

Features

- Ultra Wide 4:1 Input Voltage Range
- Very Low Stand-by (no-load) Power Consumption
50mW typ. and 150mW max.
- Very High Efficiency up to 86%
- 3W Single and Dual outputs
- I/O Isolation 2KVDC, 4KVDC and 6KVDC Option
- Operating Temperature Range -40°C to +85°C
- Continuous Short Circuit Protection
- Remote ON/OFF Control add Suffix "/CTRL" Option
- A&C Pinning Option

Description

The BWQ3 series is an excellent performance and,

Ultra Wide 4:1 input voltage ranges: 4.5V-18V, 9V-36V and 18V-75V.

The highest efficiency allows -40°C to +85°C operating temperatures.

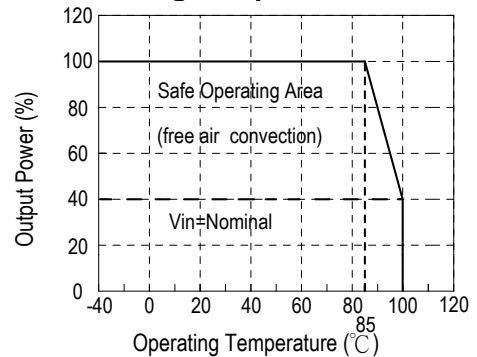
The very low stand-by (no-load) input power consumption 50mW typ. makes them an ideal solution for application in battery-powered equipment and instrumentation.

DIP24, Single & Dual Outputs



RoHS

Derating Graph



Selection Guide

(X=2=2KVDC, X=4=4KVDC, X=6=6KVDC, Y=A=A PINNING, Y=C=C PINNING)

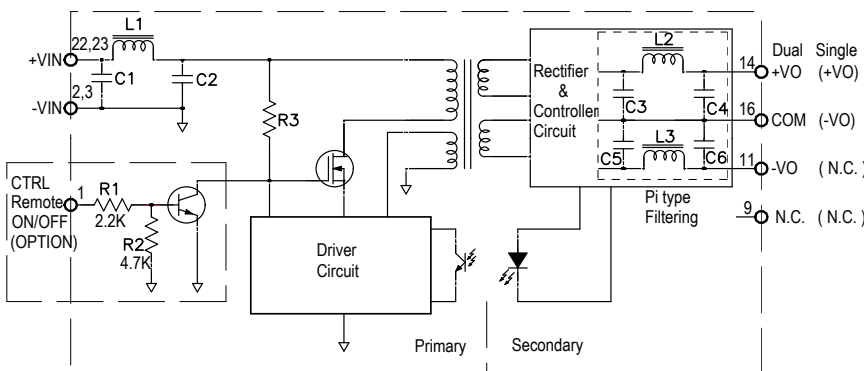
Part Number	Input Voltage	Output Voltage	Output Current max.	Efficiency Typ.	Max. Capacitive Load
BWQ3-1203SXY	4.5-18VDC (12VDC nominal)	3.3 VDC	600 mA	78%	1000uF
BWQ3-1205SXY		5 VDC	600 mA	82%	1000uF
BWQ3-1212SXY		12 VDC	250 mA	85%	470uF
BWQ3-1215SXY		15 VDC	200 mA	85%	330uF
BWQ3-1205DXY		±5 VDC	±300 mA	82%	±470uF
BWQ3-1212DXY		±12 VDC	±125 mA	84%	±100uF
BWQ3-1215DXY		±15 VDC	±100 mA	85%	±47uF
BWQ3-2403SXY	9-36VDC (24VDC nominal)	3.3 VDC	600 mA	79%	1000uF
BWQ3-2405SXY		5 VDC	600 mA	83%	1000uF
BWQ3-2412SXY		12 VDC	250 mA	85%	470uF
BWQ3-2415SXY		15 VDC	200 mA	85%	330uF
BWQ3-2405DXY		±5 VDC	±300 mA	84%	±470uF
BWQ3-2412DXY		±12 VDC	±125 mA	86%	±100uF
BWQ3-2415DXY		±15 VDC	±100 mA	86%	±47uF
BWQ3-4803SXY	18-75VDC (48VDC nominal)	3.3 VDC	600 mA	80%	1000uF
BWQ3-4805SXY		5 VDC	600 mA	83%	1000uF
BWQ3-4812SXY		12 VDC	250 mA	85%	470uF
BWQ3-4815SXY		15 VDC	200 mA	85%	330uF
BWQ3-4805DXY		±5 VDC	±300 mA	83%	±470uF
BWQ3-4812DXY		±12 VDC	±125 mA	85%	±100uF
BWQ3-4815DXY		±15 VDC	±100 mA	85%	±47uF

Specifications

(measured at $T_A=25^{\circ}\text{C}$, nominal input voltage, full load and after warm-up)

Input Voltage Range	4.5-18V,9-36V,18-75V	4:1
Input Filter		Pi type
Output Voltage Accuracy	Nominal V_{in} and full load	$\pm 2\%$
Line Voltage Regulation	$V_{in}=\text{min}$ to max,full load	$\pm 0.5\%$ typ.
Load Voltage Regulation	20% to 100% of full load	$\pm 0.5\%$ typ.
Output Ripple and Noise	20MHz BW	60mVp-p max.
Operating Frequency		150kHz min.
No Load Power Consumption		50mW typ. / 150mW max.
Isolation Voltage	1 second	2K,4K & 6K VDC
Isolation Capacitance	100KHz tested	30PF max.
Isolation Resistance	500VDC, input to output	15G Ω min.
Short Circuit Protection		Continuous
Temperature Coefficient	-40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$ ambient	0.015%/ $^{\circ}\text{C}$ typ.
Temperature Rise at Full Load		15 $^{\circ}\text{C}$ typ.
Operating Temperature Range	see Graph	-40 $^{\circ}\text{C}$ to +100 $^{\circ}\text{C}$
Operating Case Temperature		+110 $^{\circ}\text{C}$ max.
Storage Temperature Range		-55 $^{\circ}\text{C}$ to +125 $^{\circ}\text{C}$
Relative Humidity		95% RH
Case Material	UL94-V0	Non-conductive black plastic
Potting Material	UL94-V0	Epoxy
Package Weight		13g
Packing Quantity		15 pcs per Tube
Lead Temperature		300 $^{\circ}\text{C}$ max. 1.5mm from case for 10 sec
Remote Power OFF (leave open if not used) (15VDC max.)	Device ON Device OFF Device OFF Stand by input current	open or <0.8VDC CTRL>1.5VDC 0.5mA max.
MTBF(+25 $^{\circ}\text{C}$)	using MIL-HDBK 217F	2597x10 ³ hours
(+71 $^{\circ}\text{C}$)	using MIL-HDBK 217F	378x10 ³ hours

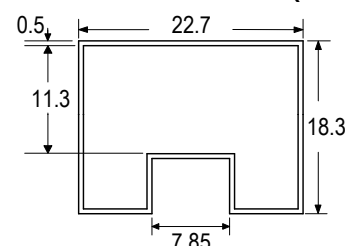
Functional Block Diagram (A Pinning)



The Values of Input π type Filtering

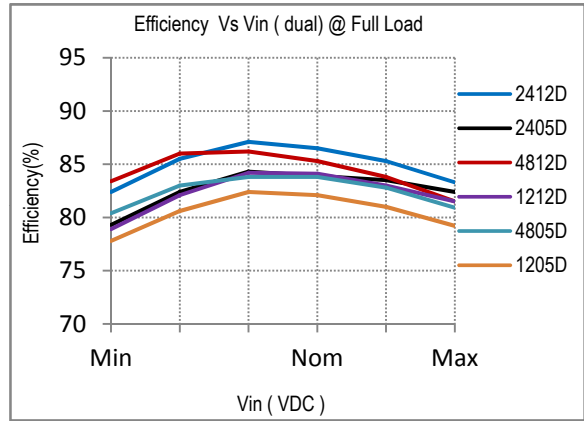
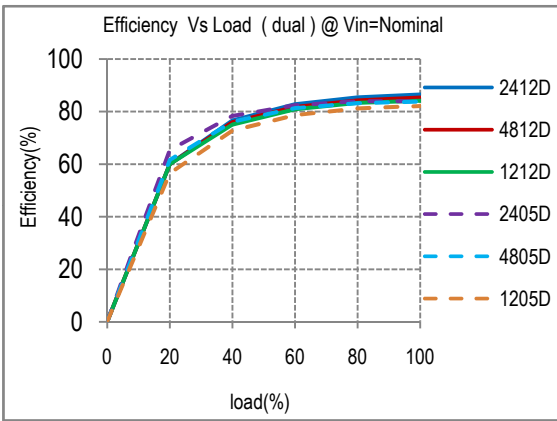
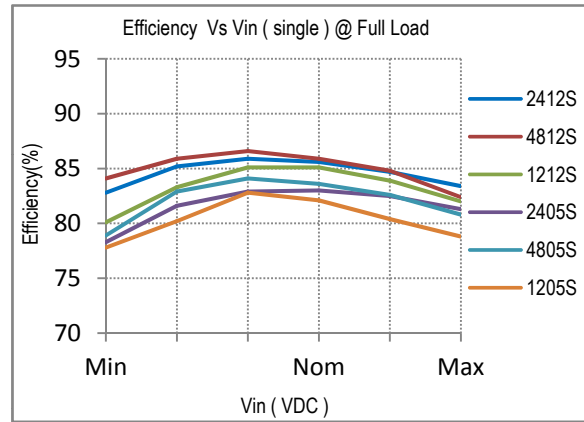
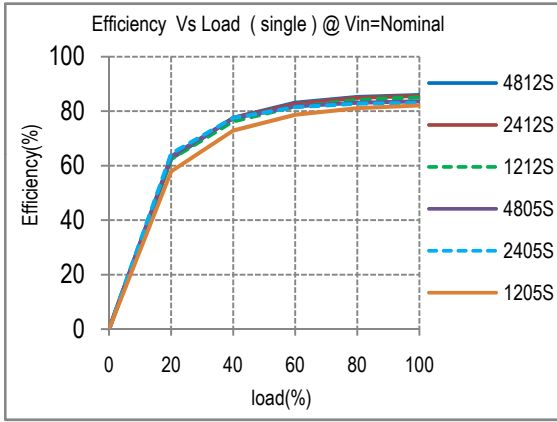
Input Voltage	C1	C2	L1
4.5~18VDC	0.1 μF ~1 μF	10 μF /25V	0.47 μH ~4.7 μH
9~36VDC	0.1 μF ~1 μF	4.7 μF /50V	1 μH ~10 μH
18~75VDC	0.1 μF ~1 μF	1 μF /100V	2.2 μH ~22 μH

Tube Outline Dimensions (mm)



Tolerance:
XX.X \pm 0.5 mm

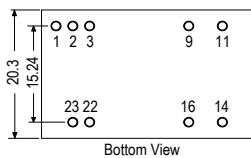
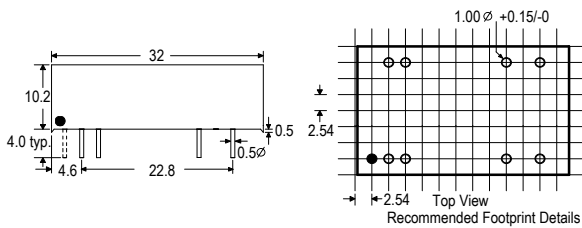
Note:
L=530 \pm 2 mm
Devices per tube
Quantity: 15PCS



Package Style and Pinning (mm)

DIP24 Package

"A" PINNING

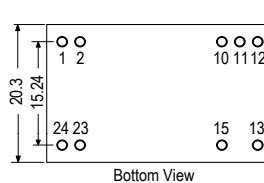
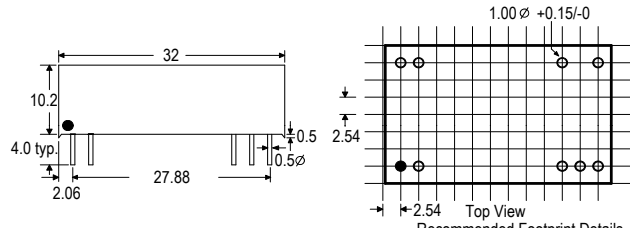


Pin Connections

Pin#	Single	Dual
1(option)	CTRL	CTRL
2	-Vin	-Vin
3	-Vin	-Vin
9	NC	Com
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	COM
22	+Vin	+Vin
23	+Vin	+Vin

NC=No Connection
CTRL=Remote ON/OFF Control
e.g. BWQ3-1205S4A/CTRL

"C" PINNING



Pin Connections

Pin#	Single	Dual
1	+Vin	+Vin
2	+Vin	+Vin
10	NC	Com
11	NC	Com
12	-Vout	NC
13	+Vout	-Vout
15	NC	+Vout
23	-Vin	-Vin
24	-Vin	-Vin

NC=No Connection

XX.X ± 0.25 mm

XX.XX ± 0.15 mm