

ZB15 SERIES
15 Watts
KEY FEATURES

- Power Module for PCB Mountable
- 2:1 & 4:1 Wide Input Range
- Regulated Output
- Low Ripple and Noise
- Remote ON/OFF Control for Option
- Standard 2" x 1" Package and Pinout
- CE, UL Approval
- 3-Years Product Warranty


ELECTRICAL SPECIFICATIONS

Model No.	ZB15-12-3.3S	ZB15-12-5S	ZB15-12-12S	ZB15-12-15S	ZB15-12-24S
Input Voltage (V.DC.)	12V (9-18V)	12V (9-18V)	12V (9-18V)	12V (9-18V)	12V (9-18V)
Output Voltage (V.DC.)	3.3V / 3000mA	5V / 3000mA	12V / 1250mA	15V / 1000mA	24V / 625mA
Efficiency	71%	77%	79%	79%	84%

Model No.	ZB15-24-3.3S	ZB15-24-5S	ZB15-24-12S	ZB15-24-15S	ZB15-24-24S
Input Voltage (V.DC.)	24V (18-36V)	24V (18-36V)	24V (18-36V)	24V (18-36V)	24V (18-36V)
Output Voltage (V.DC.)	3.3V / 3000mA	5V / 3000mA	12V / 1250mA	15V / 1000mA	24V / 625mA
Efficiency	71%	77%	79%	79%	87%

Model No.	ZB15-24F-3.3S	ZB15-24F-5S	ZB15-24F-12S	ZB15-24F-15S
Input Voltage (V.DC.)	24V (9-36V)	24V (9-36V)	24V (9-36V)	24V (9-36V)
Output Voltage (V.DC.)	3.3V / 3000mA	5V / 3000mA	12V / 1250mA	15V / 1000mA
Efficiency	71%	77%	79%	79%

Model No.	ZB15-48-3.3S	ZB15-48-5S	ZB15-48-12S	ZB15-48-15S	ZB15-48-24S
Input Voltage (V.DC.)	48V (36-75V)	48V (36-75V)	48V (36-75V)	48V (36-75V)	48V (36-75V)
Output Voltage (V.DC.)	3.3V / 3000mA	5V / 3000mA	12V / 1250mA	15V / 1000mA	24V / 625mA
Efficiency	71%	79%	80%	80%	87%

Model No.	ZB15-48F-3.3S	ZB15-48F-5S	ZB15-48F-12S	ZB15-48F-15S
Input Voltage (V.DC.)	48V (18-75V)	48V (18-75V)	48V (18-75V)	48V (18-75V)
Output Voltage (V.DC.)	3.3V / 3000mA	5V / 3000mA	12V / 1250mA	15V / 1000mA
Efficiency	71%	79%	80%	80%

Model No. (Dual Output)	ZB15-12-5D	ZB15-12-12D	ZB15-12-15D
Input Voltage (V.DC.)	12V (9-18V)	12V (9-18V)	12V (9-18V)
Output Voltage (V.DC.)	±5V / ±1500mA	±12 / ±625mA	±15 / ±500mA
Efficiency	78%	79%	79%

Model No. (Dual Output)	ZB15-24-5D	ZB15-24-12D	ZB15-24-15D
Input Voltage (V.DC.)	24V (18-36V)	24V (18-36V)	24V (18-36V)
Output Voltage (V.DC.)	±5V / ±1500mA	±12 / ±625mA	±15 / ±500mA
Efficiency	78%	79%	79%

Model No. (Dual Output)	ZB15-48-5D	ZB15-48-12D	ZB15-48-15D
Input Voltage (V.DC.)	48V (36-75V)	48V (36-75V)	48V (36-75V)
Output Voltage (V.DC.)	±5V / ±1500mA	±12 / ±625mA	±15 / ±500mA
Efficiency	78%	79%	79%

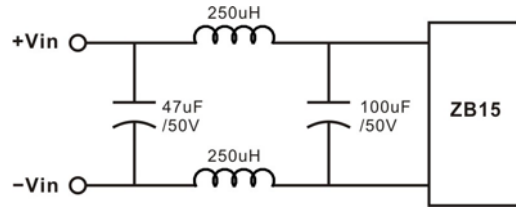
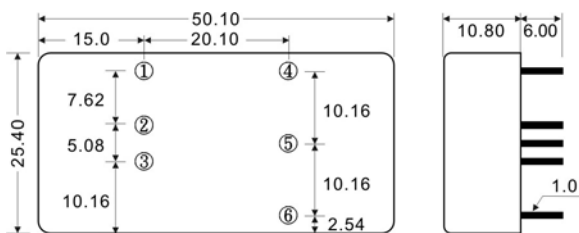
ZB15 SERIES
15 Watts

Model No.	(Single Output)	ZB15-12-3.3S ZB15-24-3.3S ZB15-24F-3.3S ZB15-48-3.3S ZB15-48F-3.3S	ZB15-12-5S ZB15-24-5S ZB15-24F-5S ZB15-48-5S ZB15-48F-5S	ZB15-12-12S ZB15-24-12S ZB15-24F-12S ZB15-48-12S ZB15-48F-12S	ZB15-12-15S ZB15-24-15S ZB15-24F-15S ZB15-48-15S ZB15-48F-15S	ZB15-12-24S ZB15-24-24S ZB15-48-24S
Max Output Wattage (W)		9.9W	15W	15W	15W	15W
Input	Input Filter	π type				
Output	Voltage (V.DC.)	3.3	5	12	15	24
	Voltage Accuracy	$\pm 2\%$				
	Current (mA) max	3000	3000	1250	1000	625
	Line Regulation (LL-HL) (typ.)	$\pm 0.5\%$				
	Load Regulation (10-100%) (typ.)	$\pm 1\%$				
	Minimum Load	3%	3%	1%	1%	0%
	Ripple	$< 0.2\%$ Vout +40mV max (Vp-p)				
	Noise	$< 0.5\%$ Vout +50mV max (Vp-p)				
Protection	Switching Frequency	300KHz				
	Over Power Protection	Works over 120% of rating and recovers automatically.				
	Over Voltage Protection	Zener diode clamp				
Isolation	Short Circuit Protection	Current limit, auto-recovery				
	Voltage	1600 VDC.				
	Resistance	10^8 ohms				
Environment	Capacitance	1000 pF				
	Operating Temperature	-25°C...+70°C (with derating)				
	Storage Temperature	-55°C...+105°C				
	Case Temperature	+100°C max.				
	Temperature Coefficient	$\pm 0.02\%$ Per°C				
	Humidity	95% RH				
Physical	MTBF	$> 800,000$ h @ 25°C (MIL-HDBK-217F)				
	Dimensions (L x W x H)	1.97 x 1.0 x 0.425 Inches (50.1 x 25.4 x 10.8 mm) Tolerance ± 0.5 mm				
	Case Material	Five-side shielded Aluminum with Non-Conductive base, Black Anodize				
	Weight	32 g				
Safety	Cooling Method	Free-air convection				
	Agency Approvals	CE, UL(except ZB15-12-3.3S/ZB15-12-5S/ZB15-12-12S/ZB15-12-15S/ZB15-12-24S)				
EMC	EMI (Conducted & Radiated Emission) (Note3)	EN 55022 class A				

Model No.	(Dual Output)	ZB15-12-5D ZB15-24-5D ZB15-48-5D	ZB15-12-12D ZB15-24-12D ZB15-48-12D	ZB15-12-15D ZB15-24-15D ZB15-48-15D
Max Output Wattage (W)		15W		
Input	Input Filter	π type		
Output	Voltage (V.DC.)	± 5	± 12	± 15
	Voltage Accuracy	$\pm 2\%$		
	Current (mA) max	± 1500	± 625	± 500
	Line Regulation (LL-HL) (typ.)	$\pm 0.5\%$		
	Load Regulation (10-100%)(Balance Load)	$\pm 1\%$		
	Minimum Load	3%		
	Ripple	$< 0.2\%$ Vout +40mV max (Vp-p)		
	Noise	$< 0.5\%$ Vout +50mV max (Vp-p)		
Protection	Switching Frequency	300KHz		
	Over Power Protection	Works over 120% of rating and recovers automatically.		
	Over Voltage Protection	Zener diode clamp		
Isolation	Short Circuit Protection	Current limit, auto-recovery		
	Voltage	1600 VDC.		
	Resistance	10^8 ohms		
Environment	Capacitance	1000 pF		
	Operating Temperature	-25°C...+70°C (with derating)		
	Storage Temperature	-55°C...+105°C		
	Case Temperature	+100°C max.		
	Temperature Coefficient	$\pm 0.02\%$ Per°C		
	Humidity	95% RH		
Physical	MTBF	$> 800,000$ h @ 25°C (MIL-HDBK-217F)		
	Dimensions (L x W x H)	1.97 x 1.0 x 0.425 Inches (50.1 x 25.4 x 10.8 mm) Tolerance ± 0.5 mm		
	Case Material	Five-side shielded Aluminum with Non-Conductive base, Black Anodize		
	Weight	32 g		
Safety	Cooling Method	Free-air convection		
	Agency Approvals	CE		
EMC	EMI (Conducted & Radiated Emission) (Note3)	EN 55022 class A		

Note:

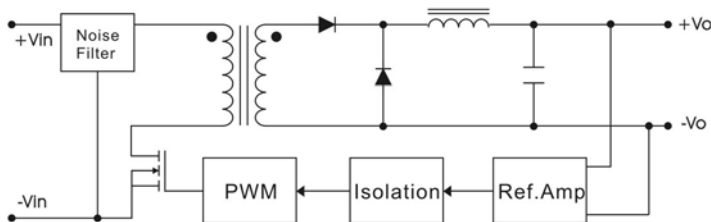
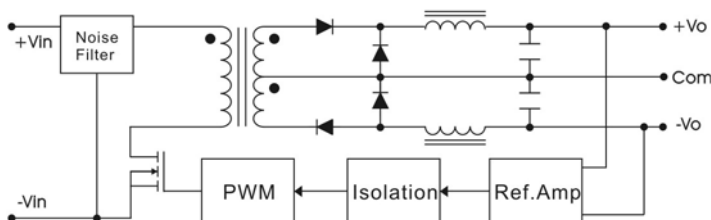
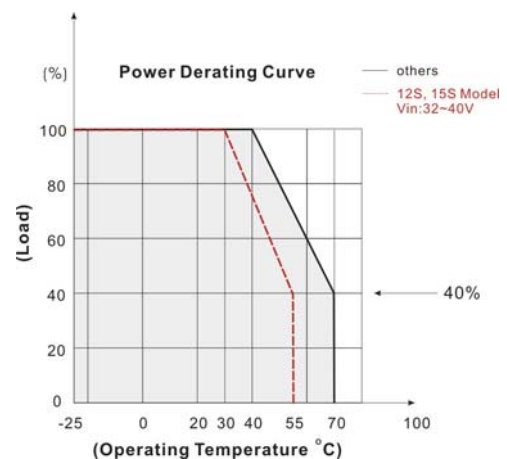
1. All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.
2. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
3. For EMI test, Please refer to below.


MECHANICAL DIMENSIONS (Top View)


PIN#	Single	Dual
1	ON / OFF CTL (Optional)	ON / OFF CTL (Optional)
2	-DC IN	-DC IN
3	+DC IN	+DC IN
4	-DC OUT	-DC OUT
5	NO PIN	COMMON
6	+DC OUT	+DC OUT

Remote On/Off Control

Control Pin is available for standard ZB15 models
Add suffix -N for models WITHOUT Control Pin

BLOCK DIAGRAM
Single Output

Dual Outputs

DERATING


We reserve the right to make alterations in the product materials and specifications without prior notification and consent to improve reliability, function or design or otherwise.

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