Series AM15TW-Z

15 Watt | DC-DC Converter



FEATURES:

- Ultra Wide Input Range 4:1
- 1600 VDC Isolation
- Efficiency up to 90%
- Soft Start
- Remote On/Off Function
- No Minimum Load Required
- -40ºC to +85ºC Operating Temperature Range
- Short Circuit & Over Voltage Protection
- DIP 24 Package
- Low No Load Input Current

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Maximum Capacitive load (µF)	Efficiency (%)
AM15TW-2403SZ	9-36	3.3	4000	1600	4700	88
AM15TW-24051SZ	9-36	5.1	3000	1600	3300	90
AM15TW-2412SZ	9-36	12	1250	1600	600	90
AM15TW-2415SZ	9-36	15	1000	1600	400	90
AM15TW-4803SZ	18-75	3.3	4000	1600	4700	89
AM15TW-48051SZ	18-75	5.1	3000	1600	3300	89
AM15TW-4812SZ	18-75	12	1250	1600	600	90
AM15TW-4815SZ	18-75	15	1000	1600	400	90

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Maximum Capacitive load (µF)	Efficiency (%)
AM15TW-2405DZ	9-36	±5	±1500	1600	±1500	86
AM15TW-2412DZ	9-36	±12	±625	1600	±288	89
AM15TW-2415DZ	9-36	±15	±500	1600	±200	90
AM15TW-4805DZ	18-75	±5	±1500	1600	±1500	86
AM15TW-4812DZ	18-75	±12	±625	1600	±288	89
AM15TW-4815DZ	18-75	±15	±500	1600	±200	90

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 48	9-36 18-75		VDC
Filter	π (Pi) Network			
Transient recovery time	Nominal Vin, 25% load step change	250		µs
Transient response deviation	Nominal Vin, 25% load step change		±3	%
Start up time	Nominal Vin and constant resistive load	20		ms
Absolute Maximum Rating	24 Vin models 48 Vin models	-0.7-50 -0.7-100		VDC
Peak Input Voltage time			1000	ms
Input reflected ripple current	With a 12µH inductance and a 47µF capacitor		20	mA p-p
Quiescent Current			15	mA
On/Off Control	ON – High (3.0 ... 12Vdc) or open circuit; OFF – Low (0 ... 1.2Vdc) or Short circuit pin1 and pin 2/3 OFF idle current: 5.0 mA typ			

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1600	VDC
Tested Case/Input and Output		1600		VDC
Resistance		>1000		MOhm
Capacitance		2000		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy			±1	%
Voltage balance	1st output 25-100% load, 2nd output 100% load		±5	%
Line voltage regulation	Single, HL-LL		±0.2	%
	Dual, HL-LL		±0.5	%
Load voltage regulation	Single, 0% Load to 100% load		±0.5	%
	Dual, 0% to 100% load, balance load		±1.0	%
Over voltage protection	Zener diode clamp, 3.3Vout	3.9		VDC
	Zener diode clamp, 5.1Vout	6.2		VDC
	Zener diode clamp, 12Vout	15		VDC
	Zener diode clamp, 15Vout	18		VDC
	Zener diode clamp, ±5Vout	±6.2		VDC
	Zener diode clamp, ±12Vout	±15		VDC
	Zener diode clamp, ±15Vout	±18		VDC
Over current protection	Full Load	150		% of Iout
Short Circuit protection	Continuous			
Short circuit restart	Auto recovery			
Ripple & Noise*	20MHz Bandwidth		60	mVp-p

* Measured with a 1µF ceramic capacitor

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		250 to 330		KHz
Operating temperature	Full Load with derating above 60ºC	-40 to +85		°C
Storage temperature		-55 to +125		°C
Max Case temperature			105	°C
Temperature coefficient		±0.02		%/°C
Derating	Above 60ºC	2.5		%/°C
Cooling	Free air convection			
Humidity			95	% RH
Case material	Nickel-coated Copper			
Weight		20.0		g
Dimensions (L x W x H)	Tolerance ±0.5 mm or ±0.02 inches	1.25 x 0.8 x 0.4inches 31.8 x 20.3 x 10.2mm		
MTBF	> 410 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			
Manual soldering temperature	1.5mm from case for 10sec		260	°C

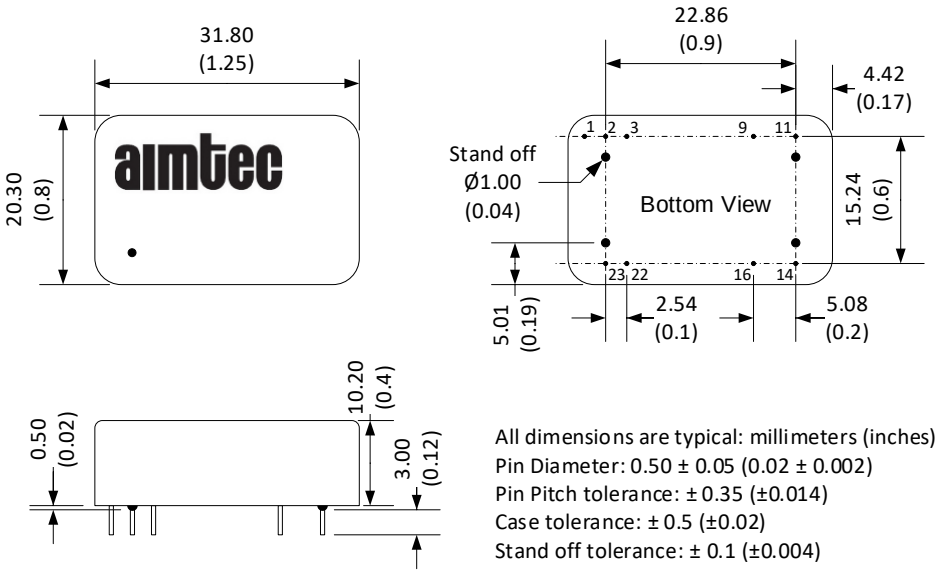
Safety Specifications

Parameters	
Agency Approval	CE
Standards	Designed to meet IEC/EN/UL60950-1, 62368-1
	EN55032 Class A
	IEC61000-4-2, Perf. Criteria B
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria B (requires 2 external cap 330µF/100V or 1 cap 680µF/100V for parallel connection)
	IEC61000-4-5, Perf. Criteria B (requires 2 external cap 330µF/100V or 1 cap 680µF/100V for parallel connection)
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A

Pin Out Specifications

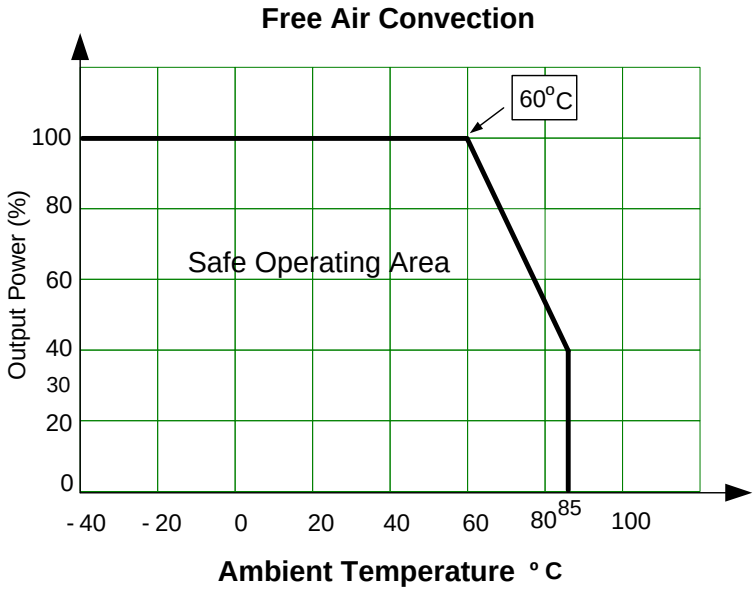
Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-V Input	-V Input
3	-V Input	-V Input
9	No Pin	Common
11	N.C	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

Dimensions



All dimensions are typical: millimeters (inches)
Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)
Pin Pitch tolerance: ± 0.35 (±0.014)
Case tolerance: ± 0.5 (±0.02)
Stand off tolerance: ± 0.1 (±0.004)

Derating



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