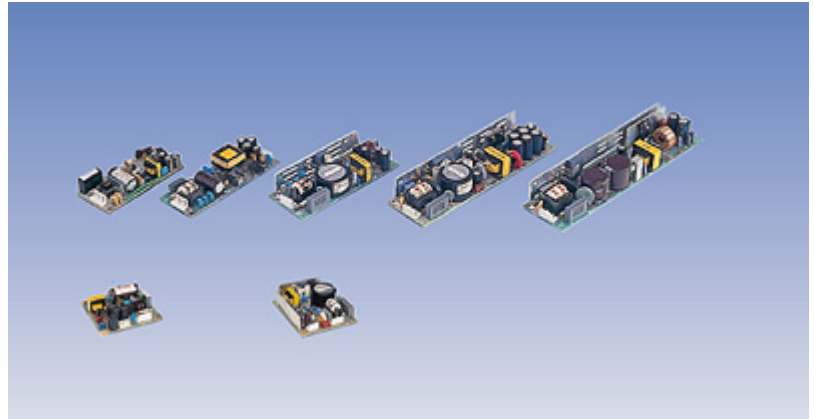


### General Description

BW-series is an open board, low profile, low price switcher without chassis and cover. It is designed for small size and low cost applications world-wide. The output power can be boosted 15% to 30% above nominal.

Dimensions: 55x163x36 mm



### Options

Cover (Add suffix "-P" ex. BWT05SX-PU)  
40cm long wire harness

### Features

1. Open frame type
2. EMI: Complies with EN55022B, FCC/B
3. Low cost
4. Option: Chassis + cover
5. Mountable on any axis
6. Universal Input 85-264 VAC
7. BWTE now applying for safety approval

| Specifications<AC/DC>       | Model   |           |           |           |           |           |           |  |
|-----------------------------|---|-----------|-----------|-----------|-----------|-----------|-----------|--|
| BWT/BWTE**SX-U              | BWT3.3SX-U                                    | BWT05SX-U | BWT12SX-U | BWT15SX-U | BWT24SX-U | BWT36SX-U | BWT48SX-U |  |
| <b>30WATTS/SINGLE</b>       | BWTE3.3SX                                     | BWTE05SX  | BWTE12SX  | BWTE15SX  | BWTE24SX  | BWTE36SX  | BWTE48SX  |  |
| <b>Input Characteristic</b> |   |           |           |           |           |           |           |  |
| Input Voltage               | AC100-230V                                    |           |           |           |           |           |           |  |
| Input Current               | 0.7A at AC100V/0.4A at AC230V                 |           |           |           |           |           |           |  |
| Input Range                 | AC85-264V(DC110-370V)                         |           |           |           |           |           |           |  |
| Input Frequency             | 50/60Hz                                       |           |           |           |           |           |           |  |
| Input Frequency Range       | 47-440Hz                                      |           |           |           |           |           |           |  |
| Phase                       | Single  |           |           |           |           |           |           |  |
| Inrush Current *1           | 15A(maximum) at AC100V/30A(maximum) at AC230V |           |           |           |           |           |           |  |
| Efficiency [%] (typical) *2 | 70  | 75        | 78        | 80        | 81        | 81        | 84        |  |

## BWT/BWTE\*\*SX Specification

| Specifications<AC/DC>   | Model  |                       |                       |                       |                       |                       |                       |
|---|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| BWT/BWTE**SX-U<br>30WATTS/SINGLE                              | BWT3.3SX-U<br>BWTE3.3SX  | BWT05SX-U<br>BWTE05SX | BWT12SX-U<br>BWTE12SX | BWT15SX-U<br>BWTE15SX | BWT24SX-U<br>BWTE24SX | BWT36SX-U<br>BWTE36SX | BWT48SX-U<br>BWTE48SX |
| <b>Output Characteristic</b>                                  |  |                       |                       |                       |                       |                       |                       |
| Output Voltage [V]  | 3.3  | 5                     | 12                    | 15                    | 24                    | 36                    | 48                    |
| Output Current [A]  | 6.0  | 6.0                   | 2.5                   | 2.0                   | 1.3                   | 0.9                   | 0.7                   |
| Voltage Adjust Range  | +/- 10% of Rated Output Voltage(at no load within the input range)   |                       |                       |                       |                       |                       |                       |
| Ripple and Noise [mVp-p](maximum) *3                          | 83   | 100                   | 170                   | 200                   | 290                   | 410                   | 530                   |
| <b>Regulation</b>   |  |                       |                       |                       |                       |                       |                       |
| a.Statistic Line Regulation [mV](maximum)                     | 26.4   | 40                    | 96                    | 120                   | 192                   | 288                   | 384                   |
| b.Statistic Load Regulation [mV](maximum)                     | 29.7   | 45                    | 108                   | 135                   | 216                   | 324                   | 432                   |
| c.Temperature Coefficient *4                                  | 0.03%/°C   |                       |                       |                       |                       |                       |                       |
| d.Drift[mV](maximum) *5                                       | 31.5   | 40                    | 75                    | 90                    | 135                   | 195                   | 255                   |
| e.Dynamic Load Regulation [mV](typical) *6                    | 99   | 150                   | 360                   | 450                   | 720                   | 1080                  | 1440                  |
| f.Recovery Time *6  | 0.3mS(typical)   |                       |                       |                       |                       |                       |                       |
| Rise up time  | 200mS(maximum) at 25°Cand rated input/output   |                       |                       |                       |                       |                       |                       |
| Hold up time  | 20mS(minimum) at 25°Cand rated input/output  |                       |                       |                       |                       |                       |                       |
| <b>Functions</b>  |  |                       |                       |                       |                       |                       |                       |
| Overcurrent Protection $\geq 10\%$ of Rated Output Current[A] | Current Limiting with automatic recovery   |                       |                       |                       |                       |                       |                       |
|   | 6.6  | 6.6                   | 2.75                  | 2.2                   | 1.43                  | 0.99                  | 0.77                  |
| Overvoltage Protection $\geq 15\%$ of Rated Output Voltage[V] | Zener diode clamping   |                       |                       |                       |                       |                       |                       |
|   | 3.8  | 5.75                  | 13.8                  | 17.3                  | 27.6                  | 41.4                  | 55.2                  |
| Remote Sense  | not available  |                       |                       |                       |                       |                       |                       |
| Remote On/Off   | not available  |                       |                       |                       |                       |                       |                       |
| <b>Environmental</b>  |  |                       |                       |                       |                       |                       |                       |
| Operating Temperature   | open board type:-10 to +50°C/enclosed type:-10 to +40°C  |                       |                       |                       |                       |                       |                       |
| Operating Humidity  | 20 to 90%RH(non-condensing)  |                       |                       |                       |                       |                       |                       |
| Storage Temperature   | -20 to +85°C   |                       |                       |                       |                       |                       |                       |
| Storage Humidity  | 20 to 90%RH(non-condensing)  |                       |                       |                       |                       |                       |                       |
| Withstanding Voltage  | Primary-Secondary AC3,000V for 1minute<br>Primary-Frame Ground AC2,500V for 1minute<br>Secondary-Frame Ground AC500V for 1minute |                       |                       |                       |                       |                       |                       |
| Isolation Resistance  | Primary-Secondary-Frame Ground 50MQ(minimum) by DC500V insulation tester   |                       |                       |                       |                       |                       |                       |
| Vibration   | 5-10Hz:10mm double amplitude,10-55Hz:19.6rms <sup>2</sup> 20minutes' period for 60minutes each along X,Y,Z axes (non-operating)  |                       |                       |                       |                       |                       |                       |
| Shock   | 294rms <sup>2</sup>  |                       |                       |                       |                       |                       |                       |
| Cooling   | Convection   |                       |                       |                       |                       |                       |                       |
| ? Leakage Current   | 1mA(maximum) at 25°Cated input/output and rated input frequency  |                       |                       |                       |                       |                       |                       |
| ? Conducted Line Noise  | Built to meet FCC Part15-B Class B<br>Built to meet VCCI Class B<br>Built to meet EN55022 Class B                                |                       |                       |                       |                       |                       |                       |
| ? Safety  | UL: UL1950(Except BWTE)<br>C-UL: CSA C22.2 No.950(Except BWTE)<br>VDE: EN60950, IEC950, VDE0805(Except BWTE)                     |                       |                       |                       |                       |                       |                       |
| Weight (typical)  | open board type:135g /enclosed type:285g   |                       |                       |                       |                       |                       |                       |
| ? MTBF [H]  | 580,000  |                       |                       |                       |                       |                       |                       |
| ? Switching Frequency[kHz](typical) *7                        | 60   | 50                    | 50                    | 50                    | 50                    | 50                    | 50                    |

Conditions:

\*1at cold start

\*2 at DC130V input/rated output

\*3 measured by a bayonet probe at the end of a pair of 20cm long wires terminated with a 47uF electrolytic capacitor and 0.1uF film capacitor in parallel at a 0 to 100MHz bandwidth

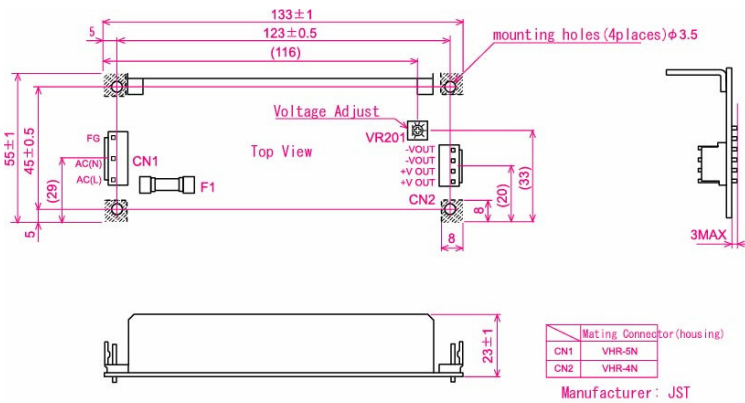
\*4 open board type: at -10 to +50°Cenclosed type: at -10 to +40°C

\*5 for 7hour period after 1hour warm-up at 25°Cand rated input/output

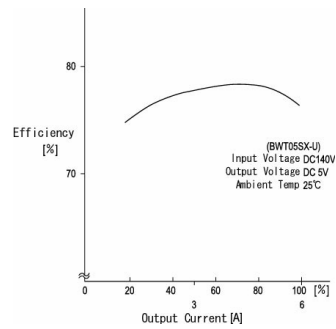
\*6 when output current changed from 25% of rated output current to 75% rapidly at rated input

\*7 variable on input voltage and load conditions

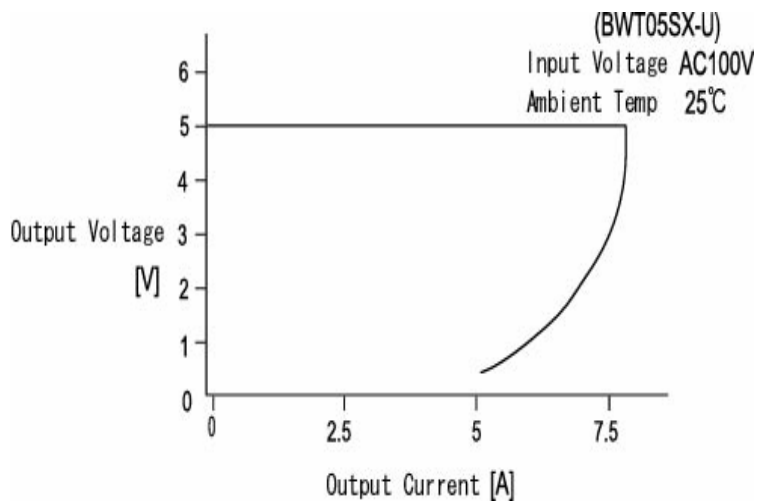
### Dimension (mm)



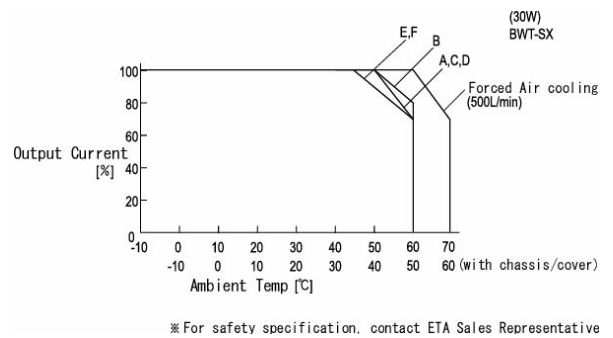
### Efficiency Curve



### OCP Curve



### Derating Curve



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