ETA-USA
Your power supply experts

10 WATT
AC-DC CONVERTER

BNS/ BNSE-SA Series

Specifications<AC/DC>	Model				
BNSSA-U/BNSE**SA 10WATTS/SINGLE**	BNS3.3SA-U BNSE3.3SA	BNS05SA-U BNSE05SA	BNS12SA-U BNSE12SA	BNS15SA-U BNSE15SA	BNS24SA-U BNSE24SA
Input Characteristic					
Input Voltage	AC100-115V				
Input Current	0.3A				
Input Range	AC85-132V(DC110-175V)				
Input Frequency	50/60Hz				
Input Frequency Range	47-440Hz				
Phase	Single				
Inrush Current *1	20A(typical) at AC100V				
Efficiency [%] (typical) *2	67	70	73	75	76

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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	80	80	120	120	120
Regulation					
a.Statistic Line Regulation [mV](maximum)	26	40	96	120	192
b.Statistic Load Regulation [mV](maximum)	30	45	108	135	216
c.Temperature Coefficient *4	0.03%/C				
d.Drift[mV](maximum) *5	32	40	75	90	135
e.Dynamic Load Regulation [mV](typical) *6	not specified				
f.Recovery Time *6	not specified				
Rise up time	200mS(maximum) at 25C and rated input/output				
Hold up time	20mS(typical) at 25C and rated input/output				
Functions					
Overcurrent Protection *7 = or >105% of Rated Output Current[A]	Current Limiting with automatic recovery				
	2.1	2.1	0.95	0.74	0.53
Overvoltage Protection = or >115% of Rated Output Voltage[V]	Zener diode clamping				
	3.8	5.75	13.8	17.3	27.6
Remote Sense	not available				
Remote On/Off	not available				
Environmental					
Operating Temperature	-10 to +50C				
Operating Humidity	20 to 90%RH(non-condensing)				
Storage Temperature	-20 to +75C				
Storage Humidity	20 to 90%RH(non-condensing)				
Withstanding Voltage	Primary-Secondary AC2,000V for 1minute				
	Primary-Frame Ground AC2,000V for 1minute				
	Secondary-Frame Ground AC500V for 1minute				
Isolation Resistance	Primary-Secondary-Frame Ground 50MOhm(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	196m/s^2				
Cooling	Convection				
Leakage Current	0.5mA(maximum) at 25C,rated input/output and rated input frequency				
Line Conducted Noise	Built to meet FCC Part15-B Class B				
	Built to meet VCCI Class B				
Safety	UL: UL1950(Except BNSE)				
	C-UL: CSA C22.2 No.950(Except BNSE)				
Weight (typical)	open board type:60g				
MTBF [H]	650,000				
Switching Frequency[kHz](typical) *8	64	66	66	66	85

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 20MHz bandwidth
*4 at -10 to +50℃
*5 for 7hour period after 1hour warm-up at 25℃and rated input/output
*6 when output current changed from 25% of rated output current to 75% rapidly at AC100V input
*7 for less than 1minute of overcurrent and short circuit
*8 variable change on input voltage and load conditions

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