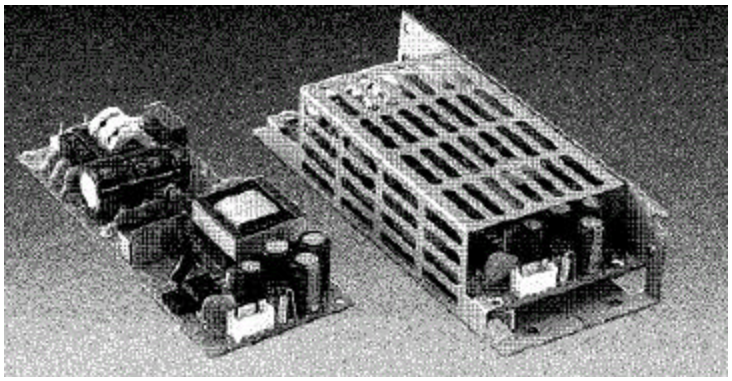
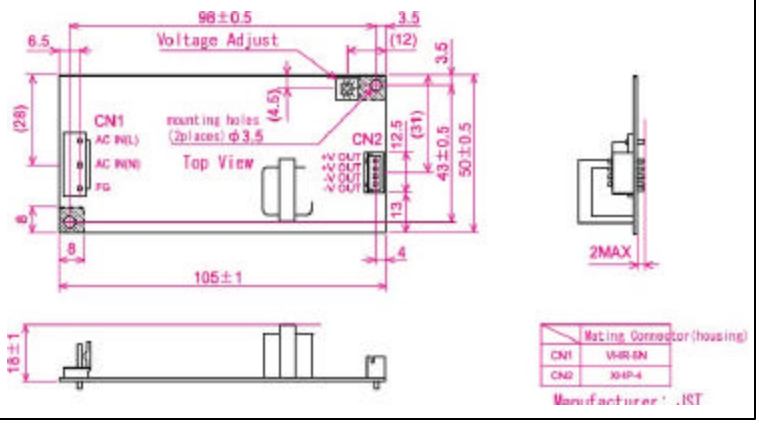
10 WATT
AC-DC CONVERTER

BWS/BWSE-SX SERIES

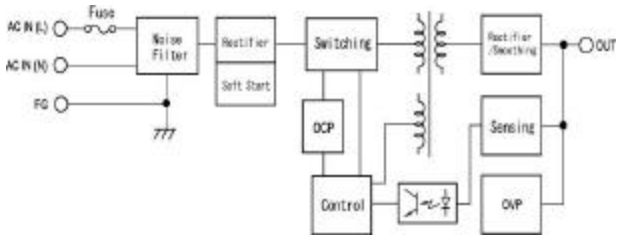


Specifications<AC/DC>	Model				
BWSSX-U/BWSE**SX 10WATTS/SINGLE**	BWS3.3SX-U BWSE3.3SX	BWS05SX-U BWSE05SX	BWS12SX-U BWSE12SX	BWS15SX-U BWSE15SX	BWS24SX-U BWSE24SX
Input Characteristic					
Input Voltage	AC100-230V				
Input Current	0.3A at AC100V/0.15A at AC230V				
Input Range	AC85-264V(DC110-370V)				
Input Frequency	50/60Hz				
Input Frequency Range	47-440Hz				
Phase	Single				
Inrush Current *1	15A(maximum) at AC100V/35A(maximum)at AC230V				
Efficiency [%] (typical) *2	66	74	80	80	81

Dimension (mm) BWS-SX-U



Block Diagram BWS-SX-U



ETA-USA
HIGH QUALITY SWITCHING POWER SUPPLIES
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BWS/BWSE Specification

Specifications<AC/DC>	Model				
BWS**SX-U/BWSE**SX 10WATTS/SINGLE	BWS3.3SX-U BWSE3.3SX	BWS05SX-U BWSE05SX	BWS12SX-U BWSE12SX	BWS15SX-U BWSE15SX	BWS24SX-U BWSE24SX
Output Characteristic					
Output Voltage [V]	3.3	5	12	15	24
Output Current [A]	2.0	2.0	0.9	0.7	0.5
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
Regulation					
Statistic Line Regulation [mV](maximum)	26.4	40	96	120	192
Statistic Load Regulation [mV](maximum)	29.7	45	108	135	216
Temperature Coefficient *4	0.03%/^{O}C				
Drift[mV](maximum) *5	31.5	40	75	90	135
Dynamic Load Regulation [mV](typical)	not specified				
Recovery Time	not specified				
Rise up time	200mS(maximum) at 25^{O}C and rated input/output				
Hold up time	20mS(typical) at 25^{O}C and rated input/output				
Functions					
Overcurrent Protection *6 >=110% of Rated	Current Limiting with automatic recovery				
Output Current[A]	2.2	2.2	0.99	0.77	0.55
Overvoltage Protection >=115% of	Zener diode clamping				
Rated Output Voltage[V]	3.8	5.75	13.8	17.3	27.6
Remote Sense	not available				
Remote On/Off	not available				
Environmental					
Operating Temperature	open board type:-5 to +50^{O}C/enclosed type:-5 to +40^{O}C				
Operating Humidity	20 to 85%RH(non-condensing)				
Storage Temperature	-20 to +85^{O}C				
Storage Humidity	20 to 85%RH(non-condensing)				
Withstanding Voltage	Primary-Secondary AC3,000V for 1minute				
	Primary-Frame Ground AC2,500V for 1minute				
	Secondary-Frame Ground AC500V for 1minute				
Isolation Resistance	Primary-Secondary-Frame Ground 100MW(minimum) by DC500V insulation tester				
Vibration	5-10Hz:10mm double amplitude,10-55Hz:19.6m/s ^{2},20minutes' period for 60minutes each along X,Y,Z axes(non-operating)				
Shock	294m/s^{2}				
Cooling	Convection				
Leakage Current	0.75mA(maximum) at 25^{O}C,rated input/output and rated input frequency				
Line Conducted Noise	Built to meet FCC Part15-B Class B				
	Built to meet VCCI Class B				
	Built to meet EN55022 Class B				
Safety	UL: UL1950(Except BWSE)				
	C-UL: CSA C22.2 No.950(Except BWSE)				
	VDE: EN60950, IEC950, VDE0805(Except BWSE)				
Weight (typical)	open board type:73g/enclosed type:160g				
MTBF [H]	730,000				
Switching Frequency[kHz](typical) *7	80				

Conditions:

*1at cold start

*2 at DC130V input/rated output

*3 measured by a bayonet probe at the end of a pair of 15cm long wires terminated with a 100uF electrolytic capacitor and 0.1uF film capacitor in parallel at a 0 to 100MHz bandwidth

*4 open board type: at -5 to +50^{O}C/enclosed type: at -5 to +40OC

*5 for 7hour period after 1hour warm-up at 25OC and rated input/output

*6 for less than 1minute of overcurrent and short circuit

*7 variable on input voltage and load conditions

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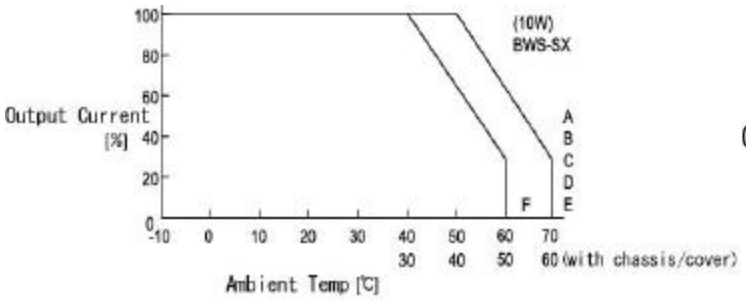
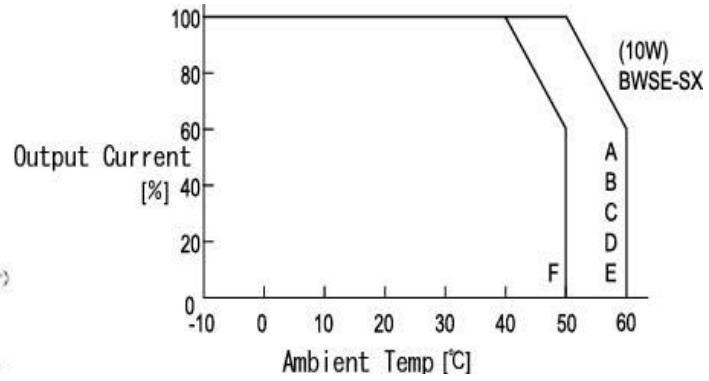
Derating Curve

BWS-SX-U



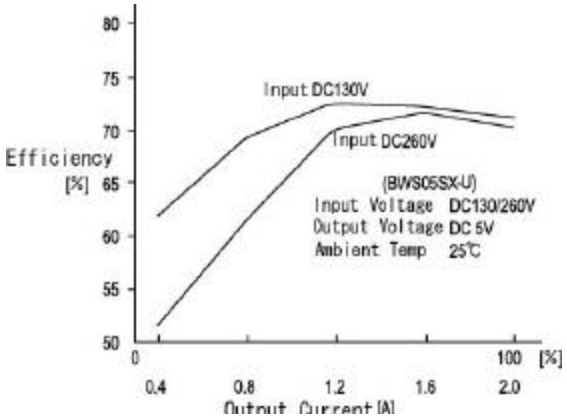
※For safety specification, contact ETA Sales Representative

BWSE-SX-U

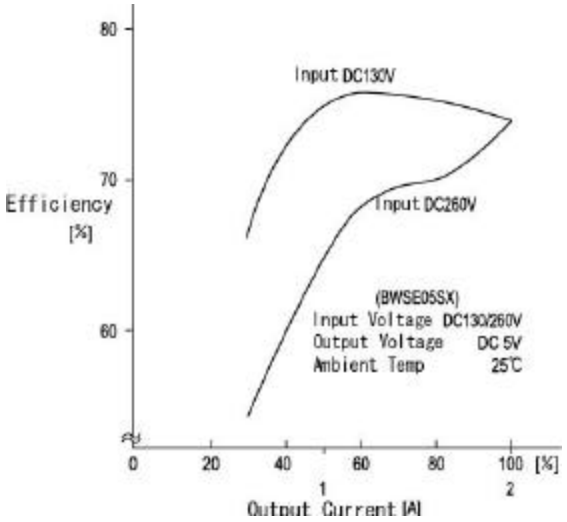


Efficiency Curve

BWS-SX-U

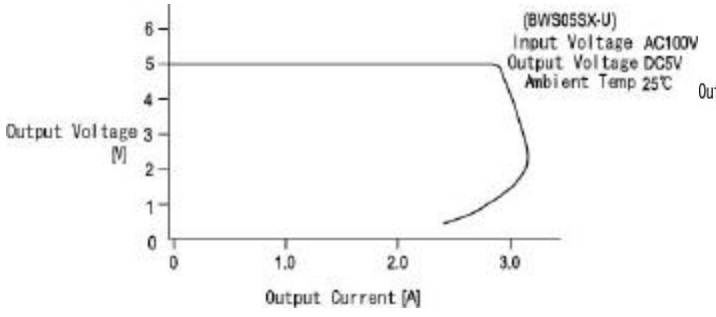


BWSE-SX-U

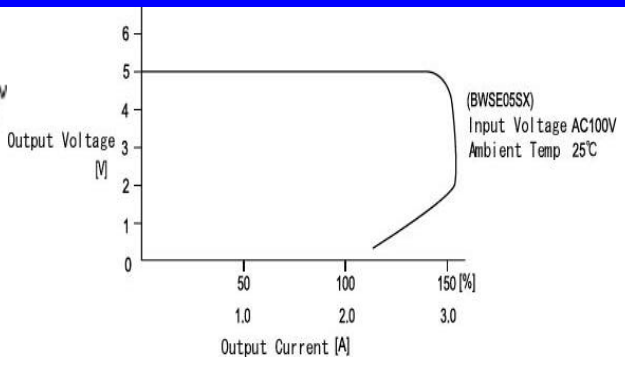


OCP Curve

BWS-SX-U



BWSE-SX-U



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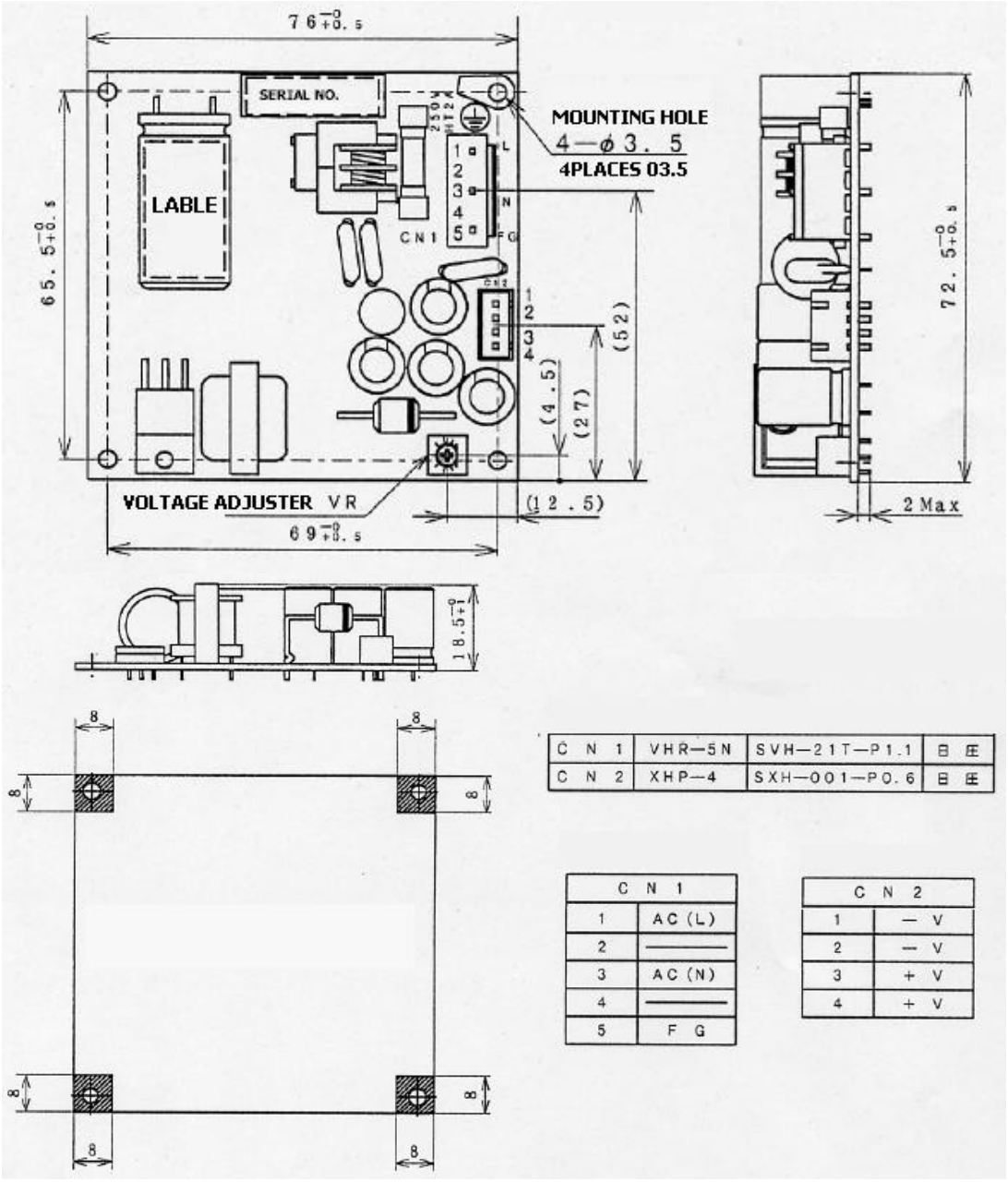

C N 1	VHR—5N	SVH—21T—P1.1	日圧
C N 2	XHP—4	SXH—001—P0.6	日圧

C N 1	
1	AC (L)
2	——
3	AC (N)
4	——
5	F G

C N 2	
1	— V
2	— V
3	+ V
4	+ V

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