

Step-Down 24V to 12V 20A DC-DC Converters 240W

Features:

1. 100% full power & stable current output
2. 100% Imported components
3. Wide input voltage from 18-36Vdc
4. 100% waterproof & anti-shock protection, Ultra compact size, light weight
5. Industry grade step-down converter, efficiency up to 96%
6. Waterproof level: IP68
7. According CE(EN61000) / RoHS design
8. Die-cast aluminum shell, epoxy potting, Cooling by free air convection,
9. Protections: Over-current, Over-temperature, and Short-circuit, Auto-recovery when device is back to normal operating
10. Non-Isolated Module
11. 1 year warranty



WG-24S12 series is a compact size high reliability power converter offered by SZWENGAO, It features wide input voltage, low power consumption, high efficiency, high reliability. It can work safely and reliability in $-40^{\circ}\text{C} \sim 80^{\circ}\text{C}$. It widely used in industrial, automotive, instruments, telecommunication and civil applications.

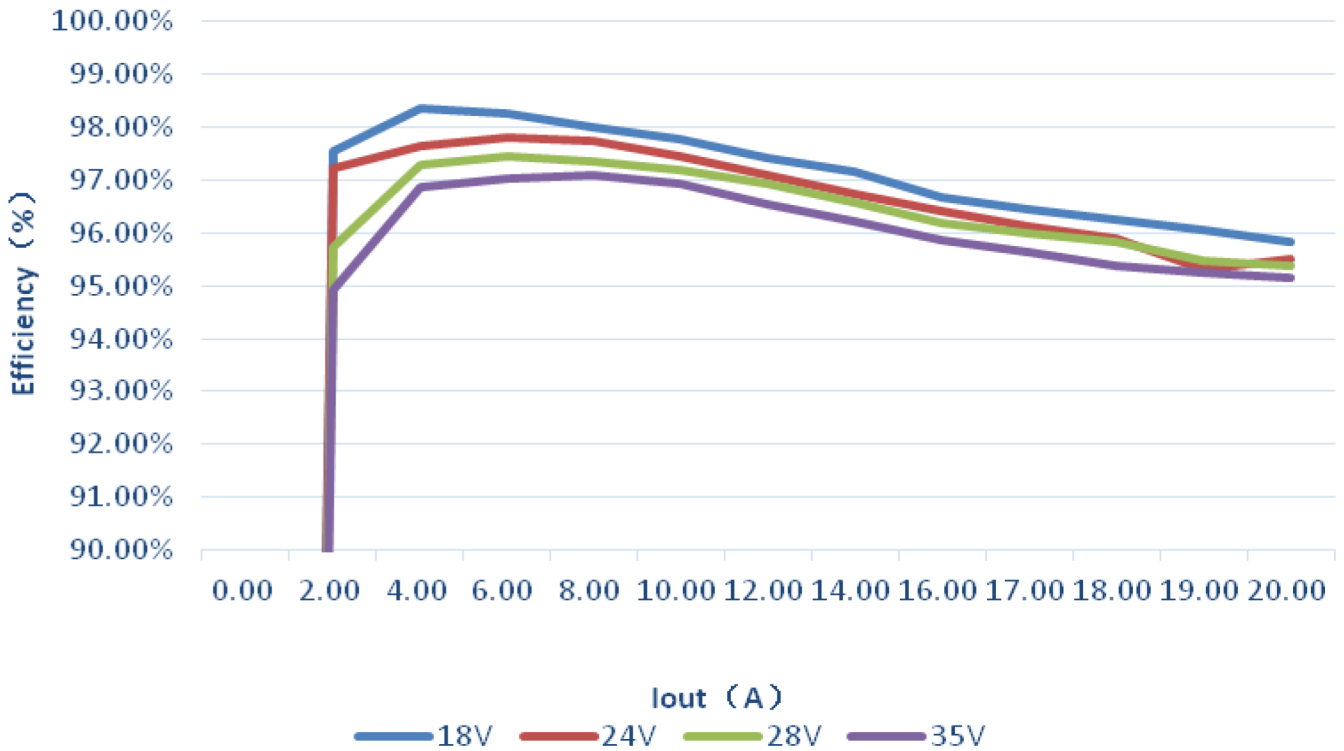
Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input voltage range	--	18	24	36	VDC
Input current	--	16	10.4	6.9	A
No-load loss	--	40	60	70	mA
Input filter	--	Without capacitances			
Hot plug	--	Unavailable			
Recommended input fuse	--	External connect 20A fuse			

Output Specifications

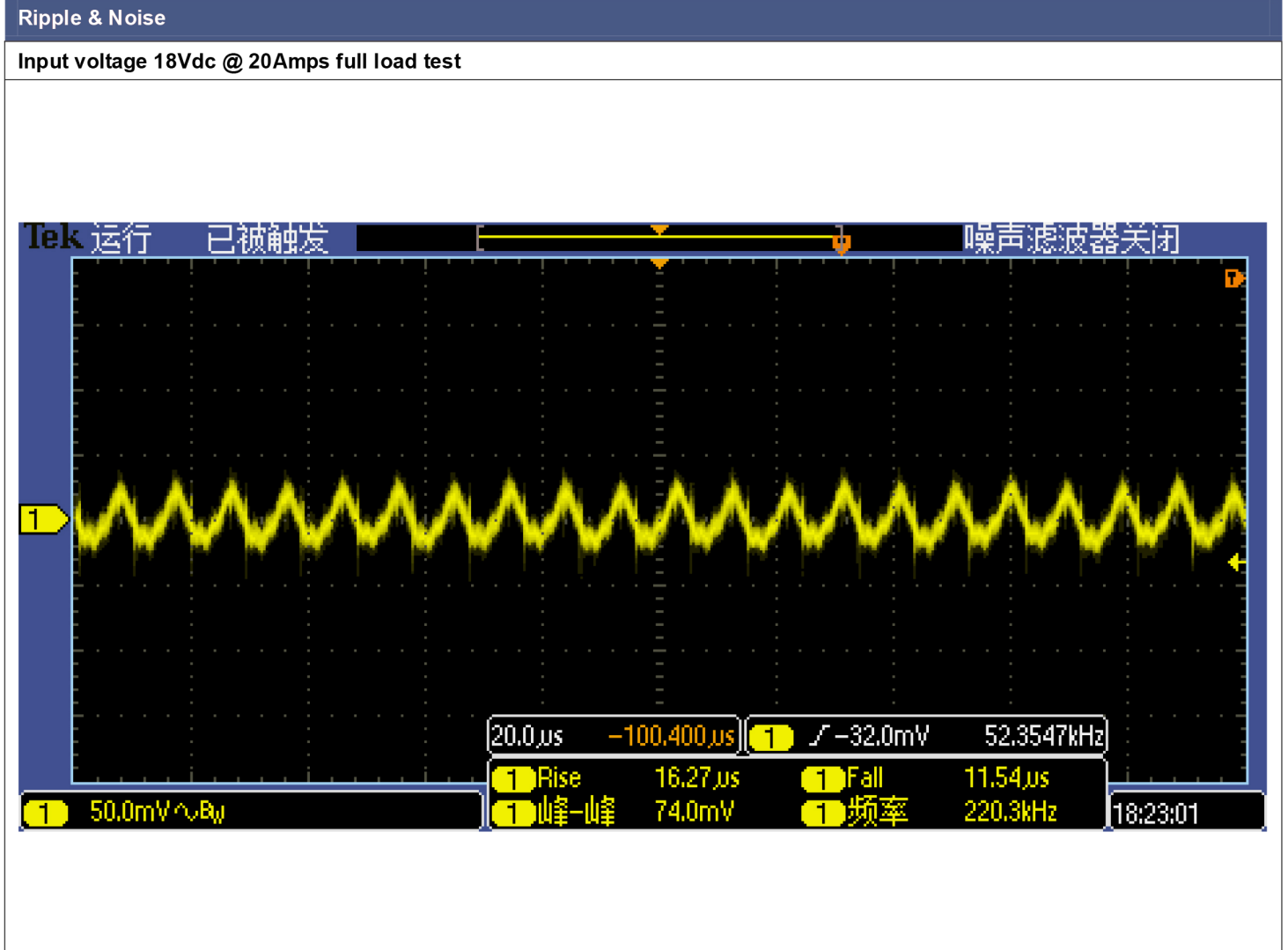
Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output voltage accuracy	Full load test, input volt range	--	± 1	± 2	%
Line regulation	Full load	--	± 0.5	± 1	%
Load regulation	10%~100% load	--	± 0.5	± 1	%
Ripple & Noise*	20 MHz bandwidth	120	130	150	mVp-p
Temperature coefficient	$-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$	--	--	± 0.03	%/ $^{\circ}\text{C}$
Over temperature protection	Chip (built-in protection)	--	130	--	$^{\circ}\text{C}$
Short-circuit protection	--	Self-recovery, when device is back to normal operating			
Over current protection	--	20A~25A @ 24Vin self-recovery			
Transient response deviation	Input 24V, 25-50% load step	--	60	64	mV
Transient recovery time	Input 24V, 25-50% load step	--	0.4	0.5	mS
Thermal impedance	--	--	5	--	$^{\circ}\text{C}/\text{W}$

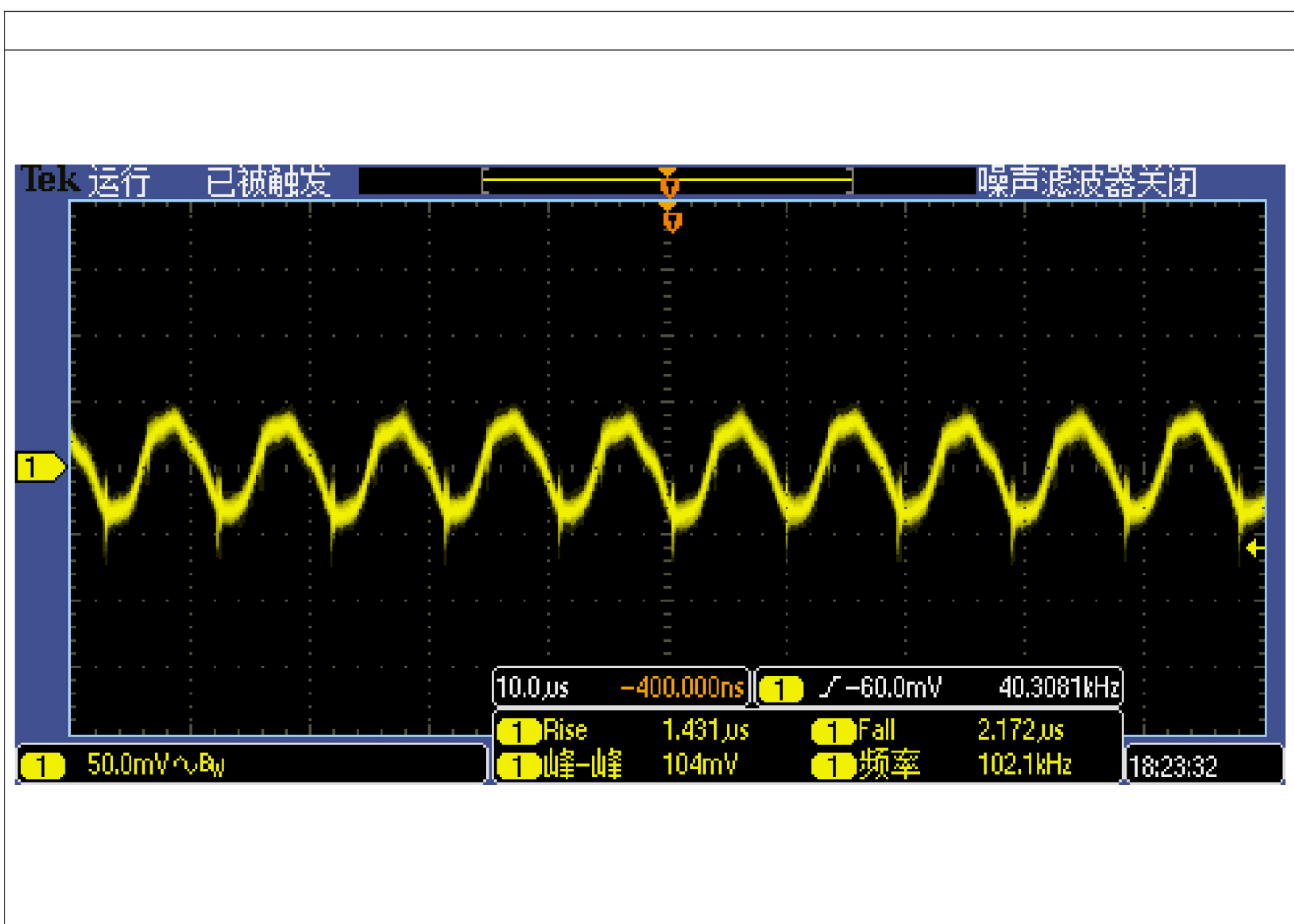
Efficiency



Vin (V)	Iin (A)	Iout (A)	Vout (V)	Pout (W)	Losses (W)	Efficiency (%)
18.47	0.03	0.00	12.34	0.00	0.55	0.00%
18.45	1.37	2.00	12.33	24.66	0.62	97.56%
18.42	2.72	4.00	12.32	49.28	0.82	98.36%
18.39	4.09	6.00	12.32	73.92	1.30	98.28%
18.37	5.47	8.00	12.31	98.48	2.00	98.01%
18.34	6.86	10.00	12.30	123.00	2.81	97.76%
18.32	8.27	12.00	12.30	147.60	3.91	97.42%
18.29	9.69	14.00	12.30	172.20	5.03	97.16%
18.26	11.13	16.00	12.28	196.48	6.75	96.68%
18.25	11.86	17.00	12.28	208.76	7.69	96.45%
18.24	12.59	18.00	12.28	221.04	8.60	96.25%
18.22	13.32	19.00	12.27	233.13	9.56	96.06%
18.21	14.06	20.00	12.27	245.40	10.63	95.85%
24.37	0.03	0.00	12.34	0.00	0.73	0.00%
24.39	1.04	2.00	12.33	24.66	0.71	97.22%
24.38	2.07	4.00	12.32	49.28	1.19	97.65%
24.36	3.10	6.00	12.31	73.86	1.66	97.81%
24.34	4.14	8.00	12.31	98.48	2.29	97.73%
24.32	5.19	10.00	12.30	123.00	3.22	97.45%
24.30	6.25	12.00	12.29	147.48	4.40	97.11%
24.28	7.32	14.00	12.28	171.92	5.81	96.73%
24.26	8.40	16.00	12.28	196.48	7.30	96.42%
24.25	8.95	17.00	12.27	208.59	8.45	96.11%
24.24	9.50	18.00	12.27	220.86	9.42	95.91%
24.22	10.10	19.00	12.27	233.13	11.49	95.30%
24.22	10.60	20.00	12.26	245.20	11.53	95.51%

Vin (V)	lin (A)	lout (A)	Vout (V)	Pout (W)	Losses (W)	Efficiency (%)	Vin (V)	lin (A)	lout (A)	Vout (V)	Pout (W)	Losses (W)	Efficiency (%)
28.39	0.03	0.00	12.34	0.00	0.85	0.00%	35.12	0.04	0.00	12.34	0.00	1.40	0.00%
28.31	0.91	2.00	12.33	24.66	1.10	95.72%	35.11	0.74	2.00	12.33	24.66	1.32	94.91%
28.30	1.79	4.00	12.32	49.28	1.38	97.28%	35.09	1.45	4.00	12.32	49.28	1.60	96.85%
28.28	2.68	6.00	12.31	73.86	1.93	97.45%	35.08	2.17	6.00	12.31	73.86	2.26	97.03%
28.26	3.58	8.00	12.31	98.48	2.69	97.34%	35.07	2.89	8.00	12.30	98.40	2.95	97.09%
28.25	4.48	10.00	12.30	123.00	3.56	97.19%	35.05	3.62	10.00	12.30	123.00	3.88	96.94%
28.23	5.39	12.00	12.29	147.48	4.68	96.92%	35.04	4.36	12.00	12.29	147.48	5.29	96.53%
28.21	6.31	14.00	12.28	171.92	6.09	96.58%	35.03	5.10	14.00	12.28	171.92	6.73	96.23%
28.19	7.24	16.00	12.27	196.32	7.78	96.19%	35.01	5.85	16.00	12.27	196.32	8.49	95.86%
28.18	7.71	17.00	12.27	208.59	8.68	96.01%	35.01	6.23	17.00	12.27	208.59	9.52	95.63%
28.17	8.18	18.00	12.27	220.86	9.57	95.85%	35.00	6.61	18.00	12.26	220.68	10.67	95.39%
28.17	8.66	19.00	12.26	232.94	11.01	95.49%	34.99	6.99	19.00	12.26	232.94	11.64	95.24%
28.16	9.13	20.00	12.26	245.20	11.90	95.37%	34.99	7.36	20.00	12.25	245.00	12.53	95.14%





General Specifications					
Item	Operating Conditions	Min.	Typ.	Max.	Unit
Working temperature	--	-40	--	80	°C
Storage temperature	--	-55	--	125	°C
Storage humidity	--	--	--	95	%RH
Switching frequency	100% load, input voltage range	98	100	105	KHz
Lifetime		--	--	100,000	Hours

Physical Specifications	
Casing material	Die-cast aluminum shell
Input cable (positive "+")	Red ; 16AWG; 16.5cm length
Input cable (negative "-")	Black ; 16AWG; 16.5cm length
Output cable (positive "+")	Yellow ; 14AWG; 16.5cm length
Output cable (negative "-")	Black ; 14AWG; 16.5cm length
Weight	270g
Cooling method	Free convection
Packing	White box

Dimensions

