



FEATURES

- ◆ Wide (2:1) Input Range
- ◆ Short Circuit Protection (automatic recovery)
- ◆ 1500VDC Isolation
- ◆ Operating Temperature: -40°C ~ +85°C
- ◆ Small Footprint
- ◆ Ultra-compact SIP-8 packaged
- ◆ Internal SMD construction
- ◆ Remote On/Off control
- ◆ Excellent load and line regulation

MODEL SELECTION

WRA^①24^②12^③Y^④S^⑤-10W^⑥

- ① Product Series ② Input Voltage
③ Output Voltage ④ Wide (2:1) Input Range
⑤ SIP Package Style ⑥ Rated Power

APPLICATIONS

The WRA_YS-10W & WRB_YS-10W Series are specially designed for applications where a wide range input voltage power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is wide range (Voltage range ≤ 2:1);
- 2) Where isolation is necessary between input and output (Isolation voltage ≤ 1500VDC);
- 3) Where the regulation of the Output voltage and the output



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SELECTION GUIDE

Order code	Input		Output		Efficiency (% Typ.)
	Voltage(VDC)		Voltage (VDC)	Current(mA)	
	Nominal	Range		Max.	
WRB0503YS-10W	5	4.5-9	3.3	2400	76
WRB0505YS-10W	5	4.5-9	5	2000	81
WRB0512YS-10W	5	4.5-9	12	833	83
WRB0515YS-10W	5	4.5-9	15	667	76
WRA0505YS-10W	5	4.5-9	±5	±1000	81
WRA0512YS-10W	5	4.5-9	±12	±416	81
WRA0515YS-10W	5	4.5-9	±15	±333	76
WRB1203YS10W	12	9-18	3.3	2400	81
WRB1205YS-10W	12	9-18	5	2000	83
WRB1212YS-10W	12	9-18	12	833	74
WRB1215YS-10W	12	9-18	15	667	76
WRA1205YS-10W	12	9-18	±5	±1000	81
WRA1212YS-10W	12	9-18	±12	±416	81
WRA1215YS-10W	12	9-18	±15	±333	76
WRB2403YS-10W	24	18-36	3.3	2400	81
WRB2405YS-10W	24	18-36	5	2000	83
WRB2412YS-10W	24	18-36	12	833	74
WRB2415YS-10W	24	18-36	15	667	76
WRA2405YS-10W	24	18-36	±5	±1000	81
WRA2412YS-10W	24	18-36	±12	±416	81
WRA2415YS-10W	24	18-36	±15	±333	85
WRB4803YS-10W	48	36-75	3.3	2400	83
WRB4805YS-10W	48	36-75	5	2000	85
WRB4812YS-10W	48	36-75	12	833	74
WRB4815YS-10W	48	36-75	15	667	78
WRA4805YS-10W	48	36-75	±5	±1000	80
WRA4812YS-10W	48	36-75	±12	±416	80
WRA4815YS-10W	48	36-75	±15	±333	85

NOTE:

Case material: non-conductive plastic

Weight: 4.8g (0.17oz)

Input Specifications

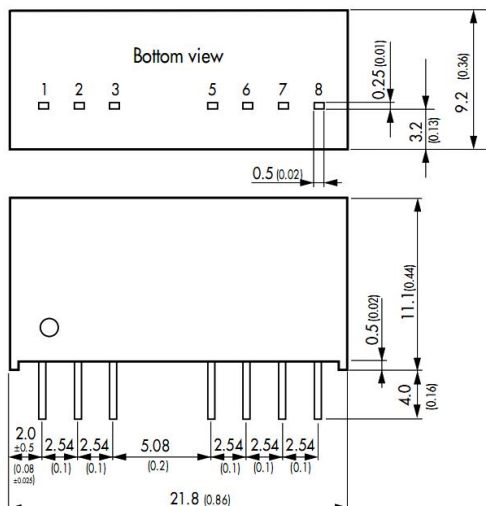
Parameter	Conditions	Max.
Input current at full load (nominal input voltage)	4.5-9 Vin models:	820 mA max.
	9-18 Vin models:	330 mA max.
	18-36 Vin models:	170 mA max.
	36-75 Vin models:	85 mA max.
Surge voltage (100 msec. max.)	4.5-9 Vin models:	15 V max.
	9-18 Vin models:	36 V max.
	18-36 Vin models:	50 V max.
	36-75 Vin models:	100 V max.
Input voltage variation (dv/dt)	5 V/ms, max. (complies with ETS300 132 part 4.4)	
Input filter	capacitor type (see application note for compliance to EN 55022 class A/B)	
Start up time	< 1ms at nominal input and resistive load	

Output Specifications		
Parameter	Conditions	
Voltage set accuracy	$\pm 1\%$ max	
Regulation	– Input variation Vin min. to Vin max.	0.2 % max.
	– Load variation 5 – 100% single output models:	0.5 % max.
	dual output models:	1.0 % max. balanced load
	– Load variation 0 – 100% single output models:	1.0 % max.
	dual output models:	1.0 % max. balanced load
	– Load cross regulation 25/100%	5.0 % max. (dual output models)
Minimum load	0% of rated max. load	
Temperature coefficient	0.1 %/K	
Ripple and noise (20 MHz Bandwidth)	75 mVpk-pk max.	
Start up time	– Power On	30 ms typ.
(constant resistive load)	– Remote On	30 ms typ.
Transient response setting time (25% load step change)	500 μ s typ	
Temperature coefficient	$\pm 0.1\%$ /°C	
Short circuit protection	continuous, automatic recovery	
Capacitive load	3.3 VDC / 5 VDC output models:	1'760 μ F max. / 1'000 μ F max.
	12 VDC / 15 VDC output models:	170 μ F max. / 110 μ F max.
	± 5 VDC / ± 15 VDC output models:	± 470 μ F max. / ± 100 μ F max.
	± 15 VDC output models:	± 47 μ F max.
General Specifications		
Parameter	Conditions	
Temperature ranges	– Operating	– 40 °C ... + 85 °C (no derating)
	– Case temperature	+100 °C max.
	– Storage	– 55 °C ... + 125 °C
Load derating	3.5 %/K above 70°C	
Humidity (non condensing)	95 % rel. H max.	
Reliability, calculated MTBF (MIL-HDBK-217F ground benign)	>2.4 Mio h @ 25°C	
Isolation voltage (60 sec)	– Input/Output	1'500 VDC
Isolation capacity	– Input/Output	1000 pF max.
Isolation resistance	– Input/Output (500 VDC)	>10 GOhm
Switching frequency	100 kHz (PWM)	
Remote On/Off	– On:	open or high impedance
	– Off:	2...4 mA current applied via 1KOhm resistor
	– Off stand by input current	2.5 mA max.

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

OUTLINE DIMENSIONS & FOOTPRINT DETAILS

MECHANICAL DIMENSIONS



Note:

Unit:mm[inch]

Pin section tolerances:±0.10mm[±0.004inch]

General tolerances:±0.25mm[±0.010inch]

FOOTPRINT DETAILS

Pin	Single	Dual
1	-Vin(GND)	-Vin(GND)
2	+Vin(Vcc)	+Vin(Vcc)
3*	Remote On/Off	Remote On/Off
5	No function	No function
6	+Vout	+Vout
7	0V	Common
8	No function	-Vout

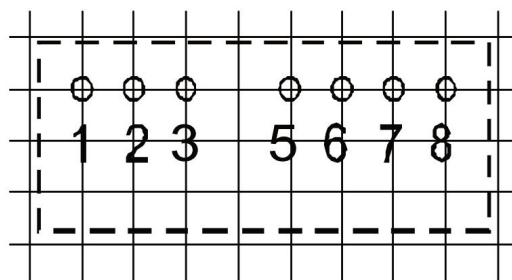
Note:specifications can be changed any time without notice.
*:this pin can be added according to customer's need.

When the environment temperature is higher than 71℃, the product output power should be less then 60% of the rated power.

No parallel connection or plug and play.

RECOMMENDED FOOTPRINT

Dual/Single Output

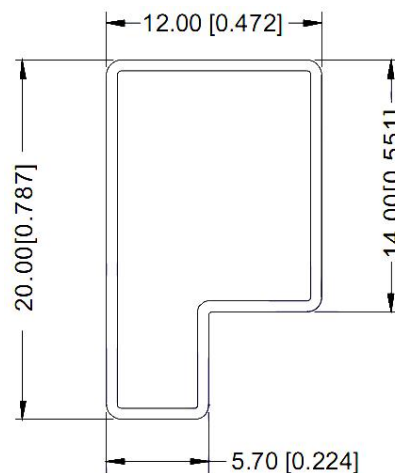


RECOMMENDED FOOTPRINT

Top view grid:2.54mm(0.1inch)

diameter:1.00mm(0.039inch)

TUBE OUTLINE DIMENSIONS



Note:

Unit :mm[inch]

General tolerances:±0.50mm[±0.020inch]

L=530mm[20.866inch] Tube Quantity: 22pcs

L=220mm[8.661inch] Tube Quantity:8pcs

Note:

1. The load shouldn't be less than 10%, otherwise ripple will increase dramatically.
2. Operation under 10% load will not damage the converter; However, they may not meet all specification listed.
3. All specifications measured at Ta=25℃, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
4. In this data sheet, all the test methods of indications are based on corporate standards.
5. Only typical models listed, other models may be different, please contact our technical person for more details.