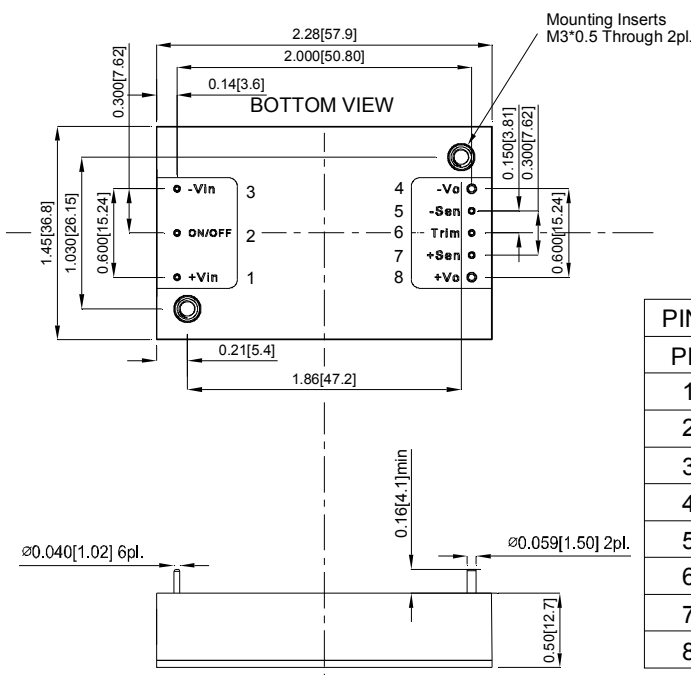
## NOTE:

1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with 10uF aluminum and 1uF ceramic capacitor across output for 48Vout and with 10uF tantalum and 1uF ceramic capacitor for others.
4. Logic Compatibility ..... open collector ref to -input  
 Module on ..... >3.5Vdc to 75Vdc or open circuit  
 Module off ..... 0 to < 1.2Vdc
5. Suffix "N" to the model number with negative logic remote on/off  
 Module on ..... 0 to < 1.2Vdc  
 Module off ..... >3.5Vdc to 75Vdc or open circuit
6. Suffix "-C" to the model number with clear mounting insert (3.2mm DIA.).
7. An external input capacitor 220uF for all models are recommended to reduce input ripple voltage.

## Case Dimensions

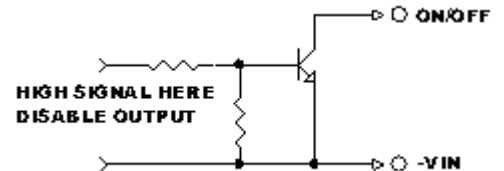
All Dimensions In Inches(mm)

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

## REMOTE ON/OFF CONTROL



## EXTERNAL OUTPUT TRIM

