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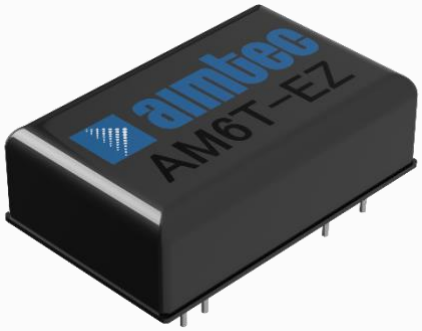
AM6T-EZ



24PIN DIL Package

The AM6T-EZ is a 6W 24PIN DIL DC/DC converter that offers great cost savings thanks to an improved manufacturing process. It also features excellent reliability and performance while offering a standard input voltage range of 4.5-9VDC as well as an output voltage of -24 to 24V. This compact 24PIN DIL design will surely benefit your new system design.

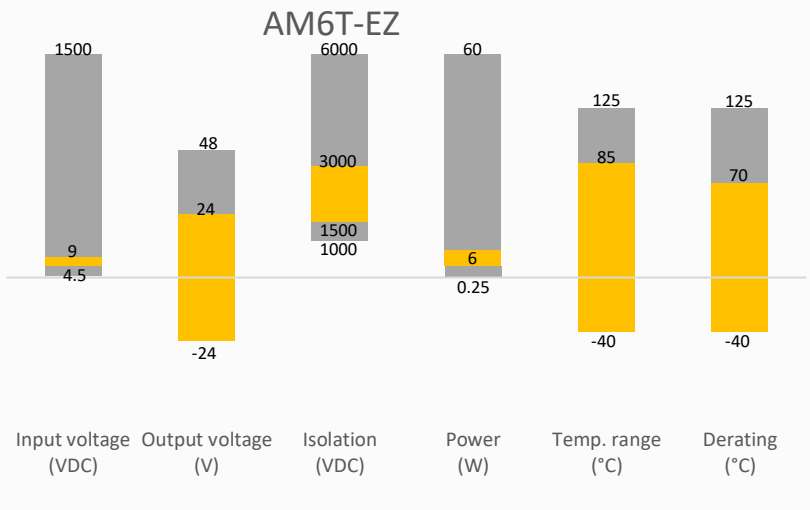
This new series offers a great operating temperature range from -40 to 85°C. Also, an isolation of 1500VDC/3000VDC for improved reliability and system safety as well as a great 1,500,000h MTBF come standard.

The AM6T-EZ is suitable for many applications such as industrial systems, portable equipment, and internet of things.

Features

- Continuous Short circuit protection
- Operating Temp: -40 °C to +85 °C
- Industry standard 24PIN DIL pin-out
- Efficiency up to 84%
- Unregulated output
- 2:1 Input Voltages Range
- Made in Taiwan

Summary



RoHS

3yr Warranty

Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Industrial

Portable Equipment

IoT

Models & Specifications

Single Output								
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current No Load / Full Load (mA / %TYP)		Output Current max (mA)	Isolation (VDC)	Maximum Capacitive Load (uF)	Efficiency Typ. (%)
AM6T-0503SEZ	5 (4.5-9)	3.3	10	1320	1500	1500	1800	75
AM6T-0505SEZ	5 (4.5-9)	5	10	1538	1200	1500	1000	78
AM6T-0509SEZ	5 (4.5-9)	9	10	1464	667	1500	680	82
AM6T-0512SEZ	5 (4.5-9)	12	10	1429	500	1500	470	84
AM6T-0515SEZ	5 (4.5-9)	15	10	1429	400	1500	220	84
AM6T-0524SEZ	5 (4.5-9)	24	10	1429	250	1500	100	84
AM6T-0503SH30EZ	5 (4.5-9)	3.3	10	1320	1500	3000	1800	75
AM6T-0505SH30EZ	5 (4.5-9)	5	10	1538	1200	3000	1000	78
AM6T-0509SH30EZ	5 (4.5-9)	9	10	1464	667	3000	680	82
AM6T-0512SH30EZ	5 (4.5-9)	12	10	1429	500	3000	470	84
AM6T-0515SH30EZ	5 (4.5-9)	15	10	1429	400	3000	220	84
AM6T-0524SH30EZ	5 (4.5-9)	24	10	1429	250	3000	100	84

Dual Output								
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current No Load / Full Load (mA / %TYP)		Output Current max (mA)*	Isolation (VDC)	Maximum Capacitive Load (uF)	Efficiency Typ. (%)
AM6T-0505DEZ	5 (4.5-9)	±5	10	1538	±600	1500	680	78
AM6T-0512DEZ	5 (4.5-9)	±12	10	1429	±250	1500	470	84
AM6T-0515DEZ	5 (4.5-9)	±15	10	1429	±200	1500	220	84
AM6T-0524DEZ	5 (4.5-9)	±24	10	1429	±125	1500	100	84
AM6T-0505DH30EZ	5 (4.5-9)	±5	10	1538	±600	3000	680	78
AM6T-0512DH30EZ	5 (4.5-9)	±12	10	1429	±250	3000	470	84
AM6T-0515DH30EZ	5 (4.5-9)	±15	10	1429	±200	3000	220	84
AM6T-0524DH30EZ	5 (4.5-9)	±24	10	1429	±125	3000	100	84

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Filter	Pi filter			
Voltage Types	Vo, Io Nom		2:1	
Surge Voltage	1sec. max.		12	V
Start-up Voltage			4.5	V
Input Under-voltage Protection		4		V

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec, leakage ≤ 1mA	1500		VDC
	60 sec, leakage ≤ 1mA, H30 models	3000		VDC
Resistance	500VDC	>1000		MΩ
Capacitance	Input / output, 100KHz / 0.1V	1000		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage Tolerance		±1	±3	%
Line Regulation			±0.5	%
Load regulation	Single (F.L To 10% Load)		±0.8	
	Dual (F.L To 10% Load)		±1.0	%
Ripple & Noise*			100	mV p-p
Temperature Coefficient	Full load		±0.03	%/°C
Transient response setting time	50% load step change	350		us

* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific details.

General Specifications

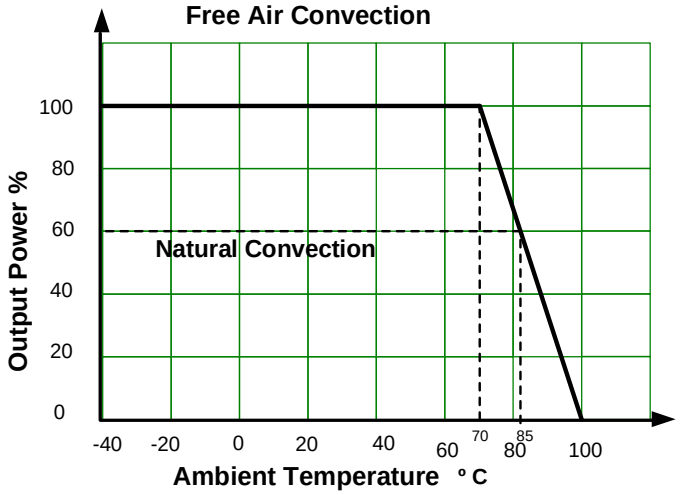
Parameters	Conditions	Minimum	Typical	Maximum	Units
Switching frequency			330		KHz
Short circuit protection	Continuous				
Over-voltage protection	Input voltage range	110		160	%Vo
Over-current protection	Input voltage range	110	140	210	%Io
Operating temperature	Derating when operating temperature ≥85°C		-40 to +85		°C
Storage temperature			-55 to +125		°C
Cooling	Free air convection				
Humidity	Non-condensing			95	% RH
Case material	H30 models		DAP		
	Others		Nickel coated with non-conductive base		
Weight	H30 models		12.8		g
	Others		16.8		g
Dimensions (L x W x H)	H30 models		1.25 x 0.80 x 0.40 inches (31.8 x 20.3 x 10.2 mm)		
	Others		1.24 x 0.79 x 0.43 inches (31.6 x 20.1 x 11.0 mm)		
MTBF	> 1 500 000 hrs (MIL-HDBK -217F, t=+25°C) / Full Load				

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.

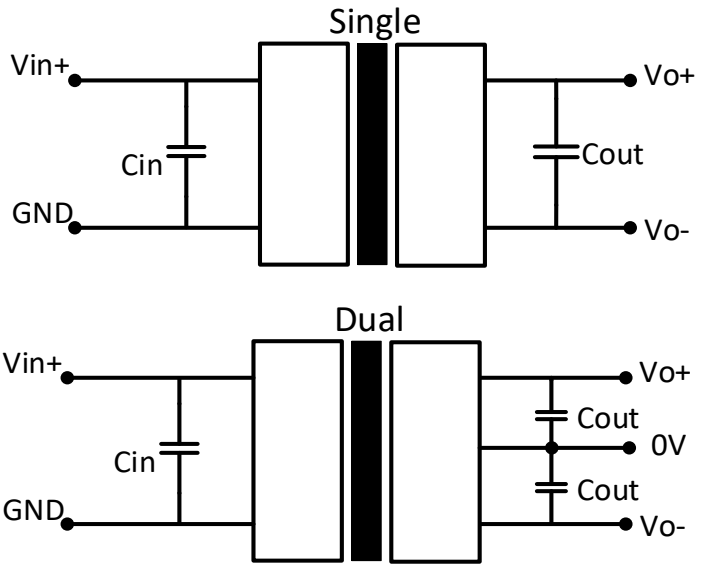
Safety Specifications

Standards	EMI - Conducted and radiated emission	CISPR32/EN55032 Class B with recommended EMC circuit
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2, Contact ±4KV, Criteria B

Derating


Free Air Convection
Natural Convection
Output Power %
100
80
60
40
20
0
-40
-20
0
20
40
60
70
80
85
100
Ambient Temperature ° C

Typical application circuit



Vin	Cin
5DC	10μF/50
24VDC	10μF/100V
48VDC	10μF/100V

Single Vout	Cout
3.3VDC	100μF/50V
5VDC	
9VDC	
12VDC	
15VDC	
24VDC	

Dual Vout	Cout
±5DC	±100μF/50V
±12VDC	
±15VDC	
±24VDC	

EMC (Class B) Compliance Circuit

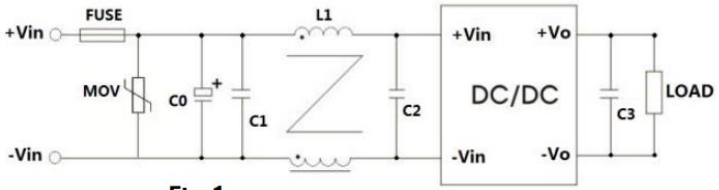


Fig.1

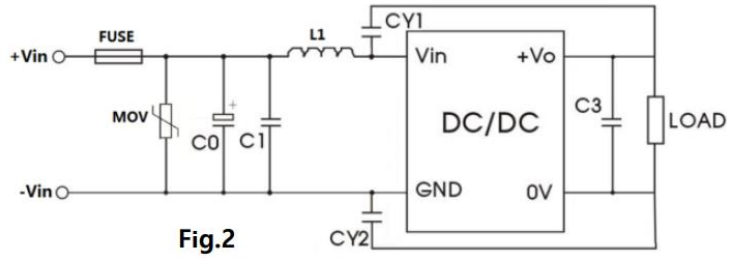


Fig.2

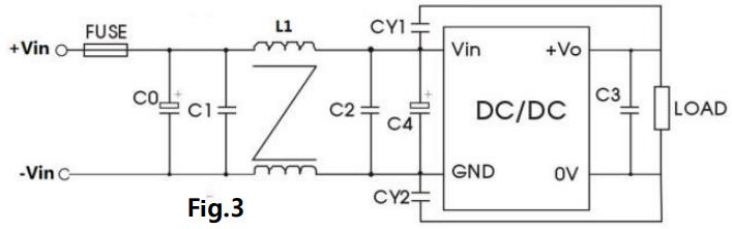


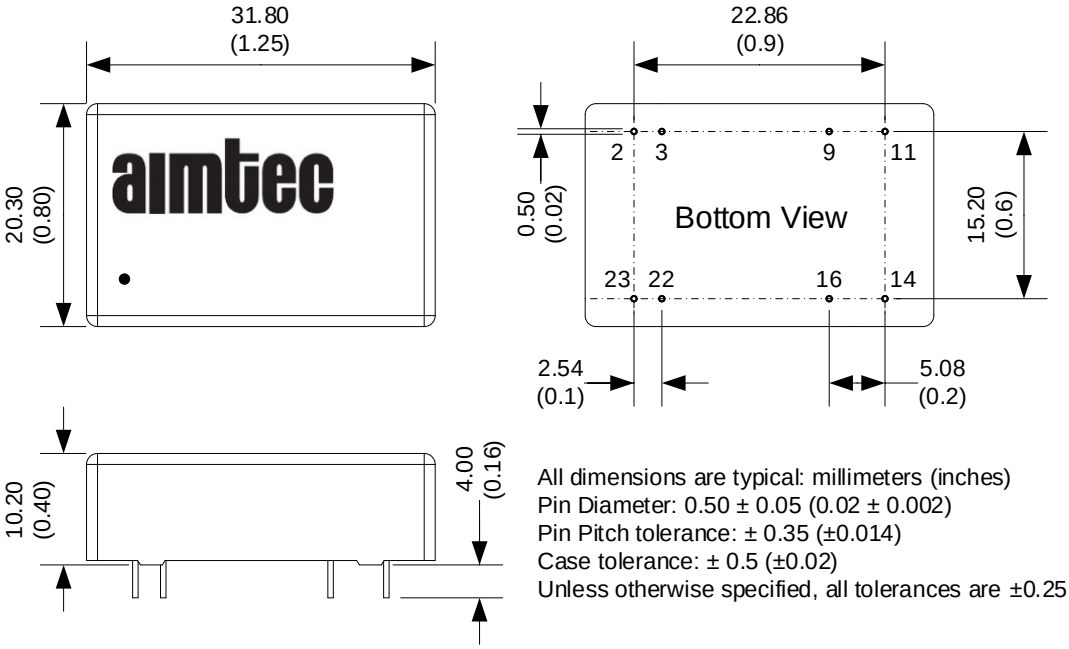
Fig.3

Single Output Models Parameter description:			Dual Output Models Parameter description:	
Fig.1 & Fig.2				
Model	Vin: 24VDC	Vin: 48VDC	Vin: 24VDC	Vin: 48VDC
MOV	S20K30	S14K60	S20K30	S14K60
C0	330μF/50V	100μF/100V	330μF/50V	330μF/100V
C1, C2	2.2μF/50V	2.2μF/100V	1μF/50V	1μF/100V
C3	Recommended Test Circuit			
L1	2.2mH		4.7μH	
CY1, CY2	--		1nF/3kV	
5Vin Models Parameter description:				
Fig.3				
C0	1000μF/35V			
C1, C2	4.7μF/50V			
C3	Recommended Test Circuit			
L1	2.2mH			
CY1, CY2	2.2nF/3kV			

FUSE: Choose according to actual input current

Dimensions

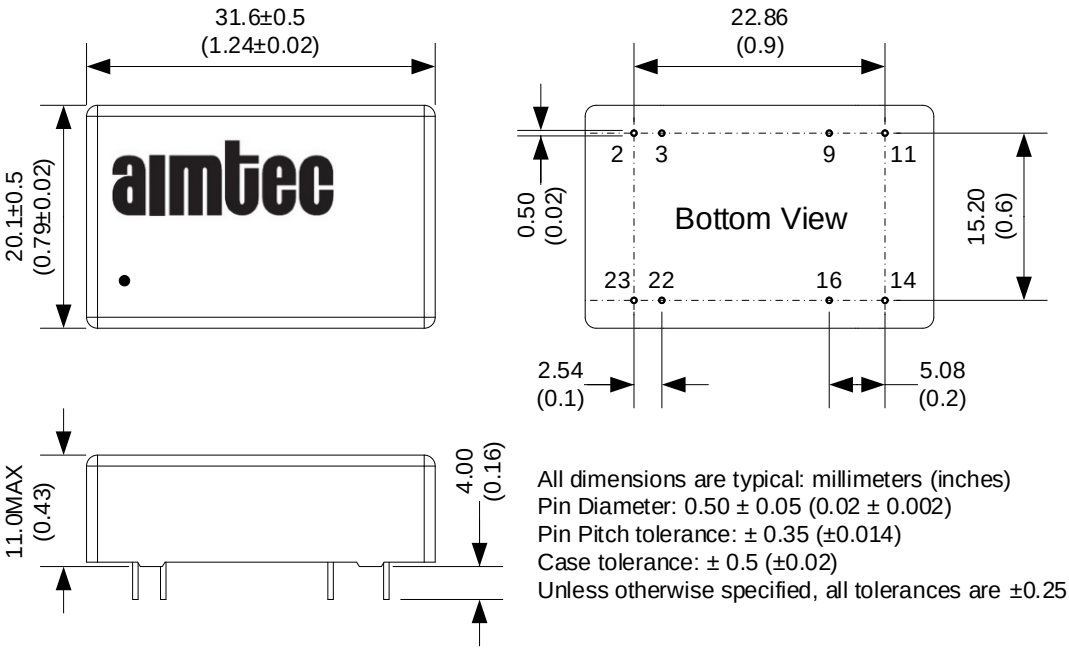
SH30 models:



Pin Out Specifications		
Pin	Single output	Dual output
2	+V Input	+V Input
3	+V Input	+V Input
9	NP	COM
11	NC	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	-V Input	-V Input
23	-V Input	-V Input

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)
Unless otherwise specified, all tolerances are ±0.25

Others:



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)
Unless otherwise specified, all tolerances are ±0.25

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