https://product.tdk.com/en/power/zws-c www.emea.lambda.tdk.com/zws-c

10 to 60W Single Output, High Reliability Power Supplies

勝特力電材超市-龍山店 886-3-5773766 勝特力電材超市-光復店 886-3-5729570 胜特力电子(上海) 86-21-34970699 胜特力电子(深圳) 86-755-83298787 http://www.100y.com.tw











The ZWS-C industrial grade power supplies are used in a wide range of applications where equipment down-time cannot be tolerated during years of operation. Globally, process control, machinery, semiconductor fabrication and test and measurement equipment manufacturers depend upon the ZWS series to provide a reliable source of power. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of up to 15 years. Available in four power levels, 10W, 15W, 30W and 50W, the series provides a choice of 5V, 12V, 15V, 24V and 48V (50W only) outputs. These compact products meet class B conducted and radiated EMI in either a Class I or Class II (double insulated) construction, without the need for external filtering. In addition to a double sided board coating option, L bracket and cover configurations are available, or terminal pins for printed circuit board mounting.

Features	Benefits	
Up to 15 Year Electrolytic Capacitor Lifetimes	Improved Field Life	
Curve B Radiated and Conducted EMI	Easier System Compliance	
Enclosure, Board Coating and Connection Options	 Simplified Mounting and Installation 	
Can be used in Class I and Class II installations	Flexible Utilisation	
• 5 year Warranty	 Low Cost of Ownership 	

Model Selecte	or					
Model	Output Voltage (V) (Fixed)	Maximum Current (A) (100 / 200Vac)	Maximum Output Power (W) (100 / 200Vac)	Load Regulation (mV)	Over Voltage Protection (V)	Efficiency (Typ) (%) (100 / 200Vac)
ZWS10C-5	5	2	10	40	>5.75	77 / 78
ZWS15C-5	5	3	15	40	>5.75	76 / 78
ZWS30C-5	5	4	20	120	>5.75	80 / 82
ZWS50C-5	5	6 / 7	30 / 35	120	>5.75	80 / 81
ZWS10C-12	12	0.9	10.8	96	>13.8	82 / 83
ZWS15C-12	12	1.3 / 1.7	15.6 / 20.4	96	>13.8	80 / 83
ZWS30C-12	12	2.5 / 2.92	30 / 35	120	>13.8	84 / 86
ZWS50C-12	12	4.3 / 5	51.6 / 60	288	>13.8	83 / 86
ZWS10C-15	15	0.7	10.5	120	>17.25	83 / 84
ZWS15C-15	15	1.0 / 1.35	15 / 20.3	120	>17.25	81 / 84
ZWS30C-15	15	2.0 / 2.33	30 / 35	120	>17.25	85 / 87
ZWS50C-15	15	3.5 / 4	52.5 / 60	150	>17.25	84 / 87
ZWS10C-24	24	0.5	12	151	>26.88	84 / 85
ZWS15C-24	24	0.7 / 0.85	16.8 / 20.4	151	>26.88	82 / 85
ZWS30C-24	24	1.25 / 1.46	30 / 35	192	>27.6	86 / 88
ZWS50C-24	24	2.1 / 2.5	50.4 / 60	192	>27.6	85 / 87
ZWS50C-48	48	1.1 / 1.25	52.8 / 60	384	>55.2	86 / 88

ZWS	50	С	-	5	/A

Nominal power: 10, 15, 30, 50

Output voltage: 5, 12, 15, 24, 48

Suffix	Description
Blank	Open frame
/A	L-bracket & cover
/L	L-bracket
/P	Open frame, Pcb mount
/CO2	Double sided Pcb coating



Specifications					
Model		ZWS10C	ZWS15C	ZWS30C	ZWS50C
Input					
Input Voltage Range (Operating) (1)	Vac		85 -	265	
Nominal Input Voltage Range	Vac		100 - 240 (Note: Safety ce	ertified for 90-264Vac only)	
Input Frequency	Hz		47 - 63 (Note: Safety ce	rtified for 50-60Hz only)	
Input Current (100 / 200Vac)	Α	0.25 / 0.13	5V: 0.34 / 0.17	5V: 0.60 / 0.35	5V: 1.1 / 0.7
			12-24V: 0.34 / 0.24	12-24V: 0.70 / 0.50	12-48V: 1.2 / 1.0
Inrush Current 100 / 200Vac (typ) (Cold Start)	Α		30 /	60	
Leakage Current (230Vac 60Hz)	mA		<0.30 (230	Vac 60Hz)	
No Load Power Consumption	W	ZWS10C: 0.1 to 0.2, ZWS15C: 0.1, ZWS30C: 0.1 to 0.2, ZWS50C: 0.2 to 0.5W. See Evaluation data on website (2)			
Hold Up Time (typ) at 100Vac, 100% load	ms	20 at 100Vac, 80% Load			
Efficiency	-		See Model S	elector Table	
Conducted & Radiated EMI	-		EN55011 / EN55032	2-B, FCC-B, VCCI-B	
Immunity	-	IEC61	000-6-2, EN61000-4-2 , -3, -4	l, -5, -6, -8, -11 (See immuni	ty table)
Insulation Class	-	Certified for Class I or Class II installations			
Safety Certifications and Markings	-	IEC/UL/CSA/EN62368	B-1, EN60335-1, IEC/EN6155	58-1, IEC/EN61558-2-16, CE	E Mark and UKCA Mark

Immunity						
Test	Standard	Test Level	Criteria	Notes		
ESD	EN61000-4-2	Air ± 8kV and contact ± 4kV	В			
Radiated Susceptibility	EN61000-4-3	80M -1GHz: 10V/m 1.4 - 2.0GHz: 3V/m 2.0 - 2.7GHz: 1V/m	А			
Electrical Fast Transient Burst	EN61000-4-4	± 2kV	В			
Surge	EN61000-4-5	Normal ± 2kV Common ± 4kV	В	See IEC61000 immunity test report on website		
Conducted Susceptibility	EN61000-4-6	10Vrms	Α			
Magnetic Fields	EN61000-4-8	30A/m	Α			
		30% 500ms	Α			
Voltage Dips	EN61000-4-11	60% 200ms	A/B			
voitage Dips	LING 1000-4-11	100% 20ms	Α			
		100% 5000ms	В			

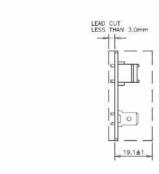


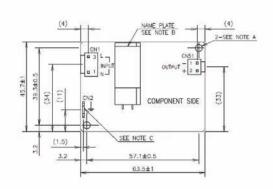
Specifications						
Model		ZWS10C	ZWS15C	ZWS30C	ZWS50C	
Output						
Output Voltage Adjustment	-	Fixed				
Switching Frequency	kHz		10	00		
Line Regulation	mV		5V: 20, 12V: 48, 15V:	60, 24V: 96, 48V 192		
Load Regulation	-		See Model S	elector Table		
External Load Capacitance	uF	ZWS	ZWS10C; 5V: 10,000, 12V: ZWS15C; 5V: 10,000, 12V: ZWS30C; 5V: 10,000, 12V: 350C; 5V: 6,000, 12V: 5,000,	2,500, 15V:1,000, 24V: 500 2,700, 15V:1,500, 24V: 600		
Ripple & Noise	mV		5V: 120, 12-24\	/: 150, 48V: 200		
Temperature Coefficient	%/°C		<0	.02		
Minimum Load	-		No minimum	load required		
Overcurrent Protection	%	>1.05				
Overvoltage Protection	V	See Model Selector Table. ZWS10C and ZWS15C Zener clamp. ZWS30C and ZWS50C cycle AC to reset				
Remote Sense	-				•	
Remote On/Off	-			-		
Parallel Operation	-	Not possible				
Environmental						
Operating Temperature (2) (Convection Cooling, Horizontal Mounting)	°C	-10 to +70, derate from 100% to 50% load from 50 to 70 (ZWS10-C from 55 to 70)				
Storage Temperature	°C	-30 to +75				
Humidity (non condensing)	%RH	30 - 90 operating, 10 - 95 storage				
Pollution Degree	-	PD2				
Cooling	-	Convection. (Forced	air will reduce derating at high a	mbient temperatures, see spec	ifications on website)(2	
Altitude	m		4,000 (2,000 for IEC/EN61	558-1, IEC/EN61558-2-16)		
Withstand Voltage (For 1 minute)	Vac	Input	to Ground 2,000, Input to Ou	utput 3,000, Output to Groun	d 750	
Isolation Resistance	ΜΩ		>100 at 25°C, 70	0%RH & 500Vdc		
Vibration (Non operating)	-	10-5	5Hz (Sweep for 1min.) 19.6r	m/s ² Constant X,Y,Z 1 hour	each	
Shock (Non operating)	-		Less than	n 196m/s²		
Other						
Weight (Typ) (Open frame models)	g	40	47	65	105	
Size (LxWxH) (Open frame models)	mm	63.5 x 45.7 x 22.1	63.5 x 45.7 x 22.1	76.2 x 50.8 x 24.2	76.2 x 50.8 x 26.7	
Size (LxWxH) (Open frame models)	Inches	2.5 x 1.8 x 0.87	2.5 x 1.8 x 0.87	3 x 2 x 0.95	3 x 2 x 1.05	
Connectors	-	Input:	JST B2P3-VH, Output: ZWS	310-30: B2P-VH, ZWS50: B	4P-VH	
MTBF - JEITA RCR-9102B(3)	Hours	389,511	379,236	371,311	366,537	
Warranty	Years		Į	5		

Notes:
(1) ZWS50C-12, -15, -24, -48: Derate linearly to 90% load from 90 to 85Vac input
(2) See Instruction manual for further details
(3) Component count method, ground fixed. Note the JEITA RCR-9102B calculation method produces figures significantly lower than Telcordia



Outline Drawing ZWS10C (Open Frame)





CONNECTORS USED:

PART DESCRIPTION	PART NAME	MANUFACT.	QTY
PIN HEADER (INPUT SIDE CN1)	B2P3-VH	J.S.T.	. 1
PIN HEADER (OUTPUT SIDE CN51)	B2P-VH	J.S.T.	- 1

MATCHING HOUSINGS (NOT INCLUDED WITH THE PRODUCT):

PART DESCRIPTION	PART NAME	MANUFACT.	OTY
SOCKET HOUSING (CN1)	VAR-2/VHR-3N	J.S.T.	1
SOCKET HOUSING (CN51)	VHR-2N	J.S.T.	1.
HOUSING(CN2)	22~18AWG: STO-21T-250N	107	
	18~14AWG: STO-61T-250N	J.S.T.	35

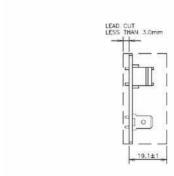
MATCHING PINS & TOOL (NOT INCLUDED WITH THE PRODUCT):

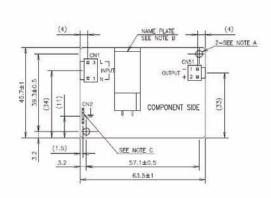
PART DESCRIPTION	PART NAME	MANUFACT.	QTY
TERMINAL PINS	SVH-21T-P1.1	107	4
	BVH-21T-P1.1	J.5.T.	
HAND CRIMPING TOOL	YC-160R	J.S.T.	-
PART DESCRIPTION	PART NAME	MANUFACT.	QTY
TERMINAL PINS	SVH-41T-P1.1	107	
(ACTION SECTION SEC	BVH-41T-P1.1	J.S.T.	+
HAND CRIMPING TOOL	YC-930R		
WWW. State Control of the Control of	YC-931R	J.S.T.	

NOTES

- A: 2-03.5 HOLES ARE FOR CUSTOMER'S CHASSIS MOUNTING HOLES, ALL MUST BE SCREWED IN ORDER TO CONFORM THE VIBRATION SPEC.
- B: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT, COUNTRY OF MANUFACTURE AND SAFETY MARKING (FOR ONLY APPROVED PRODUCTS) ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.
- C: CN2 IS FOR SAFETY CROUND (FG) CONNECTION IN CLASS I.
- D: TO KEEP THE DISTANCE MORE THAN 4mm BETWEEN PCB EDGE AND CUSTOMER'S CHASSIS.

Outline Drawing ZWS15C (Open Frame)





CONNECTORS USED:

PART DESCRIPTION	PART NAME	MANUFACT.	QTY
PIN HEADER (INPUT SIDE CN1)	82P3-VH	J.S.T.	1.
PIN HEADER (OUTPUT SIDE CN51)	B2P-VH	JST	11.4

MATCHING HOUSINGS (NOT INCLUDED WITH THE PRODUCT):

PART DESCRIPTION	PART NAME	MANUFACT.	QTY
SOCKET HOUSING (CN1)	VAR-2/VHR-3N	J.S.T.	1
SOCKET HOUSING (CN51)	VHR-2N	J.S.T.	13
HOUSING(CN2)	22~18AWG: STO-21T-250N	184	Tan.
	18~14AWG: STO-61T-250N	J.S.T.	45

MATCHING PINS & TOOL (NOT INCLUDED WITH THE PRODUCT):

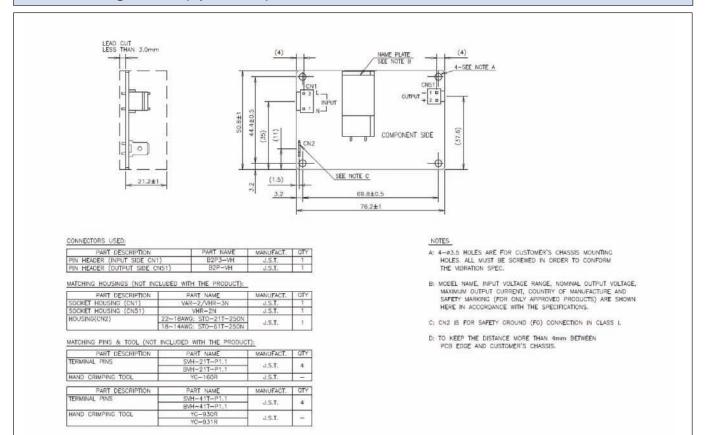
PART DESCRIPTION	PART NAME	MANUFACT.	QTY
TERMINAL PINS	SVH-21T-P1.1	J.S.T.	4
	BVH-21T-P1.1		
HAND CRIMPING TOOL	YC-160R	J.S.T.	-
PART DESCRIPTION	PART NAME	MANUFACT.	OTY
TERMINAL PINS	SVH-41T-P1.1	J.S.T.	4
	BVH-41T-P1.1		
HAND CRIMPING TOOL	YC-930R	J.S.T.	-
	YC-931R		

NOTES

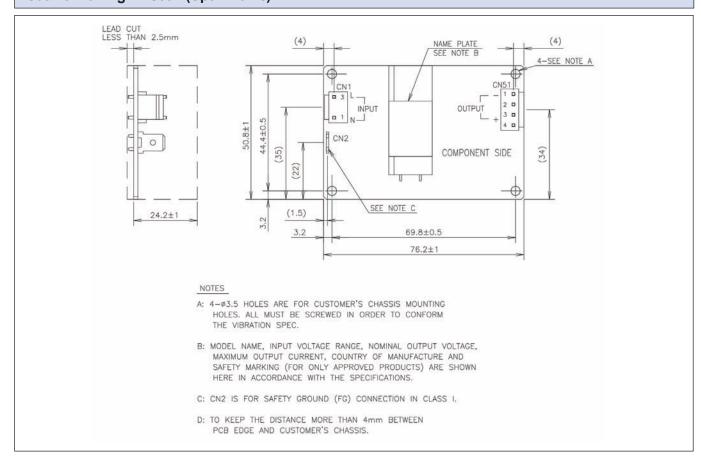
- A: 2-93.5 Holes are for customer's chassis mounting holes, all must be screwed in order to conform the vibration spec.
- B: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT, COUNTRY OF MANUFACTURE AND SAFETY MARKING (FOR ONLY APPROVED PRODUCTS) ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.
- C: CN2 IS FOR SAFETY GROUND (FG) CONNECTION IN CLASS I.
- D: TO KEEP THE DISTANCE MORE THAN 4mm BETWEEN PCB EDGE AND CUSTOMER'S CHASSIS.



Outline Drawing ZWS30C (Open Frame)

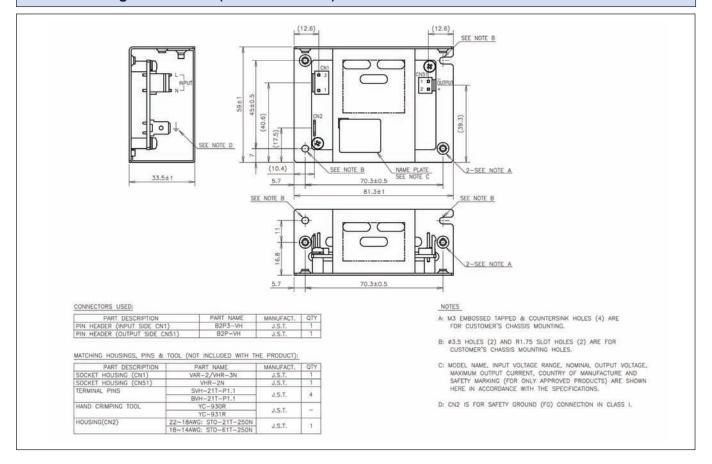


Outline Drawing ZWS50C (Open Frame)

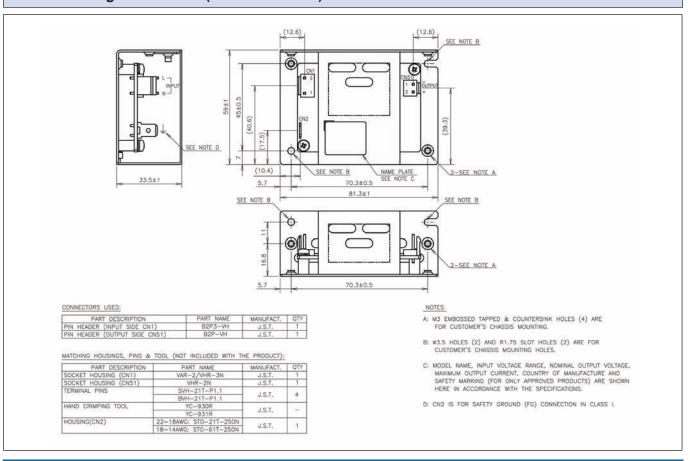




Outline Drawing ZWS10C-xx/A (L-bracket & cover)

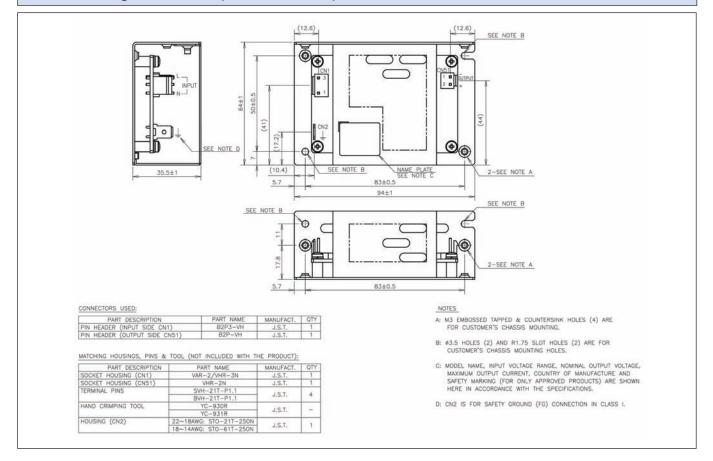


Outline Drawing ZWS15C-xx/A (L-bracket & cover)

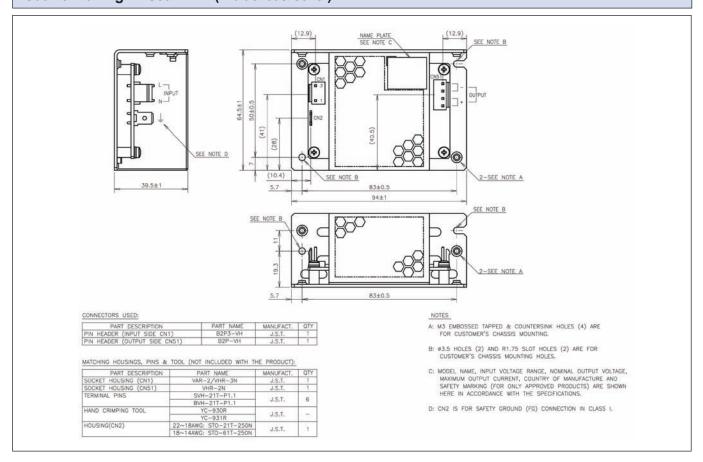




Outline Drawing ZWS30C-xx/A (L-bracket & cover)

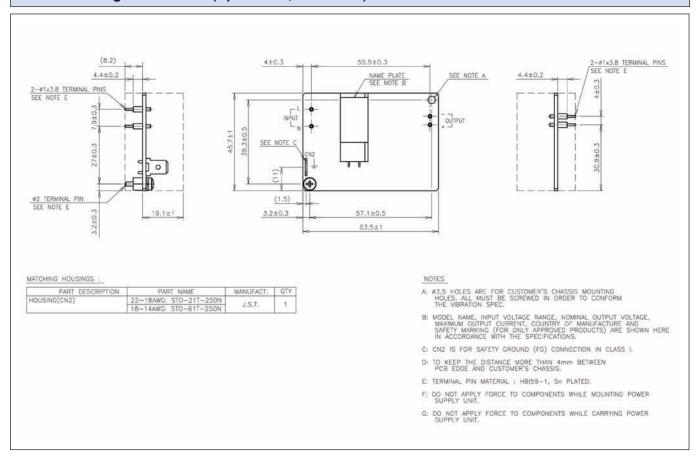


Outline Drawing ZWS50C-xx/A (L-bracket & cover)

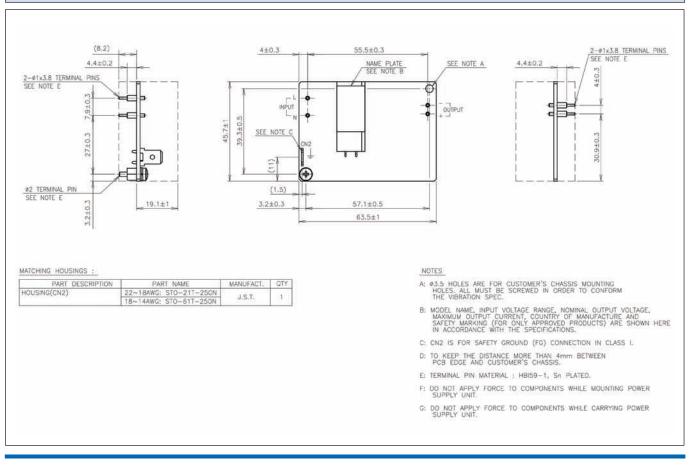




Outline Drawing ZWS10C-xx/P (Open frame, Pcb mount)

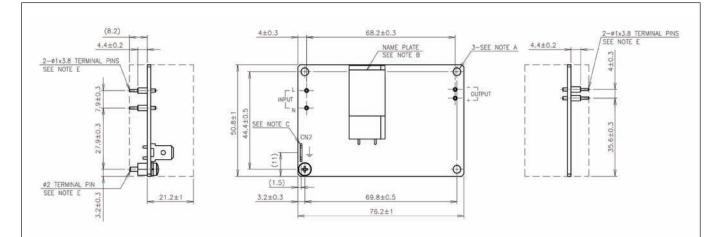


Outline Drawing ZWS15C-xx/P (Open frame, Pcb mount)





Outline Drawing ZWS30C-xx/P (Open frame, Pcb mount)



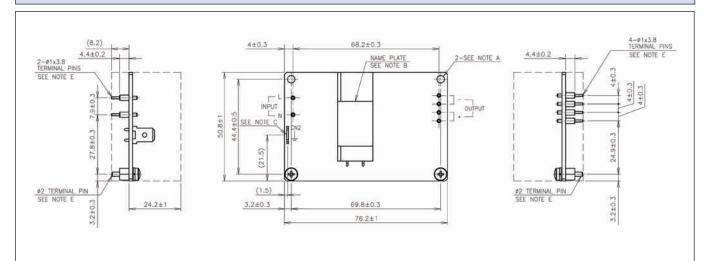
MATCHING HOUSINGS :

PART DESCRIPTION	PART NAME	MANUFACT.	QTY
HOUSING(CN2)	22~18AWG: STO-21T-250N	4 IST	.12
	18~14AWG: STO-61T-250N		

NOTES

- A: 3-03.5 HOLES ARE FOR CUSTOMER'S CHASSIS MOUNTING HOLES. ALL MUST BE SCREWED IN ORDER TO CONFORM THE VIBRATION SPEC.
- B: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE,
 MAXIMUM OUTPUT CURRENT, COUNTRY OF MANUFACTURE AND
 SAFETY MARKING (FOR ONLY APPROVED PRODUCTS) ARE SHOWN HERE
 IN ACCORDANCE WITH THE SPECIFICATIONS.
- C: CNZ IS FOR SAFETY GROUND (FG) CONNECTION IN CLASS I.
- D: TO KEEP THE DISTANCE MORE THAN 4mm BETWEEN PCB EDGE AND CUSTOMER'S CHASSIS.
- E: TERMINAL PIN MATERIAL : HBI59-1, Sn PLATED.
- F: DO NOT APPLY FORCE TO COMPONENTS WHILE MOUNTING POWER SUPPLY UNIT.
- G: DO NOT APPLY FORCE TO COMPONENTS WHILE CARRYING POWER SUPPLY UNIT.

Outline Drawing ZWS50C-xx/P (Open frame, Pcb mount)



MATCHING HOUSINGS :

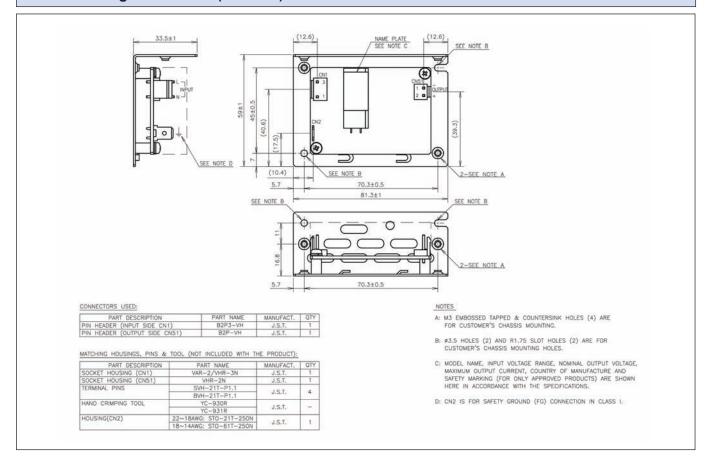
1	PART DESCRIPT	ON PART NAME	MANUFACT.	QTY
1	HOUSING(CN2)	22~18AWG: STO-21T-250N	J.S.T.	
1		18~14AWG: STO-61T-250N		1.40

NOTES

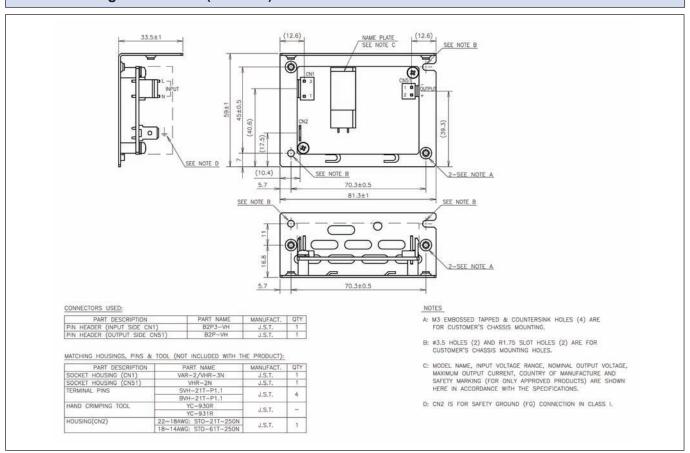
- A: 2-03.5 HOLES ARE FOR CUSTOMER'S CHASSIS MOUNTING HOLES, ALL MUST BE SCREWED IN ORDER TO CONFORM THE VIBRATION SPEC:
- B: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT, COUNTRY OF MANUFACTURE AND SAFETY MARKING (FOR ONLY APPROVED PRODUCTS) ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.
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- D: TO KEEP THE DISTANCE MORE THAN 4mm BETWEEN PCB EDGE AND CUSTOMER'S CHASSIS.
- E: TERMINAL PIN MATERIAL : HBI59-1, Sn PLATED.
- F: DO NOT APPLY FORCE TO COMPONENTS WHILE MOUNTING POWER SUPPLY UNIT.
- G: DO NOT APPLY FORCE TO COMPONENTS WHILE CARRYING POWER SUPPLY UNIT.



Outline Drawing ZWS10C-xx/L (L-bracket)

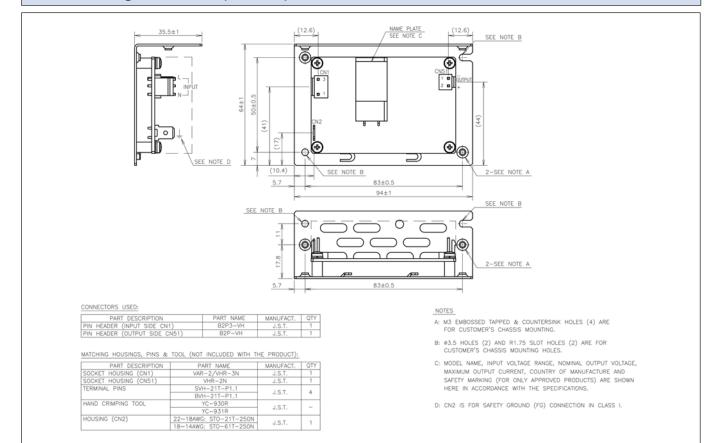


Outline Drawing ZWS15C-xx/L (L-bracket)





Outline Drawing ZWS30C-xx/L (L-bracket)



Outline Drawing ZWS50C-xx/L (L-bracket)

