

Katalog

Schaltnetzteile von Myrra





Power Supplies

Encapsulated Solutions 1W ~ 60W



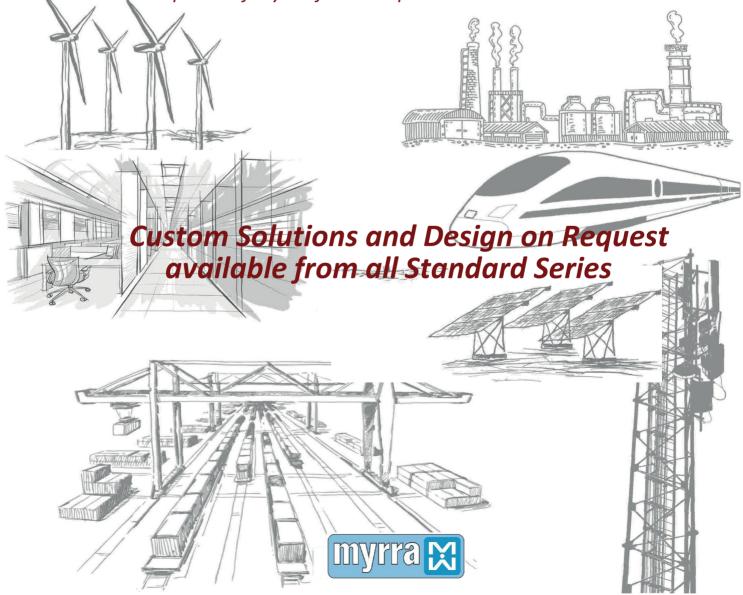
www.myrra.com www.myrra-powersupplies.com Myrra company Profile

Myrra Transformers, Inductors, Chokes and Power Supplies are World renowned for their reliability and performance. This is the result of constant technological development and continuous production process improvements, which has made Myrra Group a leading Company in both design (R&D) and manufacturing.

With their own range of products, including encapsulated Power Supplies, Transformers (50/60Hz), HF Transformers and Value-Added Services, Myrra has become a reliable and renowned Global Supplier.

Since incorporation in 1949, Myrra has become one of the largest European sources for their products in the electrical market, and is striving to grow their position in a continuously evolving market.

As a Company certified by VDE, UL, CSA, ISO9001 and with a clear policy for conservation of the environment (RoHs, REACH, ISO14001), Myrra is an ideal partner for your future requirements.





Encapsulated Power Supplies

"We at Myrra, Design and Manufacture all our Power Products, ensuring our Customers experience consistent Quality and Reliability"

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47000 9	Series & 49000 Series
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10	Single Output 2.4W ~ 5W (relaxed regulation)
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Indicates that this family is recommended for new design in projects



Power Supplies



In

1 Power Supply

3 Certified Power Ratings 3 Certified Power Ratings 3 Certified Power Ratings In 1 Power Supply

2W to 5W 5W to 10W In

1 Power Supply

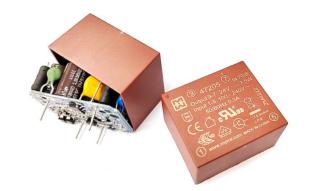






2.5W to 5W





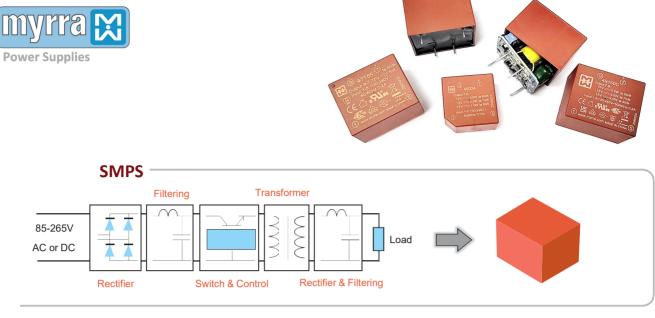
10W



20W to 60W



POWER SUPPLIES 1W to 60W





MYRRA encapsulated Switched Mode Power Supplies is based on Flyback topology.

They constitute an interesting alternative to the traditional supply in the most common applications of power from 1W to 60W.

ENERGY SAVING due to high efficiency and low standby power.

Application for our Power Supplies:

- Alternative to the linear transformers in all AC/DC applications of power up to 60W
- Alternative to DC/DC converters for application in D.C. current (Telecom supplies, electric substations etc.)
- Industrial, domestic and consumer electronics applications
- S t a n d b y devices and others DC or AC auxiliary supplies

With the same footprint as an EI30 transformer, they will replace:

- 50 Hz Transformer
- Fuse
- Bridge Rectifier
- Filtering Capacitor

Regulated types will also replace linear regulator and heatsink

MAIN FEATURES

- Wide input voltage range
- Increased power: 3 x compared to standard EE20-EI30-EI38 transformers
- Better energetic efficiency: 70% typical compared to 40% for the conventional supply
- Very low Standby Power consumption: meets requirements of Energy Star or EC Code of Conduct
- Same footprint as EE20-EI30-EI38-EI48 transformer: (1W~10W) Upgrade your application without redesign of PCB

SAFETY STANDARDS

- Meets all requirements of:
 - IEC/EN62368-1
 - IEC/EN60950-1
 - IEC/EN60335-1
 - IEC/EN61558-2-16
 - IEC/EN61558-1
 - UL62368-1
 - CSA 22.2 N°62368-1
 - UL60950-1
 - CSA 22.2 N°60950-1-
 - UL 94-V0

EMC STANDARDS

Conducted and radiated emissions conform to

- EN 55014-1
- EN 55032 class B
- Immunity conform to
 - EN 55014-2
 - EN 61000-4-x

ONE OUTPUT 1W to 3W - Small Compact Size



MAIN FEATURES

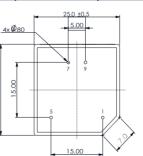
- Small Compact Size PCB Mount
- Single Output
- Output Range: 3.3VDC 24VDC
- Input Range: 85VAC 265VAC/47 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption < 0.15W
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct
- Encapsulated Design And Same Footprint As EE20 Transformer : Upgrade Your Application Without Redesign Of PCB

- Safety: IEC/EN61558-2-16,IEC/EN60950-1, IEC/EN60335-1, IEC/EN62368-1,UL62368-1,UL60950-1, CAN/CSA22.2No.60950-1-07 CSA22.2No.62368-1-14
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emissions Conform To EN55014, EN55032, FCC Part 15, CLASS B without any additionalcomponents.
- Immunity Conform To: IEC/EN61000-3-2 CLASS A, EN61000-3-3, EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Load Regulation (%)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)
	1		300		80	60
48021	2.5	3.3	750	± 6	60	63
	2.75		830		50	03
	1		200		80	60
48022	2.5	5	500		60	65
	3		600		50	65
	1		110		80	67
48023	2.5	9	280		70	70
	3		330		60	70
	1		84		80	67
48024	2.5	12	210		70	72
	3		250	± 5	60	12
	1		67		80	67
48025	2.5	15	170		70	72
	3		200		60	12
	1		56		80	67
48026	2.5	18	140		70	72
	3		170		60	12
	1		42		80	70
48027	2.5	24	105		70	74
	3		125		60	14
		25.0 ±0.5	-			Power Derating Curve

DIMENSIONS and PINOUT

4 pins PRI : Pins 1 - 5 : AC or DC Input SEC : Pin 7 : DC Output +V Pin 9 : DCOutputOV

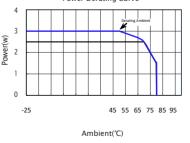


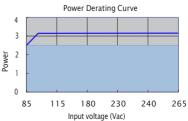
25.0±0.5



16.00 ±0.5

4.0 ±0.5









Power Supplies

I	Model: 1 to 3 Watt	Specification
	Rated AC input Voltage	100~240Vac or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac or 120VDC-370VDC
AC Input	AC Input Frequency Range	47Hz~63Hz
Characteristics	Rated AC Input Frequency	50/60Hz
	Input Current	0.15A Max@85Vac~265Vac, at full load
	Standby Power	0.15W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)
	Output Voltage Accuracy	3.3V type: ± 6 % Other types(5V,9V,12V,15V,18V and 24V): ± 5 %
	Output Voltage Line Regulation	3.3V type: ± 5 % Other types(5V,9V,12V,15V,18V and 24V): ± 3 %
	Output Voltage Load Regulation	3.3V type: ± 6 % Other types(5V,9V,12V,15V,18V and 24V): ± 5 %
-	Ripple & Noise	Max 200mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth)
	Dynamic Response	The output voltage shall not exceed ±10% rated output voltage @ 50% ← →100% Load change, 1A/uS , 1KHz 50% duty cycle
DC Output Characteristics	Hold Up Time	5mS min@ 100Vac ~240Vac, DC output with full load
	Turn On Delay	3S max @ 85Vac~265Vac input and DC output with full load
	Rise Time	50ms max @ 85Vac~265Vac input and DC output with full load
	Overshoot	The output voltage shall not exceed +10% rated output voltage @ Power on and 85Vac~265Vac input, and DC with full load
	Undershoot	The output voltage shall not exceed -10% rated output voltage @ Power off and 85Vac~265Vac input and DC output with full load
	Efficiency	See table (Meets Requirements Of Energy Star And EC Code Of Conduct)
	Over Current Protection	The power supply shall automatic protect. The power supply shall auto-recover normal operation after the deformation is removed. No excessive heat, odor, or plastic deformation shall occur with no safety hazard
Protection Characteristics	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odor, or plastic deformation shall occur with no safety hazard
	Over temperature protection	The power supply shall shut down when the junction temperature of PWM controller exceeds the thermal shutdown temperature, typically 140°C ±10°C
	Operation Temperature	-25°C ~+ (see table)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
Environmental	Storage Temperature	-10'C to +35'C
	Storage Humidity	< 75%RH
	Cooling Method	Ordinary or thermostat
	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 secs.
	Radiation	Meeting EN55032, EN55014, FCC part 15, Class B
	Conduction	Meeting EN55032,EN55014, FCC part 15,Class B
	Harmonic Current Disturbance	Meeting IEC/EN61000-3-2:2014, Class A
	Voltage Fluctuation And Flicker	Meeting EN61000-3-3:2013
	Electrostatic Discharge	Meeting EN61000-4-2:2008 Contact Discharge ±4KV,Air Discharge ±8KV
Safety & EMC		Meeting IEC/EN61000-4-3:2006+A1:2007+A2:2010
Requirement	RF Field Strength Susceptibility	
	Electrical Fast Transient	Meeting EN61000-4-4:2012, ±1KV
	Lightning Surge	Meeting EN61000-4-5:2014, \pm 1KV (surge level can be extended to 6KV with an external circuit - please refer to MYRRA's website and catalogue for MYRRA SMPS application notes).
	Conducted Susceptibility	Meeting EN61000-4-6 : 2013
	Voltage Dips And Interruptions	Meeting EN61000-4-11 : 2004
-	Safety Standards	Meet all requirements of : UL60950-1, UL62368-1, CAN/CSA22.2No.60950-1-07, CSA22.2No.62368-1-14, IEC/EN60950-1, IEC/EN60335-1, IEC/EN61558-2-16, IEC/EN62368-1,
		CE, VDE, ENEC Marks, UL certificate NO.E345767 VDE certificate NO. 40046353
Reliability	MTBF	Calculated by MIL-HDBK-217-F2 >200K Hours @230VAC input at max operation temperature; >550k Hours @230VAC input at 25deg.C
Requirement	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 16 grams per product unit	
Guarantee	This product meets RoHS standard	

ONE OUTPUT 2W to 5W (49XXC)



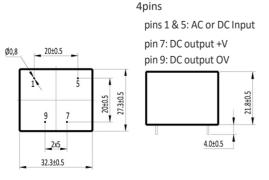
MAIN FEATURES

- 2.5 To 5W Small Compact Size PCB Mount
- Single Output Secondary Side Regulated
- Output Range : 3.3VDC 30VDC
- Input Range : 85VAC 265VAC/47 63Hz Or 120VDC -370VDC
- Very Low Standby Power Consumption < 0.1W
- Better Energetic Efficiency : Meet Requirements
 Of Energy Star And EC Code Of Conduct
- Encapsulated Design And Same Footprint As El30 Transformer : Upgrade Your Application Without Redesign Of PCB

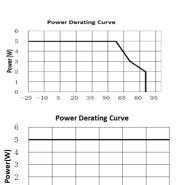
- Safety : Meets All Requirements of IEC/EN61558-2-16, IEC/EN60335-1, IEC/EN62368-1, UL62368-1, CSA C22.2NO.62368-1-14
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS B without any additional components.
- Immunity Conform To: IEC/EN61000-3-2 CLASS A, EN61000-3-3, EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output voltage (Vdc)	Output current (mA)	Output Load Regulation (%)	Ambient Temp. (°C)	Min. Part Efficiency(%)
49033C	2.0		610		80	
	2.75	3.3	830		70	71
	5.0		1500		50	
49050C	2.0	5.0	400		85	70
	3.0	5.0	600		70	
	5.0		1000		60	72
49090C	2.0	9.0	220		85	73
	3.0	9.0	330		70	
	5.0		560		60	75
49120C	2.0	12	170		85	74
	3.0	12	250		70	76
	5.0		420		60	
49150C	2.0	15	130	± 2	85	74
	3.0	15	200		70	
	5.0		330		60	77
49180C	2.0	18	110		85	76
	3.0	10	170		70	
	5.0		280		60	78
49240C	2.0	24	84		85	76
	3.0	24	125		70	
	5.0		210		60	80
	2.0		67		85	76
49300C	3.0	30	100		70	
	5.0		167		60	80

DIMENSIONS and PINOUT



View From Pins Side



115 145 175

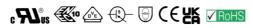
205 235 265





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Power Supplies

Мо	del: 2.5 To 5 Watt	Specification
	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC
AC Input	AC Input Frequency Range	47Hz~63Hz
Characteristics	Rated AC Input Frequency	50/60Hz
	Input Current	0.2A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.1W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)
	Output Voltage Accuracy	±2%
DC Output Characteristics	Output Voltage Line Regulation	±0.5%
	OutputVoltage Load Regulation	±2%
	Ripple & Noise	Max 180mVp-p@ Rated AC input(The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	See Table (Meet Requirements Of Energy Star And EC Code Of Conduct)
	Over Current Protection	The power supply shall automatically protect against over current. The power supply shall auto-recover normal operation after the fault condition is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard during the fault.
Protection Characteristics	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage; The short may be applied before power on, or after power on. The power supply shall resume norma operation after the short is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard during the fault.
	Over Temperature Protection	The power supply shall shut down when the junction temperature of PWM controller exceeds the thermal shutdown temperature, typically $140^{\circ}C \pm 10^{\circ}C$
	Operation Temperature	-25°C ~+85°C (see table)
Environmental	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-10'C to +35'C
	Storage Humidity	<75%RH
	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.
	Radiation	Meets EN55032,FCC part 15, Class B. under 3dB margin
Safety & EMC	Conduction	Meets EN55032,FCC part 15,Class B. under 3dB margin
Requirement	Safety Standards	Meet all requirements of : Meet all requirements of : UL62368-1, CSA22.2No.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN62368-1 CE, VDE,UKCA, ENEC Mark UL certificate NO.E345767 VDE certificate NO. 40053361
Reliability Requirement	MTBF	>550K Hours @ 230VAC input at 24deg.C and DC output with 5W load. >200K Hours @ 230VAC input at max operation temperature and DC output with 5W load <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The power supply is subject to a burn in test for 2~5hours under 230VAC input and DC full load at an ambient temperature of 30~45 degrees C
Net Weight	About 30 grams per product uni	t
Guarantee	This product is in accordance wi	th the European RoHS & REACH directives

ONE OUTPUT 2.5W to 5W



MAIN FEATURES

- 2.5 To 5W Small Compact Size PCB Mount
- Single Output
- Output Range : 3.3VDC 24VDC
- Input Range : 85VAC 265VAC/47 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption < 0.2W
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct
- Encapsulated Design And Same Footprint As El30 Transformer : Upgrade Your Application Without Redesign Of PCB

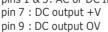
- Safety:Meets All Requirements of: IEC/EN61558-2-16, IEC/EN60950-1, IEC/EN60335-1,IEC/EN62368-1, UL60950-1, CSA22.2No.60950-1,CE, VDE, ENEC Mark
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emissions Conform To EN55014, EN55032, CLASS B
- Immunity Conform To: IEC/EN61000-3-2 CLASS A, EN61000-3-3, EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, IEC61000-4-8, EN61000-4-11

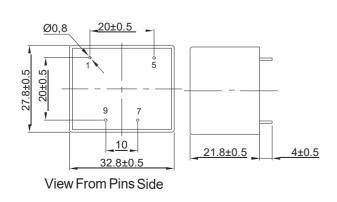
Part Number	Output Power (W)	Output voltage (Vdc)	Output current (mA)	Output Load Regulation (%)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)
47121	2.5	3.3	750			65
47122	2.75	5	550			68
47123		9	270		70	72
47124	2.5	12	210		70	74
47125	2.5	15	170	± 2		75
47126		24	110			77
47151	4.5	3.3	1350			65
47152	4.5	5	900			68
47153		9	550			72
47154	5	12	420		50	75
47155	5	15	320			76
47156		24	220			79
47157	4.5	3.8	1180			66

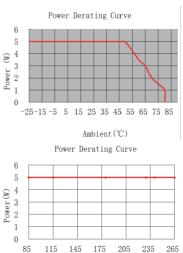
Special Version : 4712xSLI and 4715xSLI = 19.2mm case height (x=1, 2, 3, 4, 5, 6 or 7)

DIMENSIONS and PINOUT









Input voltage(Vac)









Power Supplies

Model: 2.5 To 5 Watt		Specification				
	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC				
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC				
AC Input	AC Input Frequency Range	47Hz~63Hz				
Characteristics	Rated AC Input Frequency	50/60Hz				
	Input Current	0.2A Max@85Vac~265Vac@ DC output at full load				
	Standby Power	0.3W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)				
	Output Voltage Accuracy	± 5%				
	Output Voltage Line Regulation	± 3%				
DC Output Characteristics	Output Voltage Load Regulation	± 5%				
	Ripple & Noise	Max 200mVp-p@ Rated AC input(The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)				
	Efficiency	See Table (Meet Requirements Of Energy Star And EC Code Of Conduct)				
Durtualia	Over Current Protection	The power supply shall automatic protection. The power supply shall autorecovery normal operation after the deformation is removed. No excessive heat, odor, or plastic deformation shall occur, no safety hazard				
Protection Characteristics	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours The short may be applied before power on, or after power on ; The power supply shall resun normal operation after the short is removed, no excessive heat, odor, or plastic deformation shall occur, no safety hazard				
	Over Temperature Protection	The power supply shall shut down when the junction temperature of PWM controller exceeds the thermal shutdown temperature, typically 140°C ±10°C				
	Operation Temperature	-25°C ~+ (see table)				
Environmental	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load				
	Storage Temperature	-10'C to +35'C				
	Storage Humidity	< 75%RH				
	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.				
	Radiation	Meet EN55032,EN55014 , Class B. under 3dB margin				
Safety & EMC	Conduction	Meet EN55032,EN55014, Class B. under 3dB margin				
Safety & EMC Requirement	Safety Standards	Meet all requirements of UL60950-1, CSA22.2No.60950-1-07JEC/EN60950-1, IEC/EN60335- IEC/EN61558-2-16, IEC/EN62368-1,CE,VDE, And ENEC Mark VDE Approval No. 40034334 UL Approval No.E345767				
Reliability	MTBF	Calculated by MIL-HDBK-217-F2 550K Hours Min. @230VAC input, 25deg.C				
Requirement	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C				
		About 30 grams per product unit				

ONE OUTPUT 2.4W to 5W

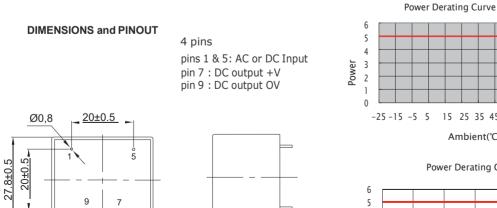


MAIN FEATURES

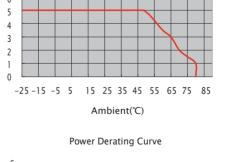
- 2.4To 5W Small Compact Size PC B Mount
- Single Output
- Output Range : 5.5VDC 24VDC
- Input Range : 85VAC 265VAC/47 63Hz Or 120VDC - 370VDC
- Very Lo w Standby Power Consumption < 0.3W
- Better Energetic Efficiency : Meet RequirementsOf Energy Star
- Encapsulated Design And Same Footprint As El30 Transformer : Upgrade Your Application Without Redesign Of PCB

- Safety: Meets All Requirements of: IEC/EN61558-2-16, IEC/EN60950-1, IEC/EN60335-1, UL60950-1, IEC/EN62368-1, CSA22.2No.60950-1-07,CE, VDE, **ENEC Mark**
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC: Conducted And Radiated Emissions Conform To EN55014, EN55032, CLASS B
- Immunity Conform To: IEC/EN61000-3-2 CLASS A, EN61000-3-3, EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Load Regulation (%)		Min. Part Efficiency(%)
47114	2.4	12	200			74
47132	2.5	5	500			68
47133		9	360		70	73
47134	3.2	12	270		70	75
47135	3.2	18	180			78
47136		24	130	± 5		80
47162		5	900			68
47163		9	560			73
47164	5	12	420		50	75
47165		18	280			78
47166		24	210			80



21.8±0.5



145 175 205

Input voltage(Vac)

235 265



32.8±0.5

10

View From Pins Side

Power(W) 4 3

2

1 0

85

115

4±0.5







Mo	del: 2.5 To 5 Watt	Specification
	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC
AC Input	AC Input Frequency Range	47Hz~63Hz
Characteristics	Rated AC Input Frequency	50/60Hz
	Input Current	0.2A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.3W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)
	Output Voltage Accuracy	±5%
	Output Voltage Line Regulation	±3%
DC Output	Output Voltage Load Regulation	±5%
Characteristics	Ripple & Noise	Max 200mVp-p@ Rated AC input(The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	See Table (Meet Requirements Of Energy Star And EC Code Of Conduct)
:	Over Current Protection	The power supply shall automatic protection. The power supply shall autorecovery normal operation after the deformation is removed. No excessive heat, odor, or plastic deformation shall occur, no safety hazard
Protection Characteristics	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours ; The short may be applied before power on, or after power on ; The power supply shall resume normal operation after the short is removed, no excessive heat, odor, or plastic deformation shall occur, no safety hazard
	Over temperature protection	The power supply shall shut down when the junction temperature of PWM controller exceeds the thermal shutdown temperature, typically 140°C ±10°C
	Operation Temperature	-25°C ~+ (see table)
Environmental	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-10'C to +35'C
	Storage Humidity	< 75%RH
	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.
	Radiation	Meet EN55032,EN55014 , Class B. under 3dB margin
Safety & EMC	Conduction	Meet EN55032,EN55014, Class B. under 3dB margin
Requirement	Safety Standards	Meet all requirements of UL60950-1,CSA22.2No.60950-1-07,IEC/EN60950-1,IEC/EN60335- 1,IEC/EN61558-2-16,IEC/EN62368-1 CE,VDE, And ENEC Mark VDE Approval No. 40034334 UL Approval No.E345767
Reliability	MTBF	Calculated by MIL-HDBK-217-F2 550K Hours Min. @230VAC input, 25deg.C
Requirement	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 30 grams per product unit	
Guarantee	This product meet to RoHS stand	ard

TWO OUTPUTS - COMMON 3W to 5W



MAIN FEATURES

- 3W To 5W Small Compact Size PCB Mount
- Two Common Output
- Output Voltage Accuracy : See Table For 15 to 100% Rated Load Of Each Output (includes line and load variations)
- Input Range : 85VAC 265VAC/47 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption < 0.2W
- Better Energetic Efficiency : Meet Requirements Of Energy Star

- Encapsulated Design And Same Footprint As El30Transformer : Upgrade Your Application Without Redesign Of PCB
- Safety: Meets All Requirements of: IEC/EN61558-2-16, IEC/EN60950-1, IEC/EN60335-1, UL60950-1, IEC/EN62368-1, CSA22.2No.60950-1-07, CE, VDE, ENEC Mark
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC: Conducted And Radiated Emissions Conform To EN55014, EN55032, CLASS B
- Immunity Conform To: IEC/EN61000-3-2 CLASS A, EN61000-3-3, EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Load Regulation (%)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)
47243	4.7	(+)10.5	380	± 3		72
41240	-1.7	(+) 7.0	100	± 15	50	12
47244	5	(+) 15	300	± 3		73
47244	0	(+) 7.0	70	± 15		
47245	3.2	(+) 12	130	± 5	70	
47245	5.2	(+) 5.5	300	± 10	10	65
47246		(+) 5.0	400 (600max)	± 3		00
47240	4	(+) 12	170	± 15	60	
47247		(+) 15	130	± 8	50	73
47247		(+) 15	130	± 8		13

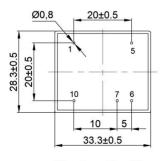
Notes : The dual DC Voltage Outputs share a Common OV reference.

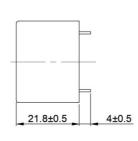
Power deration must be considered at higher Operating Ambient Temperatures.

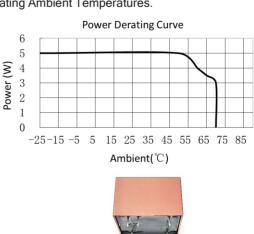
DIMENSIONS and PINOUT

5 pins

pins 1 & 5: AC or DC Input pin 6: Common output 0V pin 7: DC output I pin 10: DC output II











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Power Supplies

Model: Two	Common Outputs 3 TO 5W	Specification
	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC
AC Input	AC Input Frequency Range	47Hz~63Hz
Characteristics	Rated AC Input Frequency	50/60Hz
	Input Current	0.2A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.2W Max (Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output	Output Voltage Accuracy	See Table For 15 To 100% Rated Load Of Each Output (includes line and load variations)
Characteristics	Efficiency	See Table(Meet Requirements Of Energy Star And EC Code Of Conduct)
	Over Current Protection	The power supply shall automatic protection. The power supply shall auto recovery normal operation after the deformation is removed. No excessive heat, odor, or plastic deformation shall occur, no safety hazard
Protection Characteristics	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on ; The power supply shall resume normal operation after the short is removed, no excessive heat, odor, or plastic deformation shall occur, no safety hazard
	Over Temperature Protection	The power supply shall shut down when the junction temperature of PWMcontroller exceeds the thermal shutdown temperature, typically 140°C±10°C.
	Operation Temperature	-25°C ~ +Ta (see table)
_	Operation Humidity	10~ 90% RH(No Condensing) @DC output with full load
Environmental	Storage Temperature	-10'C to +35'C
	Storage Humidity	< 75%RH
	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.
	Radiation	Meet EN55032,EN55014, Class B. under 3dB margin
	Conduction	Meet EN55032,EN55014,Class B. under 3dB margin
Safety & EMC Requirement	Safety Standards	Meet all requirements of UL60950-1,CSA22.2No.60950-1-07,IEC/EN60950-1, IEC/EN60335- 1,IEC/EN61558-2-16,IEC/EN62368-1 CE,VDE, And ENEC Mark VDE Approval No. 40034334 UL Approval No.E345767
Reliability	MTBF	Calculated by MIL-HDBK-217-F2 550K Hours Min. @230VAC input, 25deg.C
Requirement	Burn-In Test	The unit shall be burned in for 2~5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 30 grams per product unit	
Guarantee	This product meet to RoHS standa	ard

TWO OUTPUTS - ISOLATED 3.5W to 4W

MAIN FEATURES

- Small Compact Size P C BMount
- Two Isolated Output
- Output Voltage Accuracy : See Table For 15 to 100% Rated Load Of Each Output(includes line and load variations)
- Input Range : 85VAC 265VAC/47 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption < 0.2W
- Better Energetic Efficiency : Meet Requirements Of Energy Star

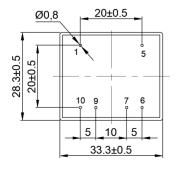
- Encapsulated Design And Same Footprint As El30Transformer : Upgrade Your Application Without Redesign Of PCB
- Safety: Meets All Requirements of: IEC/EN61558-2-16, IEC/EN60950-1, IEC/EN60335-1, UL60950-1, IEC/EN62368-1,CSA22.2No.60950-1-07, CE, VDE, ENEC Mark
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emissions Conform To EN55014 , EN55032 , CLASS B
- Immunity Conform To: IEC/EN61000-3-2 CLASS A, EN61000-3-3, EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

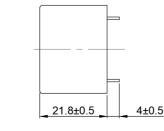
Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Load Regulation (%)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)
47252	3.5	5	350 (600 max)	± 3		60
41202	0.0	5	350	± 15		00
47254		12	165 (300max)	± 5		72
41204		12	165	± 15		12
47255		15	135 (200 max)	± 5	60	73
41200	4	15	135	± 15	00	10
47257		5	400 (600 max)	± 3		68
41201		12	170	± 15		00
47258		18	150 (200 max)	± 5		72
47230		8	150	± 15		12

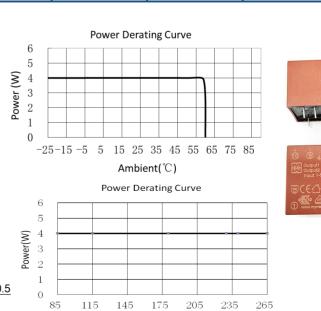
DIMENSIONS and PINOUT

6 pins

pins 1 & 5: AC or DC Input pin 6: DC output 1 0V pin 7: DC output 1 +V pin 9: DC output 2 0V pin 10: DC output 2 +V







Input voltage(Vac)

View From Pins Side







Model : Two	Common Outputs 3 TO 5W	Specification
	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC
AC Input	AC Input Frequency Range	47Hz~63Hz
Characteristics	Rated AC Input Frequency	50/60Hz
	Input Current	0.2A Max@85Vac~265Vac@ DC output with full load
	Standby Power	0.2W Max (Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output	Output Voltage Accuracy	See Table For 15 To 100% Rated Load Of Each Output (includes line and load variations)
Characteristics	Efficiency	See Table(Meet Requirements Of Energy Star And EC Code Of Conduct)
	Over Current Protection	The power supply shall automatic protection. The power supply shall auto recovery normal operation after the deformation is removed. No excessive heat, odor, or plastic deformation shall occur, no safety hazard
Protection Characteristics	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on ; The power supply shall resume normal operation after the short is removed, no excessive heat, odor, or plastic deformation shall occur, no safety hazard
	Over Temperature Protection	The power supply shall shut down when the junction temperature of PWMcontroller exceeds the thermal shutdown temperature, typically140°C \pm 10°C.
	Operation Temperature	-25°C ~ +Ta (see table)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
Environmental	Storage Temperature	-10'C to +35'C
	Storage Humidity	< 75%RH
	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.
	Radiation	Meet EN55032,EN55014, Class B. under 3dB margin
	Conduction	Meet EN55032,EN55014,Class B. under 3dB margin
Safety & EMC Requirement	Safety Standards	Meet all requirements of UL60950-1, CSA22.2No.60950-1-07, IEC/EN60950-1, IEC/EN60335- 1,IEC/EN61558-2-16,IEC/EN62368-1 CE, VDE, And ENEC Mark VDE Approval No. 40034334 UL Approval No.E345767
Reliability	MTBF	Calculated by MIL-HDBK-217-F2 550K Hours Min. @230VAC input, 25deg.C
Requirement	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 30 grams per product unit	
Guarantee	This product meet to RoHS standa	ard





MAIN FEATURES

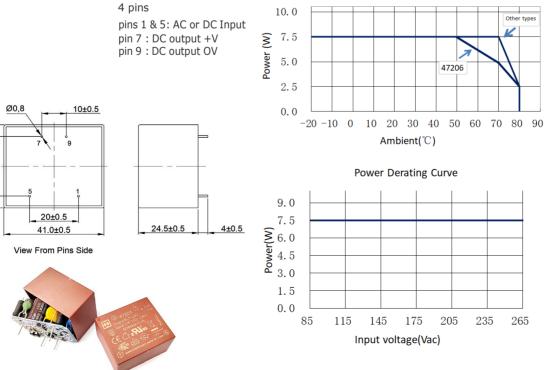
- 7.5W Small Compact Size PC B Mount
- Single Output
- Output Range : 3.3VDC 24VDC
- Input Range : 85VAC 265VAC/47 63Hz Or 120VDC - 370VDC
- Very Lo w Standby Power Consumption < 0.15W
- Better Energetic Efficiency : Meet Requirements Of Energy Star
- Encapsulated Design And Same Footprint As El38 Transformer : Upgrade Your Application Without Redesign Of PCB

- Safety : Meets All Requirements of: IEC/EN61558-2-16, IEC/EN60950-1, IEC/EN60335-1, UL60950-1, IEC/EN62368-1, CAN/CSA22.2No.60950-1-07, CE, VDE, ENEC Mark
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emissions Conform To EN55014, EN55032, FCC Part15, CLASS B
- Immunity Conform To: IEC/EN61000-3-2 CLASS A, EN61000-3-3, EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8.EN61000-4-11

Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Load Regulation (%)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)
47206		3.3	2270	± 3	50	74
47200		5	1500			77
47201		9	830	± 2	70	80
47202	7.5	12	625			
47203		15	500	± 2	10	82
47204		18	420			02
47205		24	310			

DIMENSIONS and PINOUT

35.0±0.5 25±0.5





Other types

235

265





		Power Supplies
N	lodel: 7.5 Watt	Specification
	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC
AC Input	AC Input Frequency Range	47Hz~63Hz
Characteristics	Rated AC Input Frequency	50/60Hz
	Input Current	0.3A Max@85Vac~265Vac@DC with full load
	Standby Power	0.15W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)
	Output Voltage Accuracy	± 2% (5V,9V,12V,15V,18V,24V Types) - ± 3%(3.3V Type)
DC Output Characteristics	Output Voltage Line Regulation	±0.5%
	Output Voltage Load Regulation	± 1%(5V,9V,12V,15V,18V,24V Types) ± 3%(3.3V Type)
	Ripple & Noise	Max180mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	Meet Requirements Of Energy Star And EC Code Of Conduct
Protection Characteristics	Over Current Protection	The power supply shall automatic protection. The power supply shall auto recovery normal operation after the deformation is removed. No excessive heat, odor, or plastic deformation shall occur, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours The short may be applied before power on, or after power on; The power supply shall resum normal operation after the short is removed, no excessive heat, odor, or plastic deformation shall occur, no safety hazard
	Operation Temperature	-20°C ~ +Ta (see table)
	Operation Humidity	10~ 90% RH(No Condensing) @ full load
Environmental	Storage Temperature	-40°C~ +85°C
	Storage Humidity	5%~95%
	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.
	Radiation	Meet EN55032,EN55014,FCC part 15, Class B. under 3dB margin
	Conduction	Meet EN55032,EN55014, FCC part 15,Class B. under 3dB margin
Safety & EMC Requirement	Safety Standards	Meet all requirements of UL60950-1,CAN/CSA22.2No.60950-1-07,IEC/EN60950-1,IEC/EN60335-1,IEC/EN61558-2- 16,IEC/EN62368-1 CE,VDE, And ENEC Mark VDE Approval No. 40041563 UL Approval No.E345767
Reliability	MTBF	Calculated by MIL-HDBK-217-F2 550K Hours Min. @230VAC input, 25deg.C
Requirement	Burn-In Test	The unit shall be burned in for 2~5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 56 grams per product unit	
Guarantee	This product meet to RoHS stand	ard

ONE OUTPUT 5W to 10W (49XXE)



MAIN FEATURES

- 5 To 10W Small Compact Size PCB Mount
- Single Output Secondary Side Regulated
- Output Range : 3.3VDC 30VDC
- Input Range : 85VAC 265VAC/47 63Hz Or 120VDC -370VDC
- Very Low Standby Power Consumption < 0.1W
- Better Energetic Efficiency : Meet Requirements
 Of Energy Star And EC Code Of Conduct

Encapsulated Design And Same Footprint As El38 Transformer : Upgrade Your Application Without Redesign Of PCB

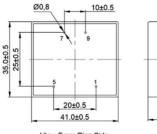
- Safety : Meets All Requirements of IEC/EN61558-2-16, IEC/EN60335-1, IEC/EN62368-1, UL62368-1, CSA C22.2NO.62368-1-14,CE,VDE,ENEC,UKCA Mark.
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS B without any additional components.
- Immunity Conform To: IEC/EN61000-3-2 CLASS A, EN61000-3-3, EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

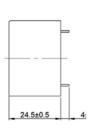
Part Number	Output Power (W)	Output voltage (Vdc)	Output current (mA)	Output Load Regulation (%)	Ambient Temp. (°C)	Min. Part Efficiency	
49033E	10		2700		60	000/	
	7.5	3.3	2270		70	68%	
	5.0		1500		80		
49050E	10		2000		60	73%	
	7.5	5.0	1500		70	1370	
	5.0		1000		80	70%	
49090E	10		1100		60		
	7.5	9.0	830		75	79%	
	5.0		550		80	74%	
49120E	10		830		60		
	7.5	12	625		75	80%	
	5.0		420	±2	80	75%	
49150E	10		670		60		
	7.5	15	500		75	81%	
	5.0		330		80	76%	
49180E	10		560		60		
	7.5	18	420	1	75	81%	
	5.0	10	280	1	80	76%	
49240E	10		420		60	81%	
	7.5	24	310		75	81%	
	5.0		210		80	76%	
49300E	10		333		60		
	7.5	30	250		75	81%	
	5.0		167		80	76%	

DIMENSIONS and PINOUT 4g

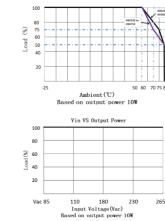
4pins

pins 1 & 5: AC or DC Input pin 7: DC output +V pin 9: DC output OV









Power Derating Curve







Model: 5W To 10Watt **Specification** Rated AC input Voltage 100~240Vac Or 140VDC-340VDC 85~265Vac Or 120VDC-370VDC AC Input Voltage Range 47Hz~63Hz AC Input Frequency Range AC Input Characteristics **Rated AC Input Frequency** 50/60Hz Input Current 0.35A Max@85Vac~265Vac@DC output with full load Standby Power 0.1W Max(Meet Requirements Of Energy Star And EC Code Of Conduct) **Output Voltage Accuracy** ±2% **Output Voltage Line Regulation** $\pm 0.5\%$ **Output Voltage Load Regulation** +2%DC Output Characteristics Max 180mVp-p@ Rated AC input (The measuring will be terminated with a 47uF ALE-Cap and **Ripple & Noise** a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth) Efficiency See Table (Meet Requirements Of Energy Star And EC Code Of Conduct) The power supply shall automatically protect against over current. The power supply **Over Current Protection** shall auto-recover normal operation after the fault condition is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard during the fault. Protection The power supply shall withstand a continuous output short without damage; The short Characteristics may be applied before power on, or after power on. The power supply shall resume normal **Output Short Circuit Protection** operation after the short is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard during the fault. The power supply shall shut down when the junction temperature of PWM controller **Over Temperature Protection** exceeds the thermal shutdown temperature, typically 140°C ±10°C **Operation Temperature** -25°C ~+80°C (see table) **Operation Humidity** 10~ 90% RH(No Condensing) @ DC output with full load Environmental Storage Temperature -10'C to +35'C Storage Humidity < 75%RH **Dielectric Strength** Primary to Secondary: 4000Vac 5mA, 3 sec. Radiation Meets EN55032, FCC part 15, Class B. under 3dB margin Conduction Meets EN55032,FCC part 15,Class B. under 3dB margin Safety & EMC Meet all requirements of : Safety Standards Requirement UL62368-1, CSA C22.2NO.62368-1-14, IEC/EN60335-1, IEC/EN61558-2-16, IEC/EN62368-1, CE, VDE, UKCA, ENEC Mark UL certificate NO.E345767 >200K Hours @230VAC input at max operation temperature; MTBF >550K Hours @230VAC input at 25deg.C Reliability Calculated in accordance with MIL-HDBK-217-F2 Requirement The power supply is subject to a burn in test for 2~5hours under 230VAC input and **Burn-In Test** DC full load at an ambient temperature of 30~45 degrees C Net Weight About 56 grams per product unit This product is in accordance with the European RoHS & REACH directives Guarantee





MAIN FEATURES

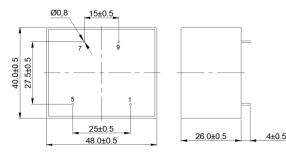
- 10W Small Compact Size PCB Mount
- Single Output
- Output Range : 3.3VDC 24VDC
- Input Range : 85VAC 265VAC/47 63Hz Or 120VDC 370VDC
- Very Low Standby Power Consumption < 0.10W
- Better Energetic Efficiency : Meet Requirements Of Energy Star
- Encapsulated Design And Same Footprint As El48 Transformer : Upgrade Your Application Without Redesign Of PCB

- Safety : Meets All Requirements of: IEC/EN61558-2-16, IEC/EN60950-1, IEC/EN60335-1, UL60950-1, IEC/EN62368-1,CAN/CSA22.2No.60950-1-07, CE, VDE, ENEC Mark
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emissions ConformTo EN55014 , EN55032 , FCC Part 15 CLASS B
- Immunity Conform To: IEC/EN61000-3-2 CLASS A, EN61000-3-3, EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

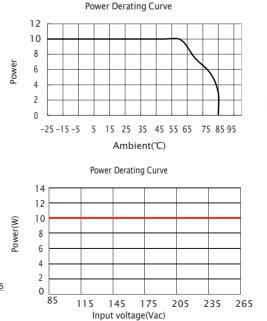
Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Load Regulation (%)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)
47210		5	2000	± 3		74
47211		9	1100			80
47212		12	830		60	
47213	10	15	670	± 2	00	82
47214		18	560			02
47215		24	420			
47216		3.3	3000	± 4	50	72

DIMENSIONS and PINOUT

4 pins pins 1 & 5: AC or DC Input pin 7 : DC output +V pin 9 : DC output OV



View From Pins Side









Model: 10 Watt		Specification
	Rated input Voltage	100~240Vac Or 140VDC-340VDC
	Input Voltage Range	85~265Vac Or 120VDC-370VDC
AC Input	AC Input Frequency Range	47Hz~63Hz
Characteristics	Rated AC Input Frequency	50/60Hz
	Input Current	0.4A Max@85Vac~265Vac@ DC output with full load
	Standby Power	0.1W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)
	Output Voltage Accuracy	± 2% (9V,12V,15V,18V,24V Types), ± 3% (5V Type), ± 4%(3.3V Type)
	Output Voltage Line Regulation	$\pm0.5\%$ (9V,12V,15V,18V,24V Types), $\pm1\%$ (3.3V and 5V Types)
	Output Voltage Load	± 1%(9V,12V,15V,18V,24V Types)
DC Output Characteristics	Regulation	± 3% (5V Type), ± 4%(3.3V Type)
	Ripple & Noise	Max150mVp-p@RatedACinput (Themeasuringwillbeterminatedwitha47uFALE-Capanda 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	Meets Requirements Of Energy Star And EC Code Of Conduct
	Over Current Protection	The power supply shall automatic protection. The power supply shall auto-recovery normal operation after the deformation is removed. No excessive heat, odor, or plastic deformation shall occur, no safety hazard
Protection Characteristics	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The shore may be applied before power on, or after power on; The power supply shall resume norm operation after the short is removed, no excessive heat, odor, or plastic deformation shall occur, safety hazard
	Operation Temperature	-25°C ~ +Ta (see table)
- · · · ·	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
Environmental	Storage Temperature	-10'C to +35'C
	Storage Humidity	< 75%RH
	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec .
	Radiation	Meeting EN55032,EN55014,FCC part 15, Class B.
	Conduction	Meeting EN55032,EN55014, FCC part 15,Class B.
Safety & EMC Requirement	Safety Standards	Meet all requirements of : UL60950-1, CAN/CSA22.2No.60950-1-07, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN62368-1 CE, VDE, ENEC Mark UL certificate NO.E345767 VDE certificate No.40044416
		Calculated by MIL-HDBK-217-F2
Delle Hitter	MTBF	5V ,9V,12V,15V,18V,24V Types: 200K Hours Min. @230VAC input, 60deg.C
Reliability Requirement		3.3V type:200K Hours Min. @230VAC input, 50deg.C
- 1.	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambienttemperature of 30~45 degreesC
Net Weight	About 80.2 grams per produ	ct unit.
Guarantee	This product meet to RoHS s	tandard

ONE OUTPUT 20W (49XXXG) 💯

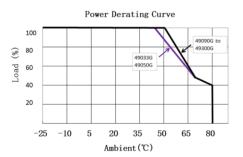


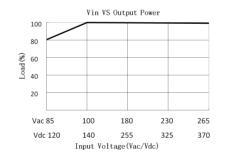
MAIN FEATURES

- 20W Small Compact Size PCB Mount
- Single Output
- Output Range : 3.3VDC 30VDC
- Input Range: 85VAC 265VAC/47 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption = 0.15W
- High Energetic Efficiency: Meet Requirements
 Of Energy Star And EC Code Of Conduct
- Encapsulated Design PCB Total Power Solution

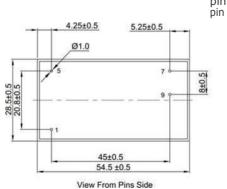
- Safety: Meets with IEC/EN61558-2-16, IEC/EN60335-1, UL62368-1, IEC/EN62368-1, CSA C22.2NO.62368-1-14,CE,UKCA Mark
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emissions Conform To EN55032,FCC Part15, CLASS B
- Immunity Conform To: IEC/EN61000-3-2 CLASS A, EN61000-3-3, EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

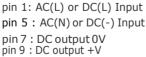
Part Number	Output Power (W)	Output voltage (Vdc)	Output current (mA)	Output Load Regulation (%)	Ambient Temp. (°C)	Min. Part Efficiency (%)
49033G	13.5	3.3	4100	±		75
49050G	19	5	3800	4		78
49090G		9	2200		-25°C	81
49120G		12	1667 (1800 max)		~	82
49150G		15	1333 (1400 max)	± 2	+80°C	
49180G	20	18	1111 (1140 max)			83
49240G		24	833 (900 max)	5		
49300G		30	667(720 max)			

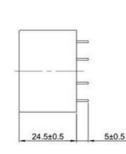




DIMENSIONS and PINOUT

















Model: 20 Watt		Specification	
	Rated input Voltage	100~240Vac Or 140VDC-340VDC	
	Input Voltage Range	85~265Vac Or 120VDC-370VDC	
AC Input	AC Input Frequency	47Hz~63Hz	
Characteristics	Rated AC Input Frequency	50/60Hz	
	Input Current	0.5A Max@85Vac~265Vac@DC output with full laod	
	Standby Power	0.15W Max (Meets requirements Of Energy Star And EC Code Of Conduct)	
		± 2.5% (9V, 12V, 15V, 18V, 24V Types)	
	Output Voltage Accuracy	± 4% (3.3V Type, 5V Type)	
	Output Voltage Line	+/- 1%	
	Regulation		
DC Output	Output Voltage Load	± 2.5% (9V, 12V, 15V, 18V, 24V Types)	
Characteristics	Regulation	± 4% (3.3V Type, 5V Type)	
		Max 180mVp-p @Rated AC input (The measuring will be terminated with a 47uF AL	
	Ripple & Noise	E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)	
	Efficiency	Meets requirements Of Energy Star And EC Code Of Conduct	
	,		
	Over Current Protection	The power supply shall automatic protection. The power supply shall auto-recovery normal	
		operations after the deformation is removed. No excessive heat, odor, or plastic deformation	
Protection		shall occur with no safety hazard The power supply shall withstand a continuous output short without damage in 24 hours;	
Characteristics	Output Short Circuit	The short may be applied before power on, or after power on; The power supply shall	
	Protection	resume normal operation after the short is removed, no excessive heat, odor, or plastic	
	Protection	deformation shall occur, no safety hazard	
	Operation Temperature	-25°C ~+80°C (see derating curve)	
Environmental	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load	
	Storage Temperature	-10°C~ +35°C	
	Storage Humidity	<75%RH	
	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec .	
Safety & EMC	Radiation	Meeting EN55032, EN55014, FCC part 15, Class B.	
Requirement	Conduction	Meeting EN55032, EN55014, FCC part 15, Class B.	
	Safety Standards	Meet all requirements of : UL62368-1, CSA C22.2NO.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN62368-1, CE,UKCA, Mark UL certificate NO.E345767	
		VDE certificate NO. 400xxxx	
Reliability	MTBF	200K Hours Minimum @230VAC input, 50deg.C	
Requirement		Calculated by MIL-HDBK-217-F2 The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an	
	Burn-In Test	ambient temperature of 30~45 degrees C	
		The units do not including PINs of input and output , and dimension is :	
Machanizzi	Physical Size		
Mechanical	Not Woicht	(L)54.5*(W)28.5*(H)24.5±0.5mm (see appearance drawing)	
	Net Weight	Approximately 65 grams per product unit.	
Guarantee	This product meets RoHS standard & REACH directives		

ONE OUTPUT 20W

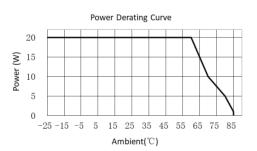


MAIN FEATURES

- 20W Small Compact Size PCB Mount
- Single Output
- Output Range : 3.3VDC 24VDC
- Input Range: 85VAC 265VAC/47 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption = 0.1W
- Better Energetic Efficiency: Meet Requirements
 Of Energy Star And EC Code Of Conduct
- Encapsulated Design PCB Total Power Solution

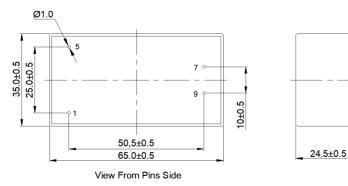
- Safety: Complies with IEC/EN61558-2-16, IEC/ EN62368-1, IEC/EN60335-1, UL62368-1, CSA C22.2NO.62368-1-14, CE.
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emissions Conform To EN55032 ,FCCPart 15, CLASS B
- Immunity Conform To: IEC/EN61000-3-2 CLASS A, EN61000-3-3, EN61000-4-2, IEC/EN61000-4-3,EN61000-4-4,EN61000-4-5, EN61000-4-6,EN61000-4-8,EN61000-4-11

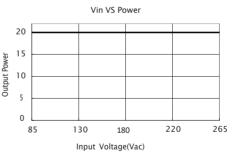
Part Number	Output Power (W)	Output voltage (Vdc)	Output current (mA)	Output Load Regulation (%)	Max.Operating Ambient (°C)	Min. Part Efficiency (%)
47220	15	3.3	4500	± 4	50	82
47221		5	4000	± 4	50	02
47222		9	2200		60	85
47223	20	12	1700			
47224	15 1400 ± 3 18 1100	15	1400	± 3		
47225						
47226		24	840			



DIMENSIONS and PINOUT

4 pins pins 1 & 5: AC or DC Input pin 7 : DC output +V pin 9 : DC output OV







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5±0.5







Model: 20 Watt		Specification				
	Rated input Voltage	100~240Vac Or 140VDC-340VDC				
	Input Voltage Range	85~265Vac Or 120VDC-370VDC				
AC Input	AC Input Frequency	47Hz~63Hz				
Characteristics	Rated AC Input Frequency	50/60Hz				
	Input Current	0.6A Max@85Vac~265Vac@DC output with full load				
	Standby Power	0.15W Max (Meets requirements Of Energy Star And EC Code Of Conduct)				
		± 3% (9V, 12V, 15V, 18V, 24V Types)				
	Output Voltage Accuracy	± 4% (3.3V Type, 5V Type)				
	Output Voltage Line	± 2% (9V, 12V, 15V, 18V, 24VTypes)				
	Regulation	± 3% (3.3V and 5V Types)				
DC Output	Output Voltage Load	± 3% (9V, 12V, 15V, 18V, 24V Types)				
Characteristics	Regulation	± 4% (3.3V Type, 5V Type)				
	Divide Q Maine	Max 180mVp-p @Rated AC input (The measuring will be terminated with a 47uF AL				
	Ripple & Noise	E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)				
	Efficiency	Meets requirements Of Energy Star And EC Code Of Conduct				
		The power supply shall automatically protect. The power supply shall auto-recover normal				
	Over Current Protection	operation after the deformation is removed. No excessive heat, odor, or plastic				
		deformation shall occur, no safety hazard				
Protection		The power supply shall withstand a continuous output short without damage in 24 hours;				
Characteristics	Output Short Circuit	The short may be applied before power on, or after power on; The power supply shall				
	Protection	resume normal operation after the short is removed, no excessive heat, odor, or plastic				
		deformation shall occur, no safety hazard				
	Operation Temperature	-25°C ~+50°C (see derating curve)				
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load				
Environmental	Storage Temperature	-10°C~ +35°C				
	Storage Humidity	<75%RH				
	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec .				
	Radiation	Meeting EN55032, FCC part 15, Class B				
Safety & EMC	Conduction	Meeting EN55032, FCC part 15, Class B				
Requirement	Safety Standards	Meet all requirements of : UL62368-1, CSA C22.2NO.62368-1-14, IEC/EN60335-1, IEC/EN61558-2-16, IEC/EN62368-1				
	MTBF	Calculated by MIL-HDBK-217-F2 200K Hours Minimum @230VAC input, 50deg.C				
Reliability		The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an				
Requirement	Burn-In Test	ambient temperature of 30~45 degrees C				
		The units do not including PINs of input and output , and dimension is :				
Mechanical	Physical Size	(L)65*(W)35*(H)24.5±0.5mm (see appearance drawing)				
	Net Weight	Approximately 92 grams per product unit.				
	1					

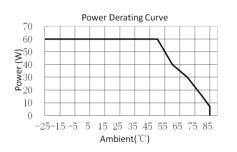
ONE OUTPUT 60W

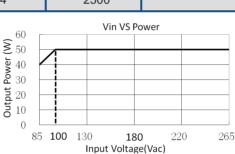
MAIN FEATURES

- Small Compact Size PCB Mount
- Single Output
- Output Range : 5VDC 24VDC
- Input Range: 85VAC 265VAC/47 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption = 0.1W
- Better Energetic Efficiency: Meet Requirements
 Of Energy Star And EC Code Of Conduct
- Encapsulated Design PCB Total Power Solution

- Safety: Complies with IEC/EN61558-2-16, IEC/ EN62368-1, IEC/EN60335-1, UL62368-1, CSA C22.2NO.62368-1-14, CE.
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emissions Conform To EN55032,FCC Part15 CLASS B
- Immunity Conform To: IEC/EN61000-3-2 CLASS A, EN61000-3-3, EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5,EN61000-4-6, EN61000-4-8 EN61000-4-11

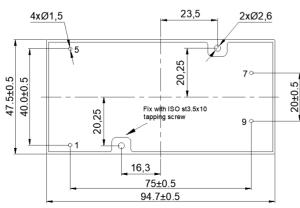
Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Load Regulation (%)	Max.Operating Ambient (°C)	Min. Part Efficiency (%)
47261	50	5	10000	± 5		82
47262		9	6600			
47263		12	5000		50	
47264	60	15	4000	± 3	30	85
47265		18	3300			
47266		24	2500			



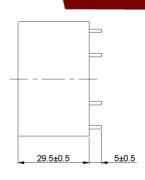


DIMENSIONS and PINOUT









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View From Pins Side







Мос	del: 60 Watt	Specification
	Rated input Voltage	100~240Vac Or 140VDC-340VDC
	Input Voltage Range	85~265Vac Or 120VDC-370VDC
AC Input	AC Input Frequency Range	47Hz~63Hz
Characteristics	Rated AC Input Frequency	50/60Hz
	Input Current	1.5A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.15W Max (Meet Requirements Of Energy Star And EC Code Of Conduct)
	Output Voltage Accuracy	± 3% (9V, 12V, 15V, 18V, 24V Types) ± 5% (5V Type)
	Output Voltage Line Regulation	± 3% (9V, 12V, 15V, 18V, 24V Types)
DC Output		± 5% (5V Types)
Characteristics	Output Voltage Load	± 3%(9V,12V,15V,18V,24V Types)
	Regulation Ripple & Noise	± 5% (5V Type) Max 200mVp-p @Rated AC input (The measuring will be terminated with a
		47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	See table (Meet Requirements Of Energy Star And EC Code Of Conduct)
	Over Current Protection	The power supply shall automatic protection. The power supply shall auto-recovery normal operation after the deformation is removed. No excessive heat, odor, or plastic
Protection		deformation shall occur, no safety hazard
Characteristics	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 2 hours; The short may be applied before power on, or after power on; The power supp shall resume normal operation after the short is removed, no excessive heat, odor,
		or plastic deformation shall occur, no safety hazard
	Operation Temperature	-25°C ~ + 50'C (see derating curve)
Environmental	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
	Dielectric Strength	Primary to Secondary : 4000Vac 5mA, 3 sec.
Safety & EMC	Radiation	Meeting EN55032, FCC part 15, Class B
Requirement	Conduction	Meeting EN55032, FCC part 15, Class B
	Safety Standards	Meet all requirements of : UL62368-1, CSA C22.2NO.62368-1-14, IEC/EN60335-1, IEC/EN61558-2-16, IEC/EN62368-1
Reliability	MTBF	Calculated by MIL-HDBK-217-F2 200K Hours minimum @230VAC input, 50deg.C
Requirement	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 245 grams per product unit.
Guarantee	This product meet to RoHS	standard

Application notes



1 – Storage Guide: Encapsulated type product: Storage temperature: -10°C to +35°C, Storage humidity: <75%RH Non-encapsulated type product: Storage temperature: +5°C to +35°C, Storage humidity: <75%RH

2 – Shelf life Guide :

Encapsulated type product:

To ensure best power supply reliability and life, the customer shall limit the power supply shelf life to no longer than 6 months after delivery. The maximum recommended period before the power supply shall be powered is 18 months from the power supply date code.

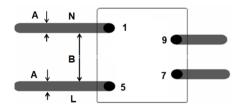
Non-encapsulated type product:

To ensure best power supply reliability and life, the customer shall limit the power supply shelf life to no longer than 6 months after delivery. The maximum recommended period before the power supply shall be powered is 12 months from the power supply date code.

3 – General Storage Conditions:

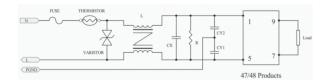
MYRRA power supplies should be stored in their original packaging before use. In the warehouse, there should not be harmful gas, inflammable, explosive products, corrosive chemical products, strong mechanical vibration, shock and strong magnetic field effects. The package box should be stored above ground by at least 20cm height, and 50cm away from any wall, thermal source, and vent.

4- Safety and recommend wiring : linewidth A≥2mm, B≥5mm.



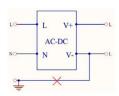
5- Recommended circuit for applications requiring higher EMC performance :

The 47/48 series are already certified as compliant to EN55022 and EN55014 CLASS B for emc. For this compliance no additional external components are required. Should a more stringent emc performance be required the circuit below can be proposed

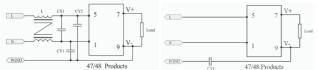


6 - Application of the connection to ground :

This application is not supported for by Myrra SMPS products



The following proposed circuit may assist :



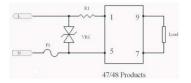
Fuse: recommended parameters : 5A to 10A/250Vac, Time-lag type. THERMISTOR: recommended parameters : 2A, 5Ω, 1.8W to 5A D10,2.5Ω,2.4W. Varistor: recommended parameters : 140471,300Vac, maximum energy 118 Joule. L is a common mode inductor : recommended parameters : 10mH to 30mH CX is a X2 capacitor : recommended parameters : 0.1uF to 0.22uF/275Vac CY1 and CY2 are Y capacitors : recommended parameters : 10MQ to 3.0 MQ. R is a resistor : recommended parameters : 10MΩ to 3.0 MQ.

L : is a common mode inductor, the recommended parameters: 10mH to 30mH CX1 : is an X2 capacitor, the recommended parameters : 0.1uF to 0.22uF/275Vac CY1 and CY2 are Y capacitors, the recommended parameters : 1000pF to 2200pF/400V



7 – High surge circuit :

The 47 / 48 Series is tested and certified for a surge level in accordance with IEC61000-4-5 as standard without requiring any additional external components. To extend the surge level to 6KV the external circuit below can be proposed.



VR1 is a varistor, the recommended parameters : 14D471, 300Vac, maximum energy 118 Joule. R1 is a wire-wound resistor, the recommended parameters : 10R/1W to 10R/3W, resistance wire $\Phi 0.1$ to 0.23mm. F1 is a fuse, the recommended parameters : 6.3A to 10A/250Vac, Time-lag type.

The information contained in this document is subject to change without notice.

Modified and Custom Solutions

TECHNICAL SERVICES :

- Alternative DC Output Voltages
- Single, Dual or Triple OutputVoltages
- Addition of Signal Pins for AC OK, Remote on/off, sense etc.
- Alternative Power Rating
- Revised 'Hold-up' timing to suit System needs
- Customer specific product 'Branding/Labelling'
- Specific Power Supply Manufacturing Functional Test Profile
- Integrating the Power Supply on the System PCB
- Alternative Power Supply Housing
- Revised DC Output Filtering

CUSTOMER SERVICES :

- Existing Designs for Modified Standards
- Flexible Manufacturing Batch Sizes
- European Stock-holding locations
- European Engineering and Logistics Support
- Country Specific Distribution Partners
- Manufacturing dynamics for Volume Fluctuations
- Myrra Quality Controlled Design and Manufacturing
- Fast Sample Service



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