

ZC05 SERIES

DC/DC Converters 5W Wide Input



KEY FEATURES

- Power Module for PCB Mountable
- High Efficiency and Reliability
- 4:1 Wide Input Range
- Single and Dual Output
- Regulated Output
- Low Ripple and Noise



ELECTRICAL SPECIFICATIONS

Model No. (Single Output)	ZC05-24F-3.3S	ZC05-24F-5S	ZC05-24F-12S	ZC05-24F-15S	ZC05-24F-24S
Max Output Wattage (W)	5W	5W	6W	6W	6W
Input Voltage (V.DC) (Note 3)	24V (9-36V)	24V (9-36V)	24V (9-36V)	24V (9-36V)	24V (9-36V)
Output Voltage (V.DC.)	3.3V/1520mA	5V/1000mA	12V/500mA	15V/400mA	24V/250mA
Efficiency (typ.) (at 12V.DC)	72%	75%	81%	79%	80%
Capacitor Load (max)	10000 uF	5000 uF	300 uF	300 uF	100 uF

Model No. (Single Output)	ZC05-48F-3.3S	ZC05-48F-5S	ZC05-48F-12S	ZC05-48F-15S	ZC05-48F-24S
Max Output Wattage (W)	4W	5W	6W	6W	6W
Input Voltage (V.DC) (Note 3)	48V (18-75V)	48V (18-75V)	48V (18-75V)	48V (18-75V)	48V (18-75V)
Output Voltage (V.DC.)	3.3V/1520mA	5V/1000mA	12V/500mA	15V/400mA	24V/250mA
Efficiency (typ.) (at 24V.DC)	74%	77%	81%	81%	81%
Capacitor Load (max)	10000 uF	9000 uF	390 uF	300 uF	100 uF

Model No. (Dual Output)	ZC05-24F-5D	ZC05-24F-12D	ZC05-24F-15D
Max Output Wattage (W)	5W	6W	6W
Input Voltage (V.DC) (Note 3)	24V (9-36V)	24V (9-36V)	24V (9-36V)
Output Voltage (V.DC.)	±5V / ±500mA	±12V / ±250mA	±15V / ±200mA
Efficiency (typ.)	75%	78%	76%

Model No. (Dual Output)	ZC05-48F-5D	ZC05-48F-12D	ZC05-48F-15D
Max Output Wattage (W)	5W	6W	6W
Input Voltage (V.DC) (Note 3)	48V (18-75V)	48V (18-75V)	48V (18-75V)
Output Voltage (V.DC.)	±5V / ±500mA	±12V / ±250mA	±15V / ±200mA
Efficiency (typ.)	77%	83%	79%

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Max Output Wattage (W)		4W	5W	6W	6W	6W
Input	Input Filter	π type				
Output	Voltage (V.DC.)	3.3	5	12	15	24
	Voltage Accuracy	$\pm 2\%$				
	Current (mA) max	1520	1000	500	400	250
	Line Regulation (LL-HL) (typ.)	$\pm 0.5\%$				
	Load Regulation (10-100%) (typ.)	$\pm 3\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$
	Minimum Load	0%				
	Ripple & Noise	<0.5% Vout +50mV max (Vp-p)				
Protection	Over Power Protection	Above 105% Rated Output Power				
	Short Circuit Protection	Current limit, auto-recovery				
Isolation	Voltage	1600 VDC.				
	Resistance	10^8 ohms				
	Capacitance	1000 pF				
Environment	Operating Temperature	-25°C...+80°C (with derating)				
	Storage Temperature	-55°C...+105°C				
	Case Temperature	+100°C max.				
	Temperature Coefficient	$\pm 0.02\%$ Per°C				
	Humidity	95% RH				
	MTBF	>1000,000 h @ 25°C (MIL-HDBK-217F)				
Physical	Dimensions (L x W x H)	1.25 x 0.8 x 0.4 Inches (31.8 x 20.3 x 10.2 mm) Tolerance ± 0.5 mm				
	Case Material	Six-side shielded Aluminum with Non-Conductive base, Black Anodize				
	Weight	20 g				
	Cooling Method	Free-air convection				

Model No. (Dual Output)		ZC05-24F-5D ZC05-48F-5D	ZC05-24F-12D ZC05-48F-12D	ZC05-24F-15D ZC05-48F-15D
Max Output Wattage (W)		5W	6W	6W
Input	Input Filter	π type		
Output	Voltage (V.DC.)	± 5	± 12	± 15
	Voltage Accuracy	$\pm 2\%$		
	Current (mA) max	± 500	± 250	± 200
	Line Regulation (LL-HL) (typ.)	$\pm 0.5\%$		
	Load Regulation (10-100%) (typ.)	$\pm 1\%$		
	Minimum Load	0%		
	Ripple & Noise	<0.5% Vout +50mV max (Vp-p)		
Protection	Over Power Protection	Above 105% Rated Output Power		
	Short Circuit Protection	Current limit, auto-recovery		
Isolation	Voltage	1600 VDC.		
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	Weight	20 g		
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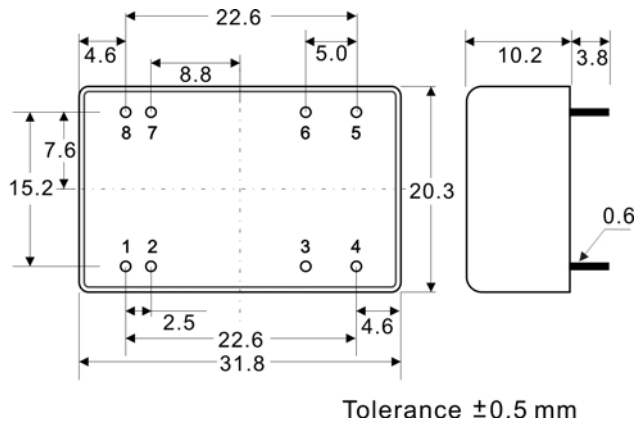
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NOTE

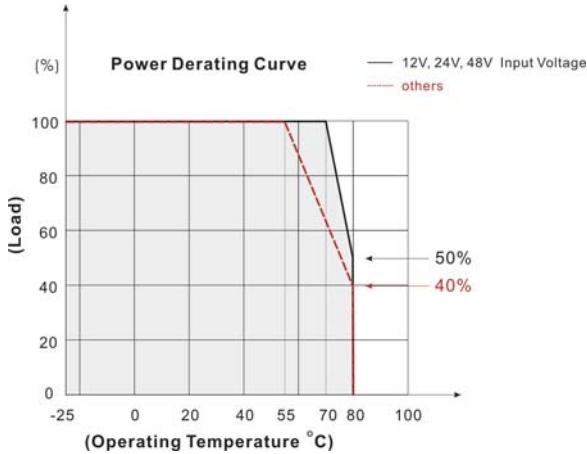
1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. If Input Voltage <10 VDC needs 1% Minimum Load.

MECHANICAL DIMENSIONS (Top View)



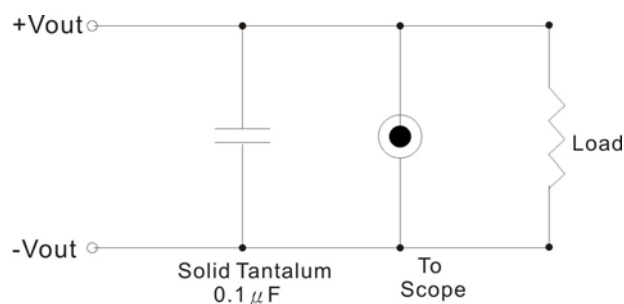
PIN#	Single	Dual
1	-VIN	-VIN
2	-VIN	-VIN
3	NC	COMMON
4	NC	-VOUT
5	+VOUT	+VOUT
6	-VOUT	COMMON
7	+VIN	+VIN
8	+VIN	+VIN

DERATING



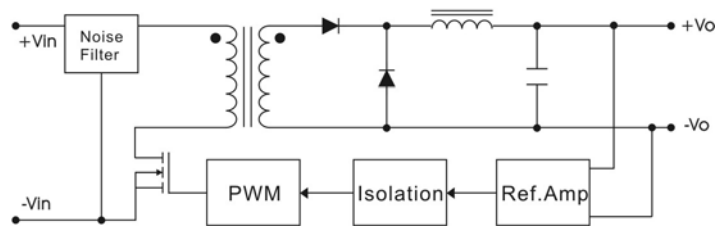
OUTPUT NOISE

The output noise is measured with 0.1uF tantalum capacitor.



BLOCK DIAGRAM

Single Output



Dual Output

