

Series AM12E-FZ

12Watt | DC-DC Converter



FEATURES:

- Remote On / Off Control
- Wide 2:1 input range
- High efficiency up to 87%
- Industry Standard Package
- No minimum load
- Operating temperature -40°C to + 85°C
- Input / Output Isolation 3000VDC
- Continuous short circuit protection
- Over Voltage Protection

Models

Single output



Model	Input Voltage (V)	Output Voltage (V)	Output CurrentMax(mA)	Capacitance load, max (μF)	Efficiency (%)
AM12E-1203SH30-FZ	9-18	3.3	3500	4700	77
AM12E-1205SH30-FZ	9-18	5	2400	3300	82
AM12E-1212SH30-FZ	9-18	12	1000	680	86
AM12E-1215SH30-FZ	9-18	15	800	330	85
AM12E-2403SH30-FZ	18-36	3.3	3500	4700	77
AM12E-2405SH30-FZ	18-36	5	2400	3300	82
AM12E-2412SH30-FZ	18-36	12	1000	680	87
AM12E-2415SH30-FZ	18-36	15	800	330	86
AM12E-4803SH30-FZ	36-75	3.3	3500	4700	78
AM12E-4805SH30-FZ	36-75	5	2400	3300	82
AM12E-4812SH30-FZ	36-75	12	1000	680	87
AM12E-4815SH30-FZ	36-75	15	800	330	86

Models

Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Capacitance load, max (μF)	Efficiency (%)
AM12E-1205DH30-FZ	9-18	±5	±1200	±1000	82
AM12E-1212DH30-FZ	9-18	±12	±500	±220	86
AM12E-1215DH30-FZ	9-18	±15	±400	±200	85
AM12E-2405DH30-FZ	18-36	±5	±1200	±1000	83
AM12E-2412DH30-FZ	18-36	±12	±500	±220	87
AM12E-2415DH30-FZ	18-36	±15	±400	±200	86
AM12E-4805DH30-FZ	36-75	±5	±1200	±1000	83
AM12E-4812DH30-FZ	36-75	±12	±500	±220	87
AM12E-4815DH30-FZ	36-75	±15	±400	±200	86

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	12	9-18		VDC
	24	18-36		
	48	36-75		
Filter	π (PI)			
Transient response time (50% load step)		2000		μs
Start up time		550		ms
Absolute Maximum Rating	12 Vin	-0.7-25		VDC
	24 Vin	-0.7-50		
	48 Vin	-0.7-100		
Peak Input Voltage time			100	ms
Remote Control Pin	ON OFF	Open or 3.5V ~12V, <0.2mA Short or 0V ~ 1.2V, <3mA		Vdc

Input Specifications (continued)

Parameters	Nominal	Typical	Maximum	Units
No Load Input Current			31	mA
Input reflected current		130		mAp-p

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3 sec		3000	VDC
Resistance		> 1000		MOhm
Capacitance		500		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	(full load)	±1		%
Short Circuit protection	Continuous			
Short circuit restart	Auto Recovery			
Over load protection	% of full load	150		%
Line voltage regulation	HL-LL	±0.5		%
Load voltage regulation	0% to 25%	±1		%
	25% to 100%	±0.5		
	Balanced Load (Dual)	±0.5		
	Unbalanced 25-100% FL	±5		
Temperature coefficient		±0.02		% °C
Ripple & Noise	20MHz Bandwidth	100		mVp-p
Rising time		10		ms
Over Voltage Protection (Zener Diode)	3.3V model 5V model 12V model 15V model		3.9V 6.2V 15V 18V	VDC

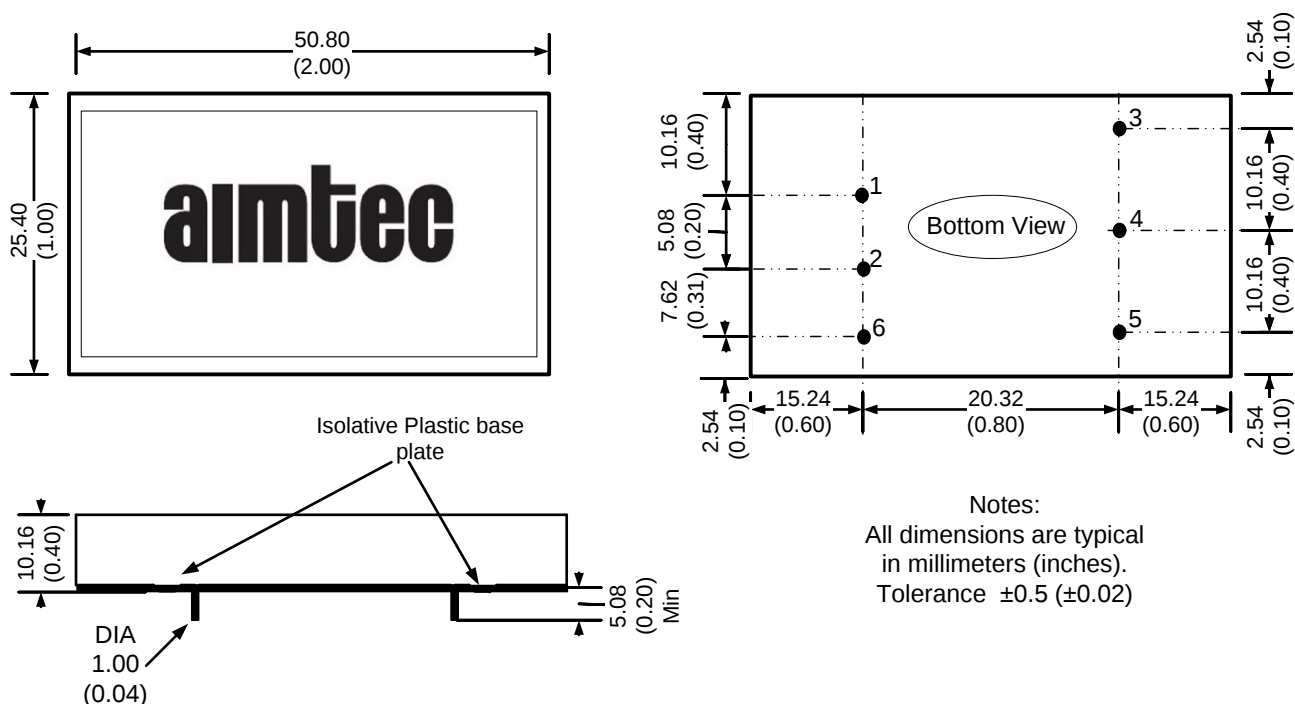
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	300		KHz
Operating temperature	See derating chart		-40 to +85	°C
Storage temperature		-55 to +105		°C
Maximum case temperature			100	°C
Cooling	Free air convection			
Humidity			95	%
Case material	Nickel coated copper			
Potting Material	UL94V-0 rated			
Weight		30		g
Dimensions (L x W x H)	Tolerance ±0.5mm	2.00 x 1.00 x 0.40 inches	50.80 x 25.40 x 10.2 mm	
MTBF	> 1,960,000 hrs. (MIL-HDBK -217F, Ground Benign, t=+25°C)			
Maximum soldering temperature	1.5mm from case max 10 sec		260	°C

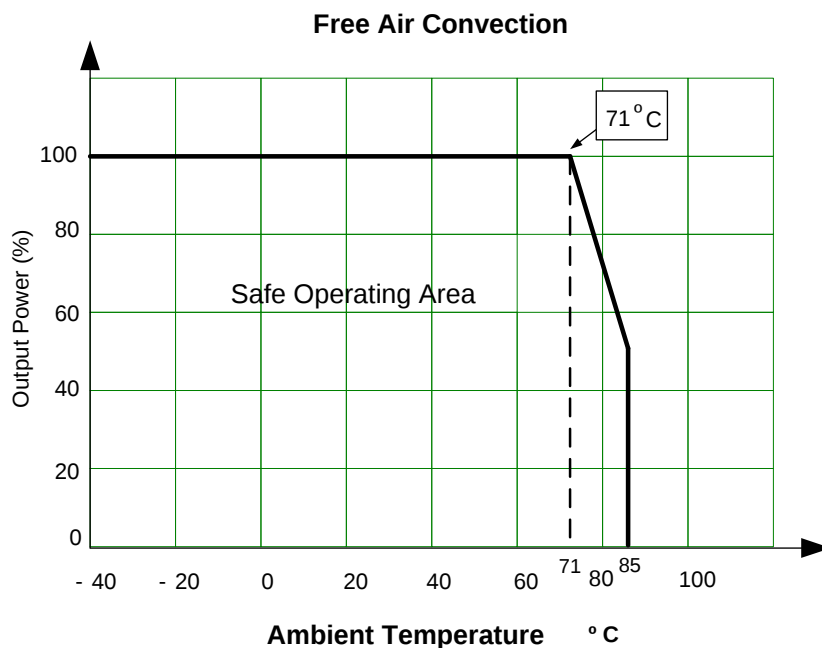
Pin Out Specifications

Pin	Single	Dual
1	+V Input	+V Input
2	-V Input	-V Input
3	+V Output	+V Output
4	Trim	Common.
5	-V Output	-V Output
6	Remote On/Off	Remote On/Off

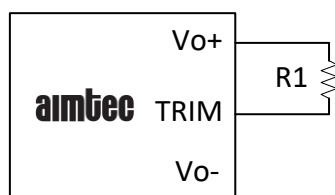
Dimensions



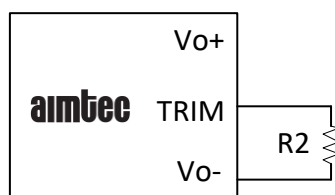
Derating



TRIM Function



AM12E-FZ
TRIM UP



AM12E-FZ
TRIM DOWN

3.3 V Output		
Percentage	R1(kΩ)	R2(kΩ)
10%	0	
7.5%	7.83	
5%	28.25	
2.5%	89.49	
-10%		10.63
-7.5%		27.92
-5%		62.5
-2.5%		166.26

5 V Output		
Percentage	R1(kΩ)	R2(kΩ)
10%	0	
7.5%	3.86	
5%	14.8	
2.5%	47.59	
-10%		0
-7.5%		1.08
-5%		12.28
-2.5%		45.89

12 V Output		
Percentage	R1(kΩ)	R2(kΩ)
10%	0	
7.5%	4.74	
5%	16.11	
2.5%	50.22	
-10%		39.19
-7.5%		61.01
-5%		104.64
-2.5%		235.53

15 V Output		
Percentage	R1(kΩ)	R2(kΩ)
10%	0	
7.5%	5.33	
5%	17	
2.5%	52	
-10%		59
-7.5%		88.17
-5%		146.5
-2.5%		321.5

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