



FEATURES:

- Over Voltage Protection
- Wide 4:1 input range
- High efficiency up to 88%
- Over current Protection
- Very low no load power consumption of 0.12W
- Input / Output Isolation 1500, 3000 & 6000VDC
- Under voltage lockout
- Continuous short circuit protection

Models
Single output



Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Max. Capacitive Load (µF)	Isolation (VDC)	Efficiency (%)
AM6TW-2403S-NZ	9-36	3.3	1500	1800	1500	79
AM6TW-2405S-NZ	9-36	5	1200	1000	1500	83
AM6TW-2412S-NZ	9-36	12	500	470	1500	87
AM6TW-2415S-NZ	9-36	15	400	220	1500	88
AM6TW-2424S-NZ	9-36	24	250	100	1500	87
AM6TW-4803S-NZ	18-75	3.3	1500	1800	1500	80
AM6TW-4805S-NZ	18-75	5	1200	1000	1500	84
AM6TW-4812S-NZ	18-75	12	500	470	1500	87
AM6TW-4815S-NZ	18-75	15	400	220	1500	88
AM6TW-4824S-NZ	18-75	24	250	100	1500	87
AM6TW-2403SH30-NZ	9-36	3.3	1500	2200	3000	79
AM6TW-2405SH30-NZ	9-36	5	1200	2200	3000	83
AM6TW-2409SH30-NZ	9-36	9	667	1000	3000	85
AM6TW-2412SH30-NZ	9-36	12	500	680	3000	88
AM6TW-2415SH30-NZ	9-36	15	400	470	3000	88
AM6TW-2424SH30-NZ	9-36	24	250	330	3000	87
AM6TW-4803SH30-NZ	18-75	3.3	1500	2200	3000	79
AM6TW-4805SH30-NZ	18-75	5	1200	2200	3000	83
AM6TW-4812SH30-NZ	18-75	12	500	680	3000	88
AM6TW-4815SH30-NZ	18-75	15	400	470	3000	88
AM6TW-4824SH30-NZ	18-75	24	250	330	3000	87
AM6TW-2405SH60-NZ	9-36	5	1200	2700	6000	81
AM6TW-2406SH60-NZ	9-36	6	1000	2200	6000	81
AM6TW-2409SH60-NZ	9-36	9	667	1800	6000	83
AM6TW-2412SH60-NZ	9-36	12	500	1000	6000	84
AM6TW-2415SH60-NZ	9-36	15	400	680	6000	85
AM6TW-2424SH60-NZ	9-36	24	250	470	6000	84
AM6TW-4805SH60-NZ	18-75	5	1200	2700	6000	81
AM6TW-4809SH60-NZ	18-75	9	667	1800	6000	83
AM6TW-4812SH60-NZ	18-75	12	500	1000	6000	84
AM6TW-4815SH60-NZ	18-75	15	400	680	6000	85
AM6TW-4824SH60-NZ	18-75	24	250	470	6000	84

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Max. Capacitive Load (µF)	Isolation (VDC)	Efficiency (%)
AM6TW-2405D-NZ	9-36	±5	±600	±680	1500	83
AM6TW-2409D-NZ	9-36	±9	±333	±220	1500	86
AM6TW-2412D-NZ	9-36	±12	±250	±330	1500	87
AM6TW-2415D-NZ	9-36	±15	±200	±220	1500	88
AM6TW-2424D-NZ	9-36	±24	±200	±100	1500	87
AM6TW-4805D-NZ	18-75	±5	±125	±680	1500	83

AM6TW-4812D-NZ	18-75	±12	±250	±330	1500	87
AM6TW-4815D-NZ	18-75	±15	±200	±220	1500	88
AM6TW-2405DH30-NZ	9-36	±5	±600	±680	3000	82
AM6TW-2412DH30-NZ	9-36	±12	±250	±330	3000	86
AM6TW-2415DH30-NZ	9-36	±15	±200	±220	3000	87

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	24 Vin	9-36		VDC
	48 Vin	18-75		
Absolute Maximum Input Voltage (1 Sec max)	24 Vin		-0.7 - 50	VDC
	48 Vin		-0.7 - 100	
Filter	π (Pi) Network			
Reflected Input ripple current		20		mA p-p
Input Under Voltage lockout	24 Vin	5.5 - 6.5		VDC
	48 Vin	14.0 - 15.5		
Startup time		10		ms

Isolation Specifications

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, <1mA	1500, 3000 & 6000		VDC
Resistance		> 1000		MOhm
Capacitance	1500 & 3000VDC isolated models	1000		pF
	6000VDC isolated models	13		

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±3		%
Balanced Load	Dual output models	±1		%
Over Voltage Protection			110 to 160	% of Vout
Short Circuit protection	Continuous			
Short circuit restart	Auto-recovery			
Over Current Protection	1500 & 3000VDC isolated models 6000VDC isolated models		110 to 190 110 to 260	% of Iout
Line voltage regulation		±0.5		%
Load voltage regulation	5% to 100% load	±0.5		%
Cross voltage regulation 1500VDC Isolation	50% main load, secondary 10 to 100% load		±0.5	%
Cross voltage regulation 3000VDC Isolation	50% main load, secondary 10 to 100% load		±5	%
Temperature coefficient		±0.03		%/°C
Ripple & Noise		120		mV p-p
Transient Recovery Time	25% Load Step Change	300		µS
Transient Response Deviation	25% Load Step Change	±5		%

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		300		KHz
Operating temperature	Derating above +71	-40 to +85		°C
Storage temperature		-55 to +125		°C
Max Case temperature			100	°C
Cooling	Free air convection			
Humidity			95	% RH
Soldering Temperature	1.5mm from lead for 10 sec.		300	°C
Case material	1500VDC Isolated models	Aluminum Alloy		
	3000 & 6000VDC Isolated models	Black flame-retardant heat-proof plastic		
Weight	1500VDC Isolated models	14		g
	3000 & 6000VDC Isolated models	13		
Dimensions (L x W x H)	1500VDC Isolated models	1.26 x 0.79 x 0.42 inches	32 x 20.00 x 10.80 mm	

	3000 & 6000VDC Isolated models	1.24 x 0.80 x 0.40 in	31.60 x 20.30 x 10.20 mm
MTBF	>1 000 000hrs(MIL-HDBK -217F, Ground Benign, t=+25°C)		

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.

Environment Specifications

Test	Parameters	Conditions
Vibration	Test mode	10-55Hz, speed 0.05Hz/s
	Acceleration	10g, 30min, every axis tested
	Converter operation	Before and after test, body mounted (on chassis)

Safety Specifications

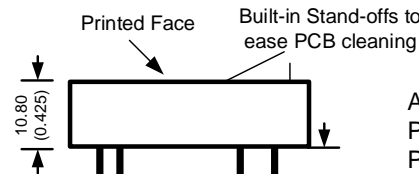
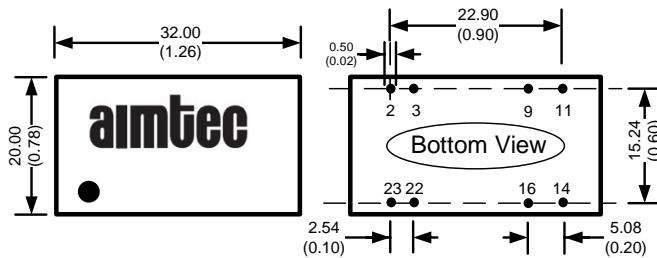
Parameters	
Approval	UL (without AM6TW-2409D-NZ, AM6TW-2424D-NZ, AM6TW-2409SH30-NZ and 6000VDC isolated models) IEC/UL 60950-1
Standards	EN55022, class A, (see the recommended EMC circuits)
	IEC61000-4-2 (ESD, contact ±4KV) Criteria B
	IEC61000-4-3 (Radiated immunity, 10V/m) Criteria A
	IEC61000-4-4 (EFT, ±2KV) Criteria B, (see the recommended EMC circuits)
	IEC61000-4-5(Surge, ±2KV) Criteria B, (see the recommended EMC circuits)
	IEC61000-4-6(CS, 3Vrms) Criteria A
	IEC61000-4-29(IVDDSI, 0-70%) Criteria B

Pin Out Specifications

Pin	1500VDC & 3000VDC	
	Single	Dual
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

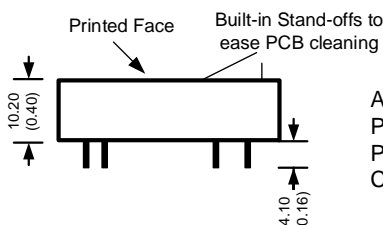
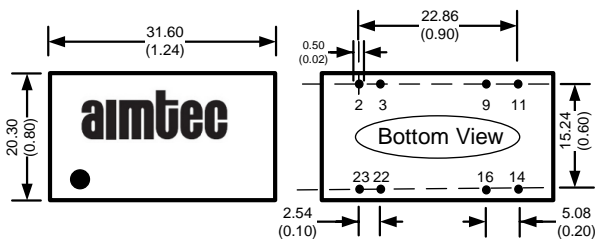
Dimensions

1500VDC Isolated models



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)

3000VDC Isolated models

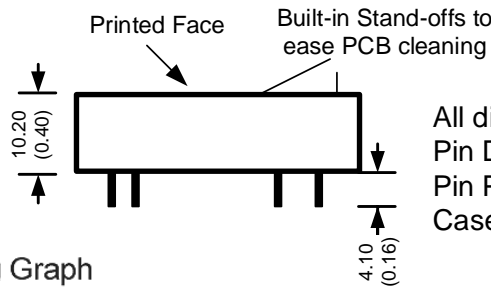
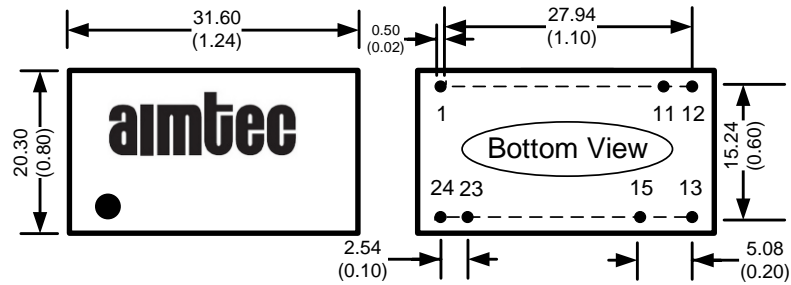


All dimensions are typical: millimeters (inches)
Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)
Pin Pitch Tolerance: ± 0.35 (±0.014)
Case Tolerance: ± 0.5 (±0.02)

Pin Out Specifications

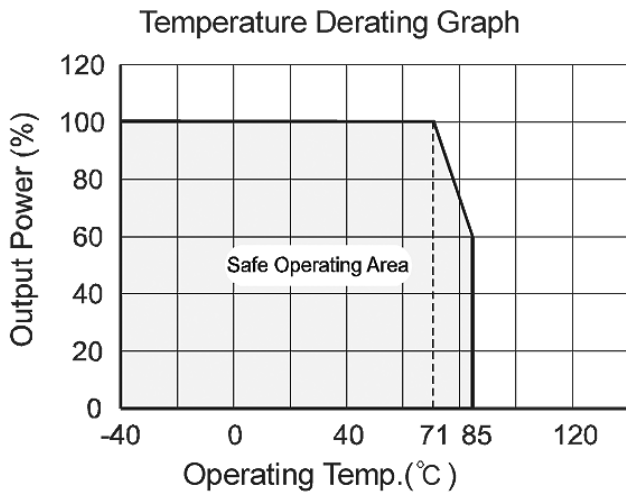
Pin	6000VDC Single
1	+V Input
11	No Pin
12	-V Output
13	+V Output
15	No Pin
23/24	-V Input

Dimensions
6000VDC Isolated models

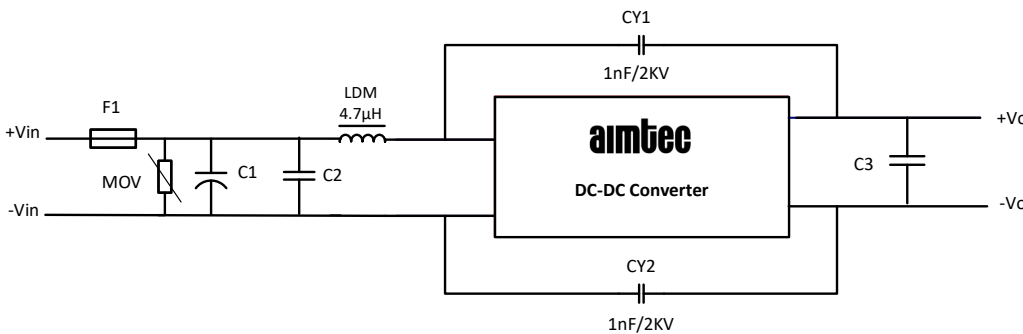


All dimensions are typical: millimeters (inches)
 Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)
 Pin Pitch Tolerance: ± 0.35 (± 0.014)
 Case Tolerance: ± 0.5 (± 0.02)

Derating curve

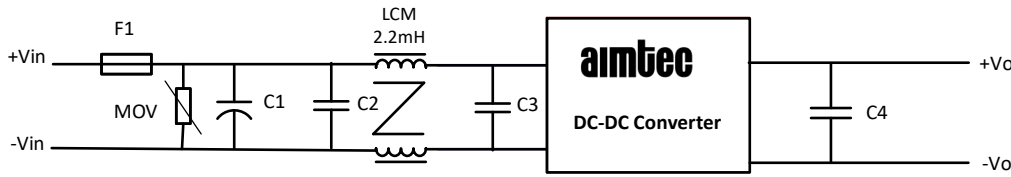


Recommended EMC Circuit 1500VDC isolated models and 3000VDC dual output models



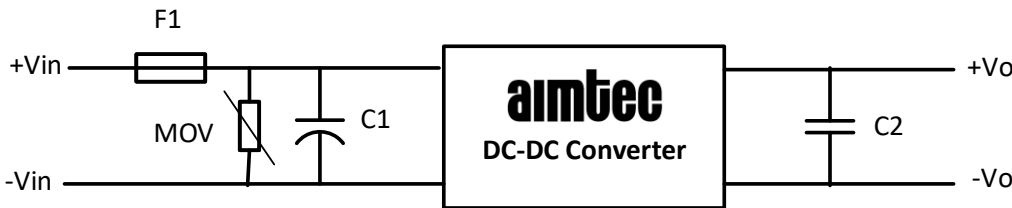
	24V input	48V input
MOV	S14K35	S14K60
C1	330µF/50V	330µF/100V
C2	1µF/50V	1µF/100V
C3	10µF/50V	10µF/100V

Recommended EMC Circuit 3000VDC single output models



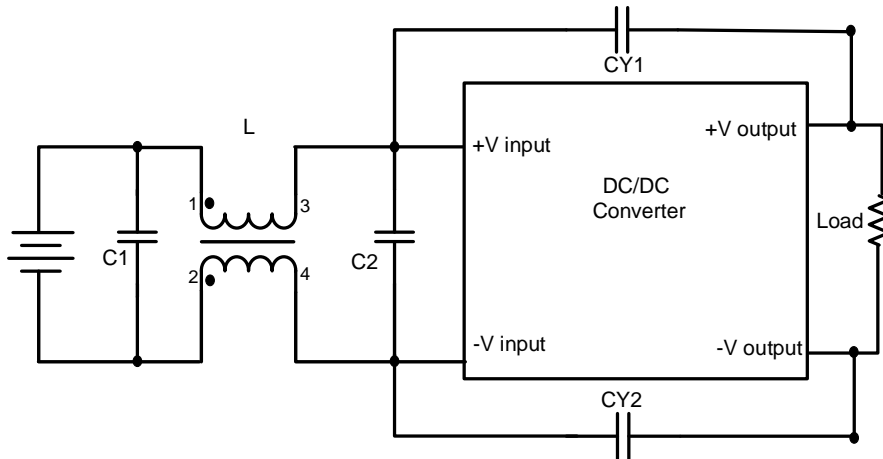
	24V input	48V input
MOV	S14K35	S14K60
C1	330 μ F/50V	330 μ F/100V
C2,C3	2.2 μ F/50V	2.2 μ F/100V
C4	10 μ F/50V	10 μ F/100V

Recommended EMC Circuit 6000VDC isolated models



	24V input	48V input
MOV	S14K35	S14K60
C1	330 μ F/50V	330 μ F/100V
C2	10 μ F/50V	10 μ F/100V

Recommended Circuit 6000VDC isolated models for class B compliance



CY1, CY2	1nF/400VAC
C1,C2	2.2 μ F/50V
L1	2.2mH

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