



Typical Features

- ◆ Wide input voltage range: 36-75VDC
- ◆ High efficiency up to 88%
- ◆ Low no-load power consumption
- ◆ Operating Temperature: -40°C to +85°C
- ◆ High isolation voltage, input-output 1500VDC, input-case 1500VDC
- ◆ Protection: input under voltage, output over current, over voltage, short circuit, over temp
- ◆ Standard 1/16 brick

Conform to CE Standard

ZED75-48S05 high efficiency dc-dc converter, rated input voltage 48VDC, output 5V/75W, no minimum load, wide input voltage 36-75VDC, regulated single output, high isolation insulation voltage, allowing operating temperature up to 85 °C, with input under-voltage protection, output over-current protection, over-voltage protection, over-temperature protection, short-circuit protection, remote control and remote compensation, output voltage regulation and other functions.

Typical Product List

Part No	Input voltage range (VDC)	Output power (W)	Output voltage (VDC)	Output current (A)	Ripple & Noise (mV)	Full load efficiency(%) Min/Typ.	Note
ZED75-48S05C	36-75	75	5	15	100	86/88	Standard positive logic
ZED75-48S05N							Standard negative logic
ZED75-48S05C-H							Heatsink positive logic
ZED75-48S05N-H							Heatsink negative logic

Input Specification

Item	Operating conditions	Min.	Typ.	Max.	Unit	
Max input current	36V input voltage, full load output	--	--	3	A	
No load input current	Rated input voltage	--	--	15	mA	
Input surge voltage (1sec. max.)	Inputs above this range may cause permanent damage	-0.7	--	85	VDC	
Start up voltage		--	--	36		
Input under voltage protection	No-load test, full-load test will have overcurrent protection in advance	--	--	34		
Control Pin(CNT)	Positive logic: CNT is suspended or connected to 3.5-15V to turn on, connected to 0-1.2V to turn off					Reference voltage-VIN

Output Specification

Item	Working conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Nominal input voltage, 0%-100% load	--	±0.2	±1.0	%

Line Regulation	Full load, input voltage from low to high	--	±0.1	±0.5	
Load Regulation	Nominal input voltage, 10%-100% load	--	±0.1	±0.5	
Transient recovery time	25% load step change (step rate 1A/50uS)	--	200	250	uS
Transient Response Deviation		-5	--	5	%
Temperature Drift Coefficient	Full load	-0.02	--	+0.02	%/°C
Ripple & Noise	20M bandwidth, external capacitor above 470uF	--	50	100	mVp-p
Output voltage adjustment (TRIM)		-20	--	+10	%
Output voltage remote compensation (Sense)		--	--	105	%
Over temp protection	Maximum temperature of product metal substrate surface	105	115	125	°C
Output overcurrent protection	Full input voltage range	16	--	19	A
Output short circuit protection		Hiccup, continuous, self-recovery			

General Specification

Item	Operating conditions		Min.	Typ.	Max.	Unit
Isolation Voltage	I/P-O/P	Test 1min, leakage current < 5mA	--	--	1500	VDC
	I/P-Case	Test 1min, leakage current < 5mA	--	--	1500	VDC
Insulation resistance	I/P-O/P	Insulation voltage 500VDC	10	--	--	MΩ
Switching frequency				180	--	KHz
MTBF			150		--	K hours

Environmental Characteristics

Item	Operating conditions		Min.	Typ.	Max.	Unit
Operating Temperature	See temperature derating curve		-40	--	+85	°C
Storage Humidity	No condensing		5	--	95	%RH
Storage Temperature			-40	--	+125	°C
Soldering resistance of pins	The solder joint is 1.5mm away from the shell, and the soldering time< 1.5S		--	--	+350	
Cooling requirements			EN60068-2-1			
Dry heat requirement			EN60068-2-2			
Damp heat requirement			EN60068-2-30			
Shock and vibration			IEC/EN 61373 Body 1 Class B			

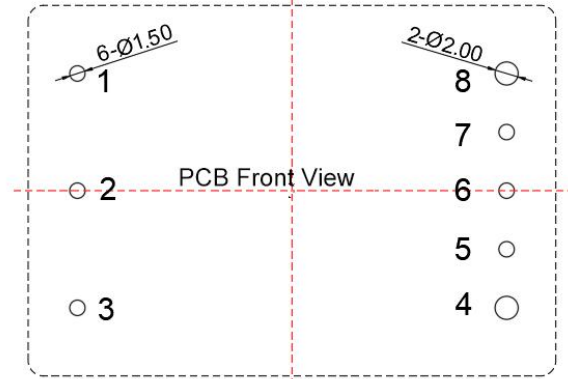
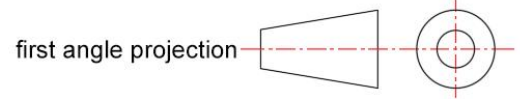
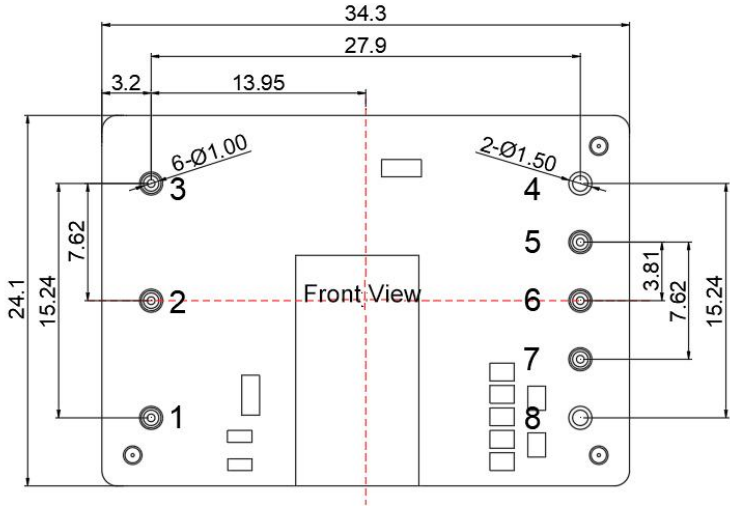
EMC Characteristics (EN50155)

EMI	CE	EN50121-3-2	150kHz-500kHz 79dBuV		
		EN55016-2-1	500kHz-30MHz 73dBuV		
	RE	EN50121-3-2	30MHz-230MHz 40dBuV/m at 10m		
		EN55016-2-1	230MHz-1GHz 47dBuV/m at 10m		
EMS	ESD	EN50121-3-2	Contact ±2KV/Air ±4KV		perf. Criteria A
	RS	EN50121-3-2	10V/m		perf. Criteria A
	EFT	EN50121-3-2	±2kV 5/50ns 5kHz		perf. Criteria A
	Surge	EN50121-3-2	line to line ± 1KV (42Ω, 0.5μF)		perf. Criteria A
	CE	EN50121-3-2	0.15MHz-80MHz 10 Vr.m.s		perf. Criteria A

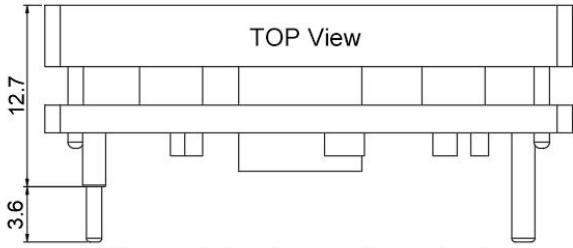
Physical Characteristics

Case Materials	Metal bottom shell
Cooling method	Conduction cooling or forced air cooling
Product Weight	Standard 21g

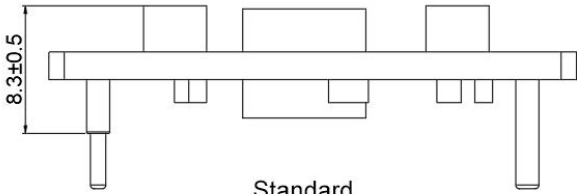
Dimension and Pin-Out



Recommended PCB slot size



Standard+Cooling aluminum sheet
34.3mm*24.1mm*12.7mm



Standard
34.3mm*24.1mm*12.7mm

Note:

Unit:mm

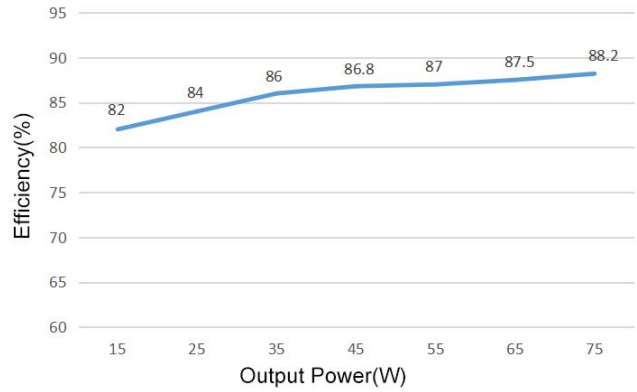
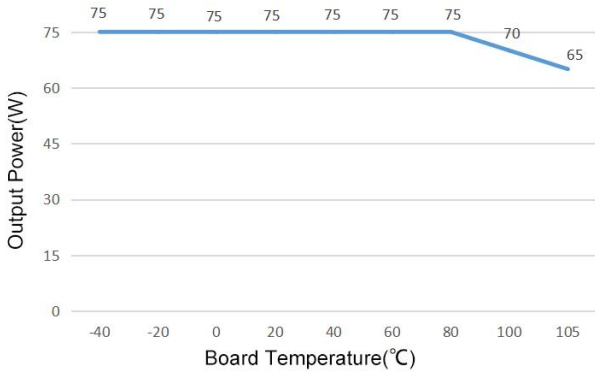
Pin 1,2,3,5,6,7 dia:1.00

Pin 4,8 dia:1.50

general tolerance:X.X±0.5, X.XX±0.1

	1	2	3	4	5	6	7	8
Pin-Out	Vin+	CNT	Vin-	Vout-	-S	TRIM	+S	Vout+

Product Characteristic Curve



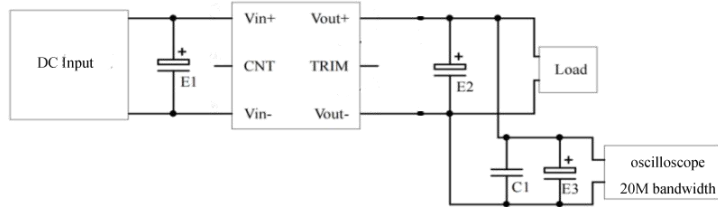
Note:

- Both the temperature derating curve and the efficiency curve are tested with typical values;
- The temperature derating curve is tested according to our laboratory test conditions. If the actual environmental conditions used by customers are inconsistent, it is necessary to ensure that the temperature of the aluminum casing of the product does not exceed 105 °C, and it can be used within any rated load range.

Design Reference

1. Ripple & Noise

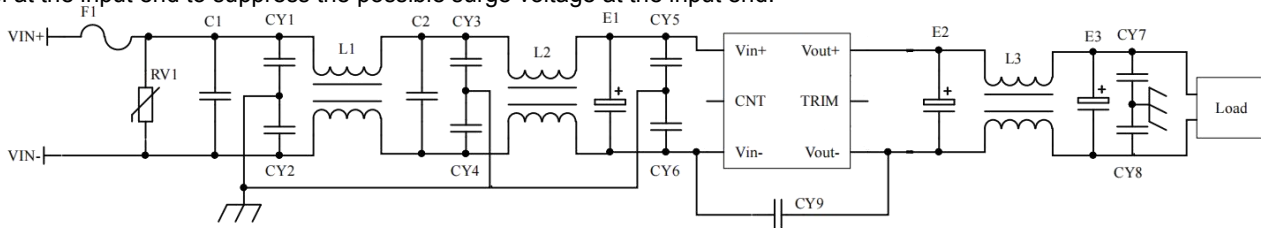
All DC/DC converters of this series are tested according to the test circuit recommended in the following figure before leaving the factory.



Output voltage	capacitor value		
	E1 (μF)	E2 (μF)	E3 (μF)
3.3VDC	100	1000	10
5VDC		680	
12VDC		220	
.....	68	68	1
48VDC			
110VDC			

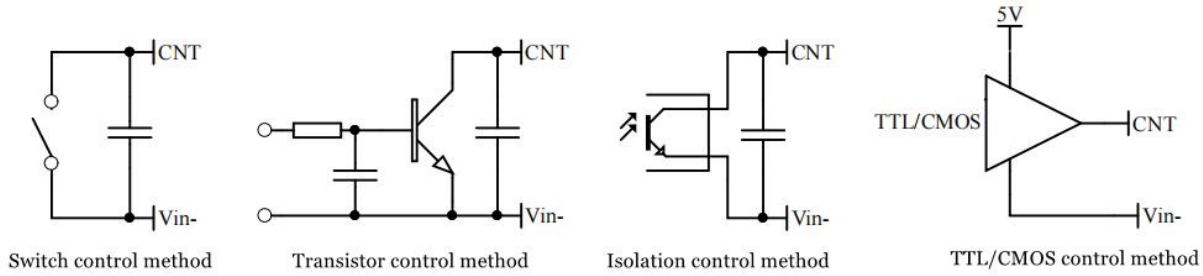
2. Recommended application circuit

If customer does not use the circuit recommended by our company, please be sure to connect an electrolytic capacitor of at least 100μF in parallel at the input end to suppress the possible surge voltage at the input end.



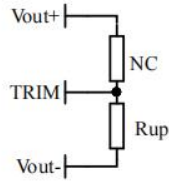
F1	T6.3A/250Vac fusing
RV1	10D100V Varistor
C1,C2	105/250V Polyester Film Capacitor
CY1,CY2,CY3,CY4,CY5,CY6	102/250Vac Safety Y2 capacitor
CY7,CY8	103/2KV ceramic capacitor
CY9	471/250Vac safety Y2 capacitor
E1	100μF/100V Electrolytic Capacitor
E2 , E3	470μF/16V Solid state Capacitor
L1,L2	inductance is greater than 6mH, and the overcurrent 3A temperature rise is less than 25 °C
L3	inductance is greater than 100uH, and the overcurrent 15A temperature rise is less than 25 °C

3. Remote control terminal (CNT) control method application recommendation



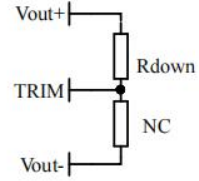
4. Use of TRIM and calculation of TRIM resistance

The relationship between output change voltage ΔU and resistance is as follows:



Voltage up regulation: add resistor R_{up} between Trim and output negative

$$R_{up} = 12.75 / \Delta U - 5.1 \text{ (K}\Omega\text{)}$$



Voltage Down: Add resistor R_{down} between Trim and output negative

$$R_{down} = 10.2 * (5 - 1.25 \Delta U) / \Delta U - 5.1 \text{ (K}\Omega\text{)}$$

5. This product does not support the use of direct parallel connection to increase the power. If you need to use it in parallel, please consult our technical staff.

Others

- 1 The warranty period of this product is two years. During the normal damage, it will be repaired free of charge. Damages caused by errors in the use method or manufacturing technology, a paid service is provided.
2. Our company can provide product customization and matching filter modules. For details, please contact our technical staff directly.

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