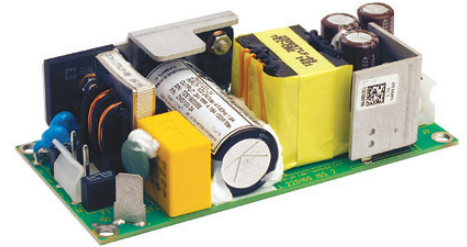


## 80W Convection, 100W Forced-Air Cooled Single Output Power Supplies

Features	Benefits
• Long e-cap lifetime	• Better field reliability and service life
• Compact 2 x 4 inch footprint	• Space saving in end equipment
• Medical approval with 2 x MoPP isolation	• Suitable for B and BF type medical equipment
• Suitable for Class I and Class II installations	• Flexible utilisation
• Ceramic start-up cap	• Eradicates start-up cap dry out problems



Specification <sup>(1)</sup>		ZMS100
Model		ZMS100
AC Input Voltage range <sup>(2) (4)</sup>	-	85 - 264VAC (47-63Hz)
Input Fusing		Line and neutral
Input Current (230V/115Vac)	A	1.0 / 2.0
Inrush Current - cold start	A	<40 (max at 264Vac input)
Harmonic Compliance	-	Compliant to EN/IEC61000-3-2 class A
Temperature Coefficient	-	<0.02% / °C
Hold Up Time at 80W load, 115/230Vac	ms	22 / 108 (see graphs for more detail)
Hold Up Time at 100W load, 115/230Vac	ms	16 / 84 (see graphs for more detail)
Leakage Current	µA	<100µA at 100V 60Hz input, <250µA at 230V 50Hz
Touch Current (enclosure leakage)	µA	<100 µA
Cooling	-	80W with convection cooling, 100W max. with forced air cooling (see airflow rate graphs)
Efficiency	-	Up to 90% (see efficiency curves)
Operating Temperature	°C	-20°C to +70°C, derate linearly to 50% load from 50°C to 70°C
Storage Temperature	°C	-40°C to +85°C
Operational Altitude	-	5000m
Overcurrent Protection		hiccup (auto recovery)
Overvoltage Protection		Latching (unit shutdown, recycle mains to restart)
No Load Input Power at 230Vac	W	<0.5
Average Active Efficiency	%	>87
Humidity (non condensing)	RH	Operating and storage : 5 - 95% (non-condensing)
Withstand Voltage	-	Input to output 4kVac 2x MoPP, 1.5kVac input to ground 1x MoPP, 1.5kVac output to ground 1 x MoPP
Isolation Resistance	Ω	>100MΩ at 25°C & 70%RH
Isolation Class <sup>(3)</sup>		Construction suitable for Class II installations
Vibration	-	10 to 500Hz at 2G, EN60068-2-6 19.6m/s <sup>2</sup> Constant, X, Y, Z 1 hour each.
Shock	-	30G EN60068-2-27, -47, MIL-STD-810E
Approvals	-	IEC/EN/UL/CSA 62368-1, 60950-1 and 60601-1, ANSI/AAMI ES 60601-1, CE Mark. Designed to meet IEC/EN/UL/CSA 61010-1:2010. ZMS100-12, 15 and 24 are type tested to EN 60335-1.
Conducted & Radiated EMI <sup>(5)</sup>		EN 55011 / EN 55032 level B conducted, level A radiated
Weight	g	150
Size (W x L x H)	mm	50.8 x 101.6 x 31.9
Warranty	yrs	3
Connectivity		Molex as standard with separate ground faston Input Molex 10-63-4027, output Molex 09-65-2048

**Notes:** 1. Specification parameters apply at 25°C ambient temperature unless stated otherwise.

2. For 12V & 15V unit derate from 100% at 100V to 90% at 90V and to 80% at 85V, for 24V, 36V, & 48V unit derate from 100% at 90V to 90% at 85V. (convection and forced air ratings)

3. ZMS100 uses Y1 capacitors to earth.

4. Consult Sales Office for use under DC Input conditions.

5. Additional measures will be needed if used in environments where Class B radiated is required.

## Model Selector

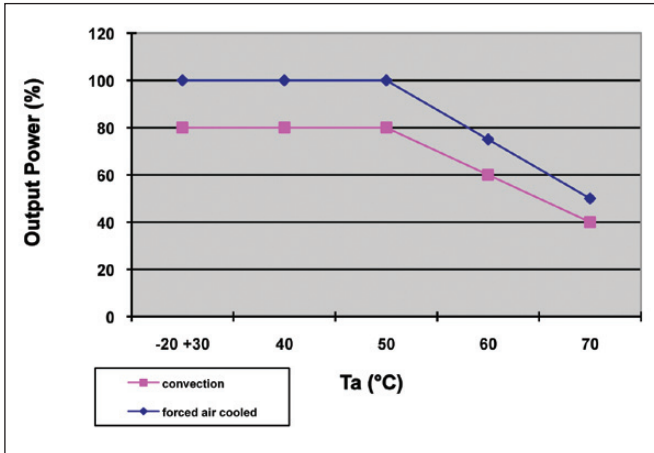
Model	Nominal Output Voltage (V)	Output Adjust Range (V)	Maximum Current Convection (A)	Maximum Current Forced Air (A)	Maximum Output Power Convection (W)	Maximum Output power Forced Air (W)	Ripple <sup>(6)</sup> and noise (mv pk-pk)	Load Reg from 0 - full load (mv)	Line Reg from 85-264Vac (mv)
ZMS100-12	12	11.4 to 13.2	6.7	8.4	80.4	100.8	120	120	60
ZMS100-15	15	14.25 to 16.5	5.4	6.7	81.0	100.5	150	150	75
ZMS100-24	24	22.8 to 26.4	3.4	4.2	81.6	100.8	240	240	120
ZMS100-36	36	34.2 to 39.6	2.25	2.8	81.0	100.8	360	360	180
ZMS100-48	48	45.6 to 52.8	1.67	2.1	80.2	100.8	480	480	240

Note: 6. At 115Vac input, 25°C.

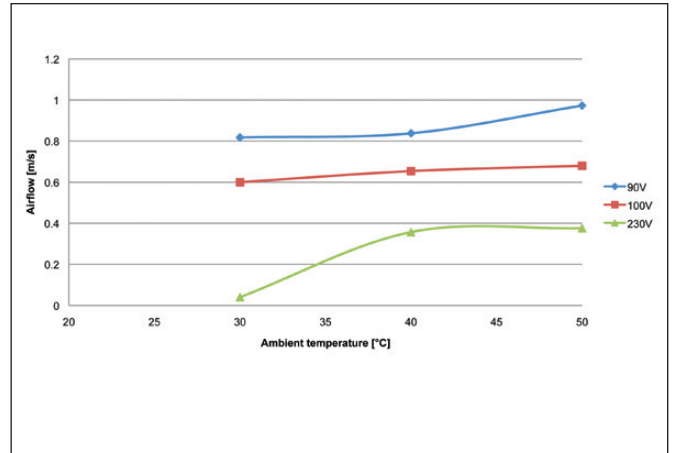
## Immunity Levels

Test	Standard	Test Level	Criteria	Notes
ESD	EN61000-4-2	4	A	
Radiated Susceptibility	EN61000-4-3	3	A	inc proximity field requirements of EN60601-1-2:2015
Electrical Fast Transient Burst	EN61000-4-4	4	A	(AC Port, 5kHz and 100KHz)
Surge	EN61000-4-5	3	A	-
Conducted Susceptibility	EN61000-4-6	3	A	-
Magnetic fields	EN61000-4-8	4	A	-
Voltage Dips & Interruptions	EN61000-4-11 Class 3 Industrial inc EN55024 (100VAC)	0% for 1/2 cycle	A/B	A up to 94W, B above 94W
		0% for 1 cycle	A/B	A up to 54W, B above 54W
		40% for 10/12 cycles	B	-
		70% for 25/30 cycles	A/B	A up to 54W, B above 54W
		80% for 250/300 cycles	A/B	A up to 94W, B above 94W
	EN61000-4-11 Class 3 Industrial inc EN55024 (240VAC)	0% for 250/300 cycles	B	-
		0% for 1/2 cycle	A	100W
		0% for 1 cycle	A	100W
		40% for 10/12 cycles	A	-
		70% for 25/30 cycles	A	-
	EN60601-1-1:2015 (100VAC)	80% for 250/300 cycles	A	-
		0% for 250/300 cycles	B	-
		0% for 1/2 cycle	A/B	A up to 94W, B above 94W
		0% for 1 cycle	A/B	A up to 54W, B above 54W
	EN60601-1-1:2015 (240VAC)	70% for 25/30 cycles	A/B	A up to 54W, B above 54W
0% for 250/300 cycles		B	-	
0% for 1/2 cycle		A	100W	
0% for 1 cycle		A	100W	
EN60601-1-1:2015 (240VAC)	70% for 25/30 cycles	A	-	
	0% for 250/300 cycles	B	-	
	0% for 250/300 cycles	B	-	
Ringwave Test	EN61000-4-12	3	A	-
Voltage Fluctuations	EN61000-4-14	Class 3	A	-

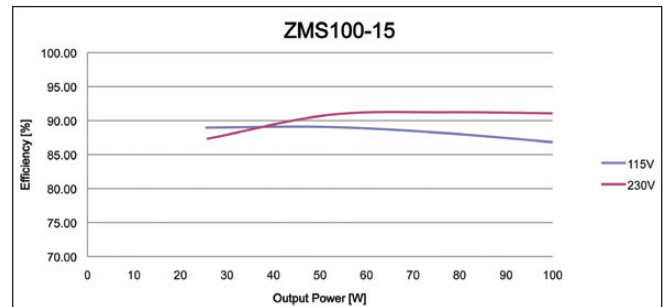
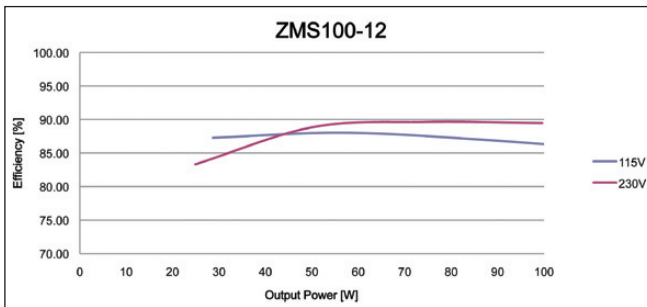
## Output Derating ZMS100 Series Output



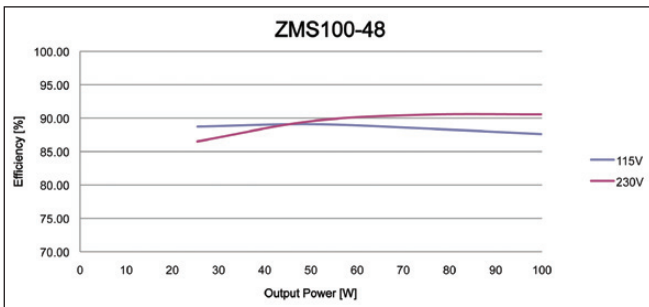
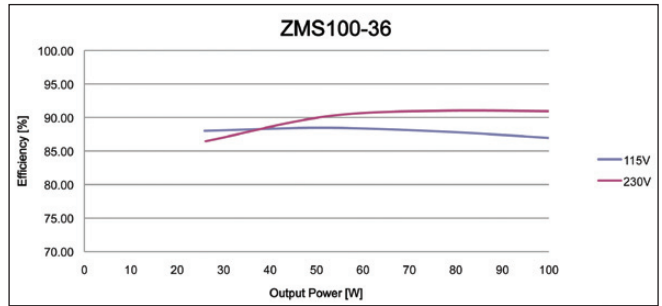
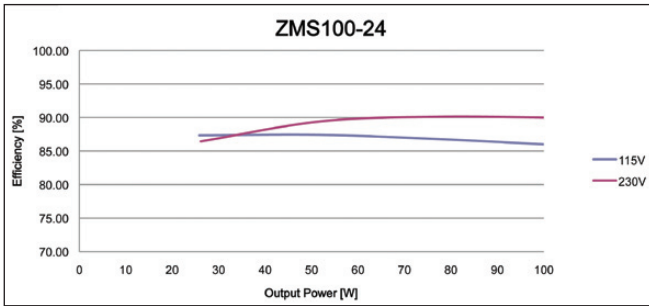
## Minimum Required Airflow for ZMS100-24 at 100W



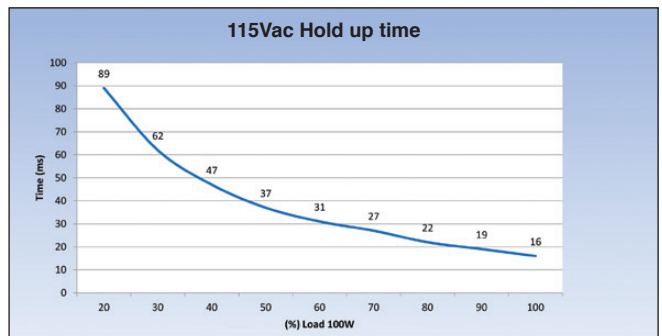
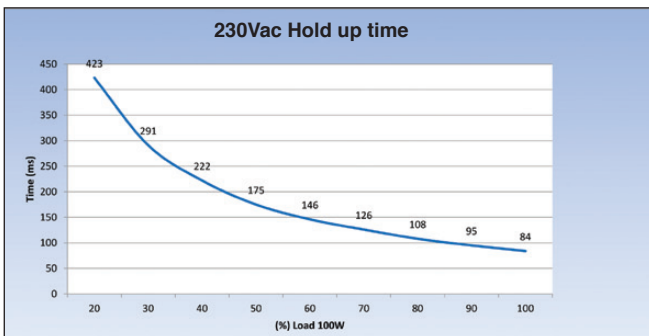
## ZMS100 Series Efficiency Curves



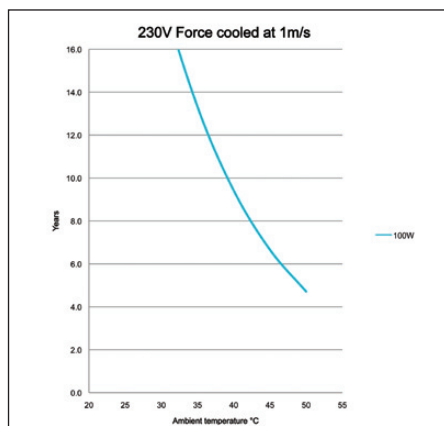
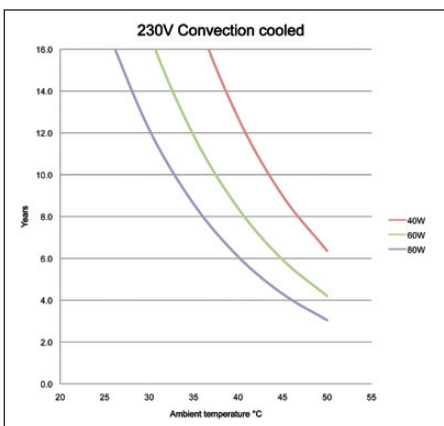
## ZMS100 Series Efficiency Curves



## Hold Up Time Characteristics for ZMS100 (12V)

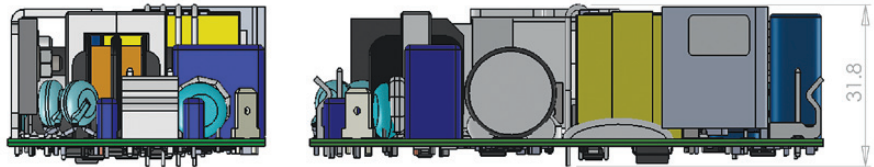
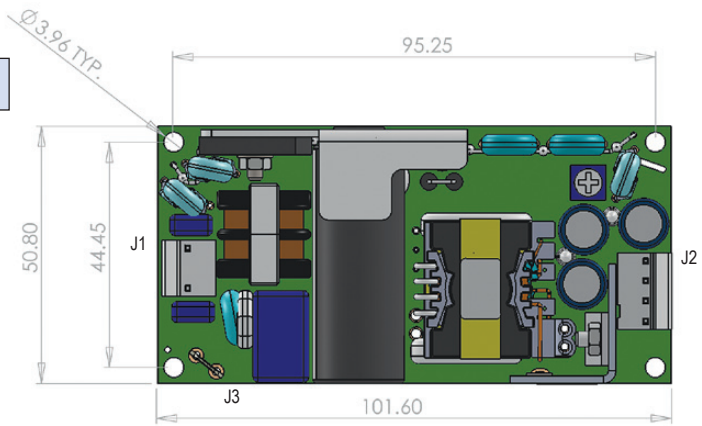


## Electrolytic Capacitor: Example Life Curve

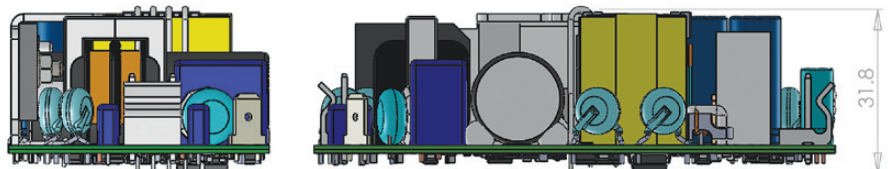
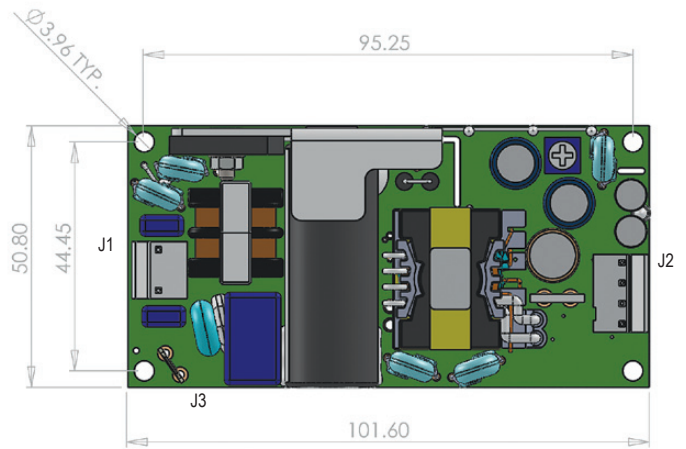


**Notes:** Based on ZMS100-12 bulk cap life estimates. Consult TDK-Lambda for other operating condition examples.

Outline Drawing ZMS100 24 - 48V Series



Outline Drawing ZMS100 12 - 15V Series



ZMS100 Series Pinout

J1	J2	J3
<b>PIN</b> Connection	<b>PIN</b> Connection	<b>PIN</b> Connection
1 Live	1 +VE	1 Earth
2 Not Connected	2 +VE	
3 Neutral	3 0V	
	4 0V	

ZMS100 Mating Parts

Connector	Housing	Crimp Pin	Manufacturer
J1	09-50-1031	08-70-1030	Molex
J2	09-50-1041	08-70-1030	Molex
J3	22-18AWG - 2-520407-2 (Faston) 16-14AWG - 3-520408-2	-	Tyco



## TDK-Lambda France SAS

3 Avenue du Canada  
Parc Technopolis  
Bâtiment Sigma  
91940 les Ulis  
France  
Tel: +33 1 60 12 71 65  
Fax: +33 1 60 12 71 66  
france@fr.tdk-lambda.com  
www.emea.lambda.tdk.com/fr



## Italy Sales Office

Via Giacomo Matteotti 62  
20092 Cinisello Balsamo (MI)  
Italy  
Tel: +39 02 61 29 38 63  
Fax: +39 02 61 29 09 00  
info.italia@it.tdk-lambda.com  
www.emea.lambda.tdk.com/it



## Netherlands

info@nl.tdk-lambda.com  
www.emea.lambda.tdk.com/nl



## TDK-Lambda Germany GmbH

Karl-Bold-Strasse 40  
77855 Achern  
Germany  
Tel: +49 7841 666 0  
Fax: +49 7841 5000  
info.germany@de.tdk-lambda.com  
www.emea.lambda.tdk.com/de



## Austria Sales Office

Aredstrasse 22  
2544 Leobersdorf  
Austria  
Tel: +43 2256 655 84  
Fax: +43 2256 645 12  
info@at.tdk-lambda.com  
www.emea.lambda.tdk.com/at



## Switzerland Sales Office

Eichtalstrasse 55  
8634 Hombrechtikon  
Switzerland  
Tel: +41 44 850 53 53  
Fax: +41 44 850 53 50  
info@ch.tdk-lambda.com  
www.emea.lambda.tdk.com/ch



## Nordic Sales Office

Haderslevvej 36B  
DK-6000 Kolding  
Denmark  
Tel: +45 8853 8086  
info@dk.tdk-lambda.com  
www.emea.lambda.tdk.com/dk



## TDK-Lambda UK Ltd.

Kingsley Avenue  
Ilfracombe  
Devon EX34 8ES  
United Kingdom  
Tel: +44 (0) 12 71 85 66 66  
Fax: +44 (0) 12 71 86 48 94  
info@uk.tdk-lambda.com  
www.emea.lambda.tdk.com/uk



## TDK-Lambda Ltd.

1 Alexander Yanai  
Segula  
Petah-Tikva  
Israel  
Tel: +9 723 902 4333  
Fax: +9 723 902 4777  
info@tdk-lambda.co.il  
www.emea.lambda.tdk.com/il



## C.I.S.

### Commercial Support:

Tel: +7 (495) 665 2627

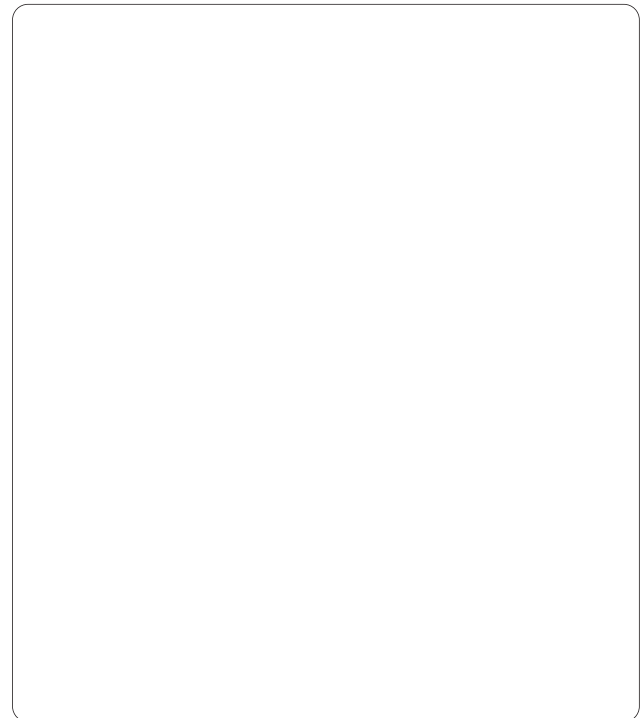
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