aimtec
Your Power Partner

Series AM30EW-Z

30 Watt | DC-DC Converter



FEATURES:

- Ultra Wide 4:1 input range
- Efficiency up to 91%
- Soft start
- Continuous short circuit protection
- Remote on/off control
- Input/Output Isolation 1600VDC
- Operating temperature -40ºC to + 75ºC
- RoHS compliant

RoHS CE

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Maximum Capacitive Load (uF)	Efficiency (%)
AM30EW-2403SZ	9-36	3.3	7.5	20000	89
AM30EW-2405SZ	9-36	5	6	14000	90
AM30EW-2405.1SZ	9-36	5.1	6	14000	90
AM30EW-2412SZ	9-36	12	2.5	2000	89
AM30EW-2415SZ	9-36	15	2	2000	89
AM30EW-4803SZ	18-75	3.3	7.5	20000	89
AM30EW-4805SZ	18-75	5	6	14000	90
AM30EW-4805.1SZ	18-75	5.1	6	14000	90
AM30EW-4812SZ	18-75	12	2.5	2000	90
AM30EW-4815SZ	18-75	15	2	2000	91

Add suffix “-K” for optional heat sink

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Maximum Capacitive Load (uF)	Efficiency (%)
AM30EW-2405DZ	9-36	±5	±3	±3000	89
AM30EW-2412DZ	9-36	±12	±1.25	±1300	89
AM30EW-2415DZ	9-36	±15	±1	±1300	89
AM30EW-4805DZ	18-75	±5	±3	±3000	90
AM30EW-4812DZ	18-75	±12	±1.25	±1300	89
AM30EW-4815DZ	18-75	±15	±1	±1300	89

Add suffix “-K” for optional heat sink

Models
Triple output

Model	Input Voltage (V)	Output Voltage (V)	Output Auxiliary Voltage (V)	Output Current max (A)	Maximum Capacitive Load (uF)	Efficiency (%)
AM30EW-240312TZ	9-36	3.3	±12	5 / ±0.42	15000 / ±220	88
AM30EW-240315TZ	9-36	3.3	±15	5 / ±0.33	15000 / ±220	88
AM30EW-240512TZ	9-36	5	±12	4 / ±0.42	8000 / ±220	89
AM30EW-240515TZ	9-36	5	±15	4 / ±0.33	8000 / ±220	89
AM30EW-480312TZ	18-75	3.3	±12	5 / ±0.42	15000 / ±220	89
AM30EW-480315TZ	18-75	3.3	±15	5 / ±0.33	15000 / ±220	88
AM30EW-480512TZ	18-75	5	±12	4 / ±0.42	8000 / ±220	90
AM30EW-480515TZ	18-75	5	±15	4 / ±0.33	8000 / ±220	90

Add suffix “-K” for optional heat sink

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	24	9-36		VDC
	48	36-75		VDC
Filter	π (Pi) Network			
Start up time		30		ms
Absolute Maximum Rating	24	-0.7 ~ 50		VDC
	48	-0.7 ~ 100		VDC
Peak Input Voltage time			100	ms
On/Off control	ON: 3 ~12VDC or open circuit			
	OFF: 0 ~ 1.2VDC or Short circuit between pin 2 and pin 3 (Idle current: 5mA, typ.)			
No Load Input Current	Single 3.3/5/5.1Vout, dual ±5Vout, triple 9-36Vin		100	mA
	Other models		50	mA
Under voltage lockout	24V ON/OFF	8.6 / 7.9		VDC
	48V ON/OFF	17.8 / 16		VDC
Input reflected current *		20		mAp-p

* The input reflected ripple current should be measured with a 4.7μH inductor and a 33μF input capacitor (ESR<1Ω at 100 KHz)

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1600	VDC
Case/Input tested voltage	60 sec	1600		VDC
Resistance		1000		MOhm
Capacitance		1000		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy (Single and Dual)		±1		%
Voltage accuracy (Triple)	Main / Auxiliary	±1 / ±5		
Cross Regulation (Dual)	25% load 1st output - 100% load on 2nd load	±5		%
Cross Regulation (Triple)	Main 100%, 25% load on Aux1 and 100% on Aux2	±5		
Over voltage protection	Zener diode clamp			
Over current protection		150		%
Short Circuit protection	Continuous			
Short circuit restart	Auto-Recovery			
Thermal Shutdown	Case temp	115		°C
Line voltage regulation (Single)	HL-LL		±0.5	%
Line voltage regulation (Dual)	HL-LL		±0.5	%
Line voltage regulation (Triple)	HL-LL Main / Auxiliary		±1 / ±5	%
Load voltage regulation (Single)	0-100% load		±0.5	%
Load voltage regulation (Dual)	Balanced load		±1	%
Load voltage regulation (Triple)	10~100% Main / Auxiliary		±1 / ±5	%
Temperature coefficient		±0.02		%/°C
Ripple & Noise (Single and Dual) *	20MHz bandwidth		100	mV p-p
Ripple & Noise (Triple) *	20MHz bandwidth, Main / Auxiliary		50 / 75	mV p-p
Voltage adjustment range (single)			±10	%
Minimum Load Current	Triple output models	10		% of Max

* Measured with a 1μF ceramic capacitor.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	330		KHz
Operating temperature	Derating above 50	-40 to +75		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			105	°C
Derating		2		%/ °C
Cooling	Free Air Convection			
Humidity			95	% RH

Case material	Nickel coated Copper			
Weight		35		g
Dimensions (L x W x H)	2.00 x 1.00 x 0.4 inches 50.80 x 25.40 x 10.16 mm			
MTBF	Single & Dual: >435 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			
	Triple: >320 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25ºC)			
Maximum soldering temperature	1.5mm from case for 10 sec		260	°C
Transient recovery time	25% load step change	250		uS
Transient recovery deviation	25% load step change		±3	%

Safety Specifications

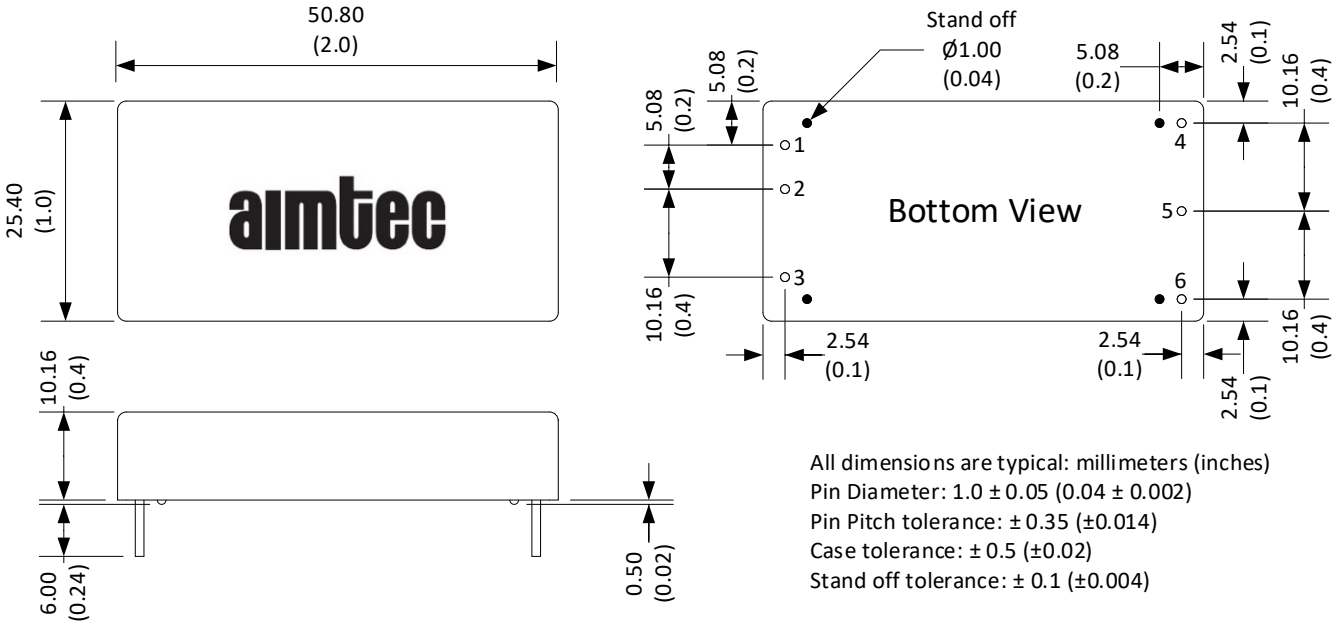
Parameters	
Agency Approval	CE
Standards	EN55032 Class A, with the recommended circuit
	IEC61000-4-2, Perf. Criteria A
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-5, Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A

Pin Out Specifications

Pin	Single	Dual	Triple
1	+ V Input	+ V Input	+ V Input
2	- V Input	- V Input	- V Input
3	On/Off Control	On/Off Control	On/Off Control
4	+ V Output	+ V Output	+ Vaux Output
5	-V Output	Common	- Vaux Output
6	Trim	- V Output	Common
7	No Pin	No Pin	+ V Output

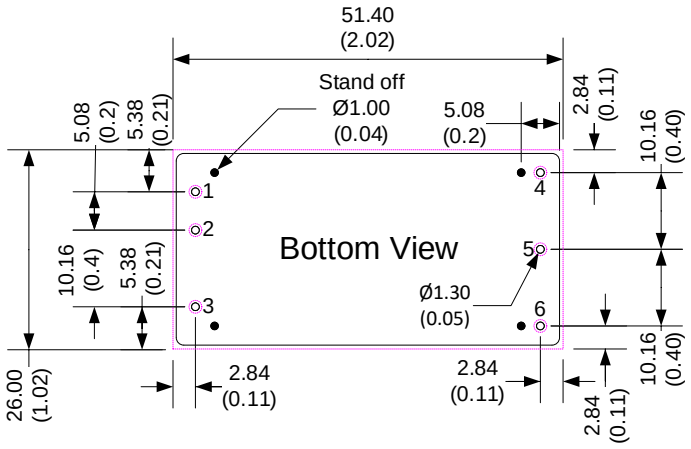
Dimensions

Single and Dual Output Models



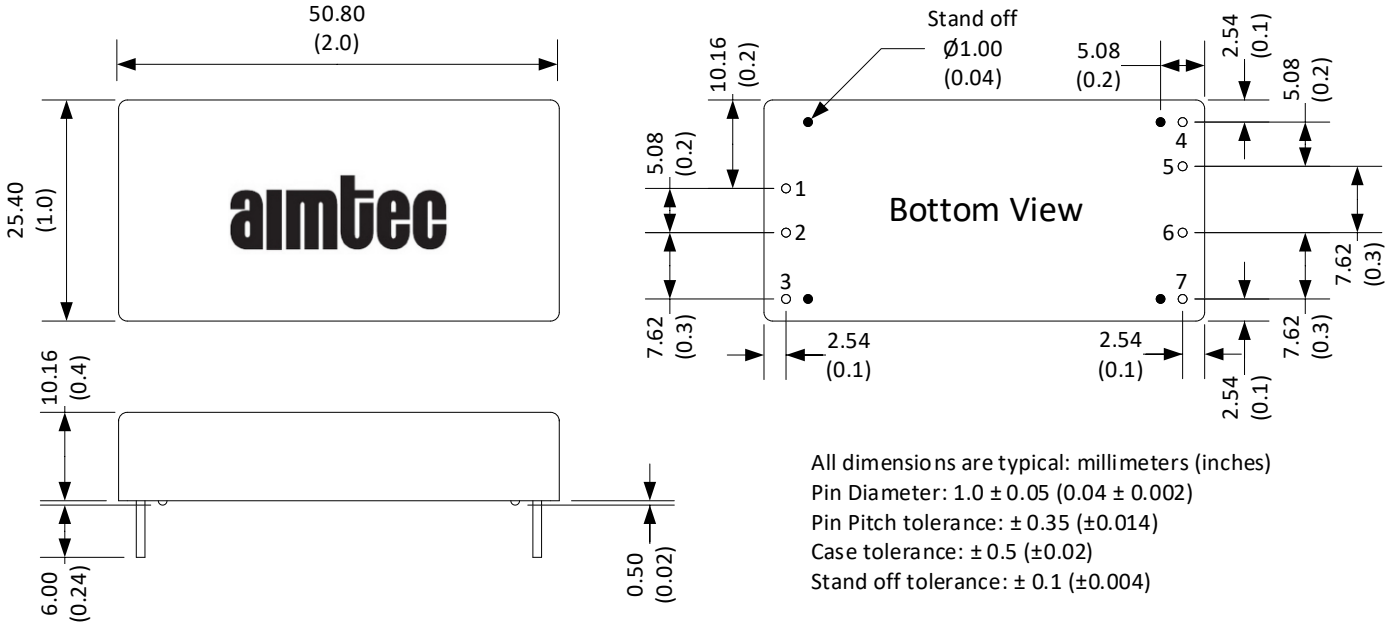
All dimensions are typical: millimeters (inches)
Pin Diameter: 1.0 ± 0.05 (0.04 ± 0.002)
Pin Pitch tolerance: ± 0.35 (±0.014)
Case tolerance: ± 0.5 (±0.02)
Stand off tolerance: ± 0.1 (±0.004)

Single and Dual Output Models



All dimensions are typical: millimeters (inches)
Pin Diameter: 1.0 ± 0.05 (0.04 ± 0.002)
Pin Pitch tolerance: ± 0.35 (±0.014)
Case tolerance: ± 0.5 (±0.02)
Stand off tolerance: ± 0.1 (±0.004)
Through hole (black) 1~6: Ø1.3 (0.051)
Top view pad (green) 1~6: Ø1.5 (0.059)
Bottom view pad (pink) 1~6: Ø2.6 (0.102)

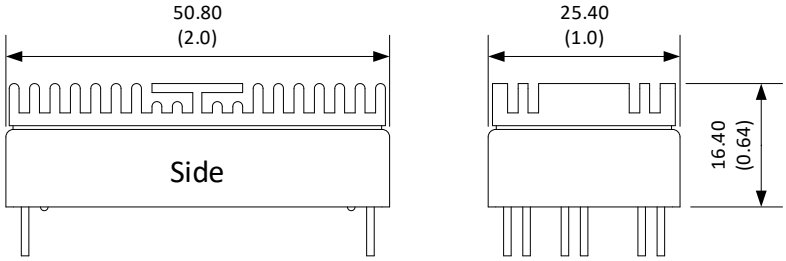
Triple Output Models



All dimensions are typical: millimeters (inches)
Pin Diameter: 1.0 ± 0.05 (0.04 ± 0.002)
Pin Pitch tolerance: ± 0.35 (±0.014)
Case tolerance: ± 0.5 (±0.02)
Stand off tolerance: ± 0.1 (±0.004)

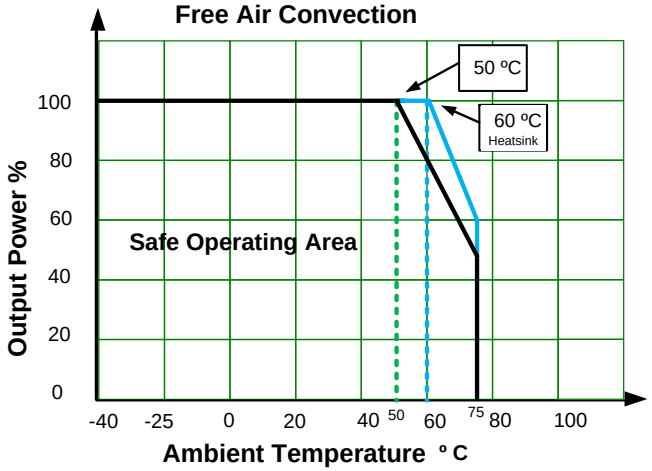
Dimensions with Optional Heat Sink





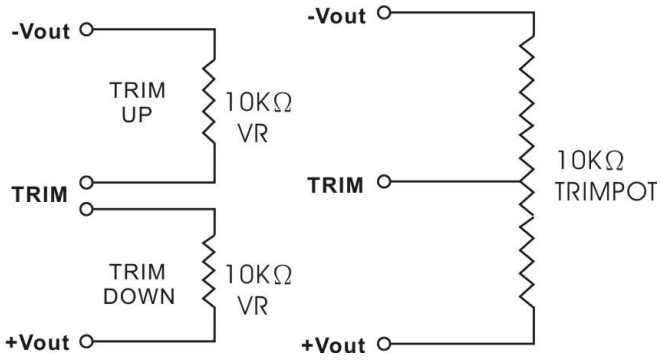
Notes: Add “-K” suffix for ordering, heat sink is affixed with thermally dissipative adhesive tape.
See derating graph for temperature performance. Heat sink material is anodized (black) aluminum, adds weight 11.3g to total mass (46.3g).

Derating

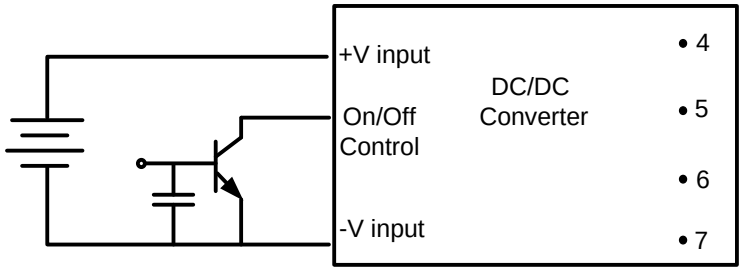


Extended temperature performance can be achieved with optional heat sink. (add suffix “–K” to part number)

Trimming



On/Off Control

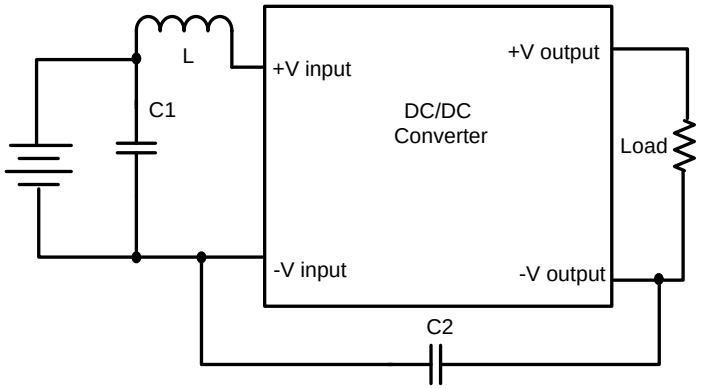


Positive logic turns on the module during high logic and off during low logic.
Module can be controlled by an external switch between the On/Off CTRL terminal and –Vinput terminal. The switch can be either open collector or open drain.

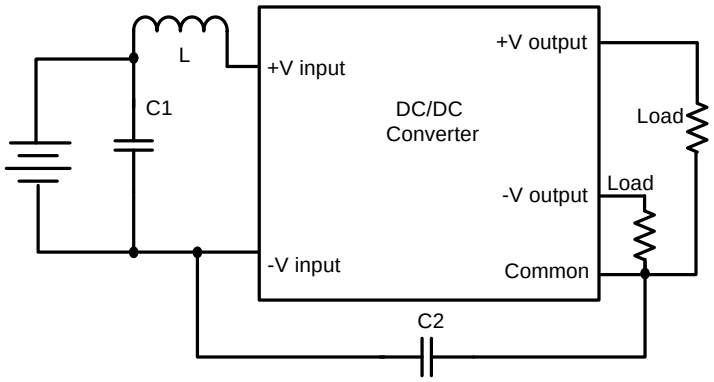
Recommended Circuits

C1	L	C2
100uF, 100V	12uH	1206, 470pF, 2KV

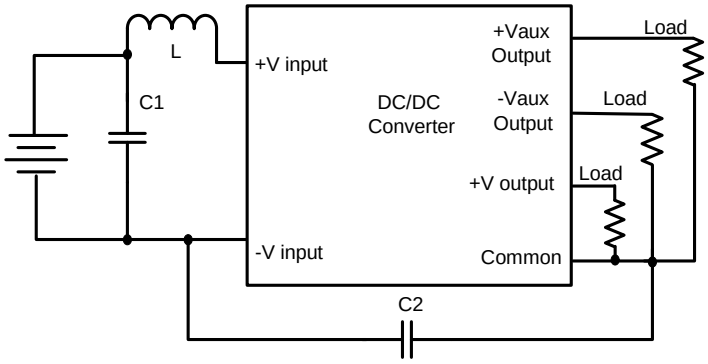
Conducted/Radiated Emissions
Single Output



Conducted/Radiated Emissions
Dual Output

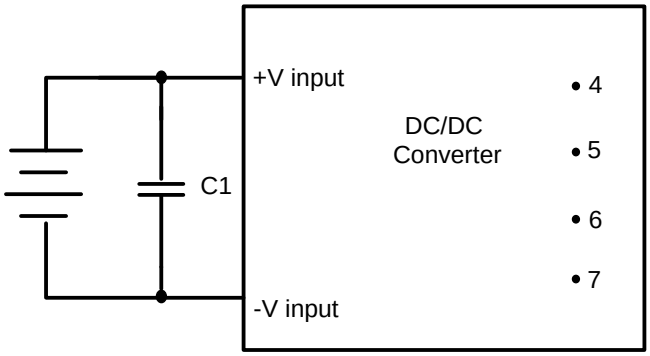


Conducted/Radiated Emissions
Triple Output



Surge/EFT

C1
220uF, 100V



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