



FEATURES:

- Wide 2:1 Input Range
- 1600 VDC I/O Isolation
- Adjustable Output Voltage
- Soft Start
- Over Current & Over Voltage Protection
- Efficiency up to 93%
- Temperature Range -40°C to +85°C
- Remote On/Off Function
- Continuous Short Circuit Protection
- No Minimum Load Required

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Maximum Capacitive Load (µF)	Efficiency (%)
AM20E-1203SZ	9-18	3.3	5.5	10000	90
AM20E-1205SZ	9-18	5	4	6800	92
AM20E-1212SZ	9-18	12	1.67	1000	90
AM20E-1215SZ	9-18	15	1.33	680	90
AM20E-2403SZ	18-36	3.3	5.5	10000	91
AM20E-2405SZ	18-36	5	4	6800	93
AM20E-2412SZ	18-36	12	1.67	1000	91
AM20E-2415SZ	18-36	15	1.33	680	91
AM20E-4803SZ	36-75	3.3	5.5	10000	91
AM20E-4805SZ	36-75	5	4	6800	93
AM20E-4812SZ	36-75	12	1.67	1000	91
AM20E-4815SZ	36-75	15	1.33	680	91

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (A)	Maximum Capacitive Load (µF)	Efficiency (%)
AM20E-1212DZ	9-18	±12	±0.835	±470	89
AM20E-1215DZ	9-18	±15	±0.665	±330	89
AM20E-2412DZ	18-36	±12	±0.835	±470	90
AM20E-2415DZ	18-36	±15	±0.665	±330	90
AM20E-4812DZ	36-75	±12	±0.835	±470	90
AM20E-4815DZ	36-75	±15	±0.665	±330	89

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range		9-18 18-36 36-75		VDC
Filter	π (Pi) Network			
Start up time		20		ms
Absolute Maximum Rating	12 Vin 24 Vin 48 Vin		36 50 100	VDC
Peak Input Voltage time			100	ms
On/Off Control	ON : 3.0 to 12Vdc or open circuit ; OFF: 0 to 1.2Vdc or short pin2 and pin 1 OFF: Idle current: 5mA typ			
Under Voltage Lockout	12 Vin 24 Vin 48 Vin	8.6 17.8 33.5		VDC
Input Reflected Ripple Current		20		mA p-p

Isolation Specifications

Parameters	Conditions	Typical	Maximum	Units
Tested voltage Input/Output	3 sec	1600		VDC
Case / Input & Output		1600		VDC
Resistance		>1000		MOhm
Capacitance		1200		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1		%
Voltage balance (Dual Output Models)	Balanced Load	±1		%
Cross Regulation (Dual Output Models)	25% load on one output - 100% load on second load	±5		%
Over voltage protection	Zener diode clamp			
Over current protection	140% of Full Load			
Short Circuit protection	Continuous			
Short circuit restart	Auto-Recovery			
Line voltage regulation		±0.2		%
Load voltage regulation (Single)	From 0% load to 100% load	±0.5		%
Load voltage regulation (Dual)	Balanced Load	±1		%
Ripple & Noise	20MHz Bandwidth With 1uF ceramic capacitor	75		mV p-p
Voltage adjustment range (single)			±10	%
Transient Recovery Time	25% load step change (75%-50%-25% of Io	250		uS
Transient Recovery Deviation	25% load step change (75%-50%-25% of Io	±3		%

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	330		KHz
Operating temperature		-40 to +85		°C
Storage temperature		-40 to +125		°C
Maximum case temperature			100	°C
Temperature coefficient		±0.02		%/°C
Derating	Above +70°C	3.3		%/°C
Cooling	Free Air Convection			
Humidity			95	% RH
Case material	Nickel-coated Copper			
Base material	Non-conductive Black Plastic(UL94V-0 rated)			
Potting material	Epoxy (UL94V-0 rated)			
Weight		30		g
Dimensions (L x W x H)	2.00 x 1.00 x 0.40 inches	50.80 x 25.40 x 10.16mm		
MTBF	>684,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			
Max Soldering temperature	1.5mm from case, 10 sec. max.		260	°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.

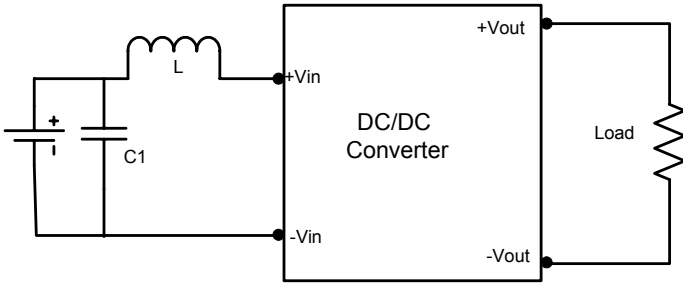
Safety Specifications

Standards	
Safety	Meets IEC/EN 60950-1
Agency Approvals	EN55022 Class A
	EN55022 Class A (see note A)
	EN61000-4-2 Perf. Criteria B
	EN61000-4-3 Perf. Criteria A
	EN61000-4-4 Perf. Criteria B (see note B)
	EN61000-4-5 Perf. Criteria B (see note B)
	EN61000-4-6 Perf. Criteria A
	EN61000-4-8 Perf. Criteria A

Note A: Input filter components (C1, L, see circuit below) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.

Note B: An external filter capacitor is required if the module has to meet EN61000-4-4 and EN61000-4-5. The filter capacitor suggested value of 220uF/100V.

Test Circuits
Conducted Emissions



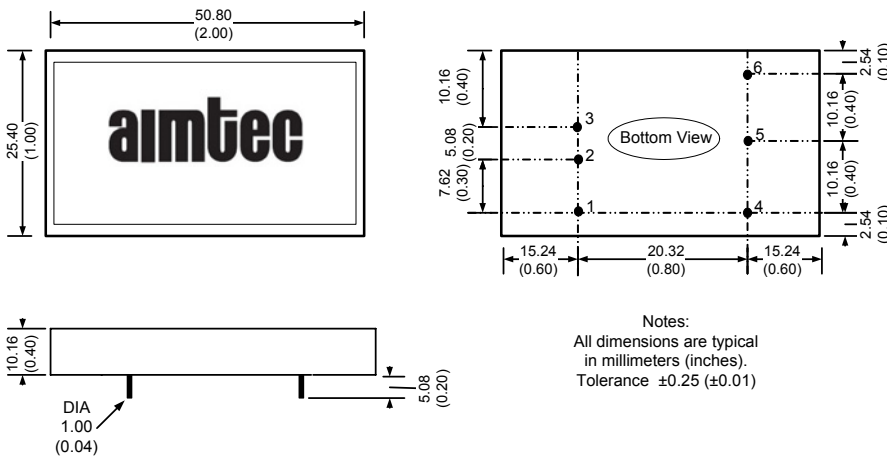
External parts table

Model	C1	L
AM20E-12XXXZ	330uF	12uH
AM20E-24XXXZ	220uF	12uH
AM20E-48XXXZ	220uF	12uH

Pin Out Specifications

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

Dimensions



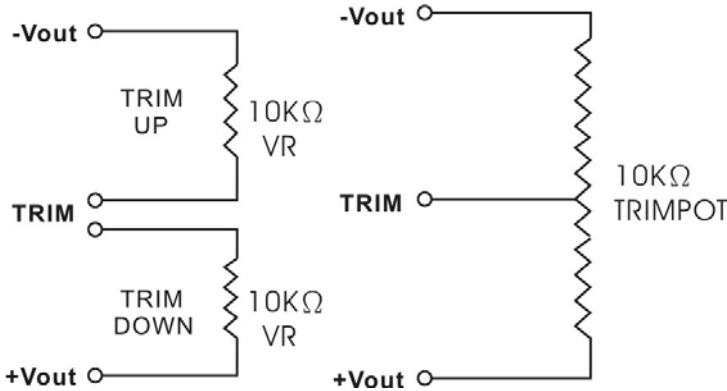
Pin diameter: 1.0 ± 0.05 (0.04 ± 0.002)
Pin pitch tolerance: ± 0.35 (± 0.014)
Case Tolerance: ± 0.5 (± 0.02)

Trimming

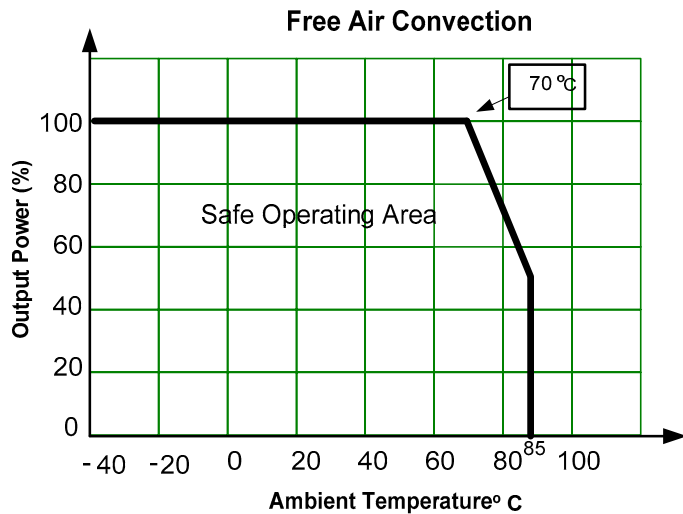
Output voltage on single output models can be externally trimmed by utilizing the methods as shown below

Fixed Resistor

Variable Potentiometer



Derating



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