aimtec
Your Power Partner

Series AM3TI-RZ
3 Watt | DC-DC Converter



FEATURES:

- No Minimum Load
- 24 Pin DIP Package
- Wide 2:1 Input Range
- High Efficiency up to 81%
- Over Load Protection
- Operating Temperature -40 to +85˚C
- Input / Output Isolation 1500 or 3000 VDC
- Internal EMC Filter Meets EN55022 Class A
- Continuous Short Circuit Protection
- Input Under Voltage Lockout

Models
Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Isolation (VDC)	Max Capacitive Load (uF)	Input Current Full Load | No Load (mA)		Efficiency (%)
AM3TI-1203S-RZ	9-18	3.3	900	1500	470	339	7	74
AM3TI-1205S-RZ	9-18	5	600	1500	470	325	7	78
AM3TI-1212S-RZ	9-18	12	250	1500	100	313	10	81
AM3TI-1215S-RZ	9-18	15	200	1500	100	313	10	81
AM3TI-1224S-RZ	9-18	24	125	1500	47	316	20	80
AM3TI-2403S-RZ	18-36	3.3	900	1500	470	172	7	73
AM3TI-2405S-RZ	18-36	5	600	1500	470	164	7	77
AM3TI-2412S-RZ	18-36	12	250	1500	100	156	7	81
AM3TI-2415S-RZ	18-36	15	200	1500	100	156	7	81
AM3TI-2424S-RZ	18-36	24	125	1500	47	156	10	81
AM3TI-4803S-RZ	36-75	3.3	900	1500	470	84	7	75
AM3TI-4805S-RZ	36-75	5	600	1500	470	80	7	79
AM3TI-4812S-RZ	36-75	12	250	1500	100	78	7	81
AM3TI-4815S-RZ	36-75	15	200	1500	100	78	7	81
AM3TI-4824S-RZ	36-75	24	125	1500	47	78	7	81
AM3TI-1203SH30-RZ	9-18	3.3	900	3000	470	339	7	74
AM3TI-1205SH30-RZ	9-18	5	600	3000	470	325	7	78
AM3TI-1212SH30-RZ	9-18	12	250	3000	100	313	10	81
AM3TI-1215SH30-RZ	9-18	15	200	3000	100	313	10	81
AM3TI-1224SH30-RZ	9-18	24	125	3000	47	316	20	80
AM3TI-2403SH30-RZ	18-36	3.3	900	3000	470	172	7	73
AM3TI-2405SH30-RZ	18-36	5	600	3000	470	164	7	77
AM3TI-2412SH30-RZ	18-36	12	250	3000	100	156	7	81
AM3TI-2415SH30-RZ	18-36	15	200	3000	100	156	7	81
AM3TI-2424SH30-RZ	18-36	24	125	3000	47	156	10	81
AM3TI-4803SH30-RZ	36-75	3.3	900	3000	470	84	7	75
AM3TI-4805SH30-RZ	36-75	5	600	3000	470	80	7	79
AM3TI-4812SH30-RZ	36-75	12	250	3000	100	78	7	81
AM3TI-4815SH30-RZ	36-75	15	200	3000	100	78	7	81
AM3TI-4824SH30-RZ	36-75	24	125	3000	47	78	7	81

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Isolation (VDC)	Max Capacitive Load (uF)	Input Current Full Load | No Load (mA)		Efficiency (%)
AM3TI-1203D-RZ	9-18	±3.3	±450	1500	±220	339	10	74
AM3TI-1205D-RZ	9-18	±5	±300	1500	±220	325	10	78
AM3TI-1212D-RZ	9-18	±12	±125	1500	±100	313	15	81
AM3TI-1215D-RZ	9-18	±15	±100	1500	±100	313	20	81
AM3TI-1224D-RZ	9-18	±24	±63	1500	±47	319	35	80
AM3TI-2403D-RZ	18-36	±3.3	±450	1500	±220	167	7	75
AM3TI-2405D-RZ	18-36	±5	±300	1500	±220	160	7	79
AM3TI-2412D-RZ	18-36	±12	±125	1500	±100	156	10	81
AM3TI-2415D-RZ	18-36	±15	±100	1500	±100	156	15	81
AM3TI-2424D-RZ	18-36	±24	±63	1500	±47	158	20	81

Models

Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Isolation (VDC)	Max Capacitive Load (uF)	Input Current Full Load | No Load (mA)		Efficiency (%)
AM3TI-4803D-RZ	36-75	±3.3	±450	1500	±220	81	7	77
AM3TI-4805D-RZ	36-75	±5	±300	1500	±220	78	7	81
AM3TI-4812D-RZ	36-75	±12	±125	1500	±100	78	7	81
AM3TI-4815D-RZ	36-75	±15	±100	1500	±100	78	7	81
AM3TI-4824D-RZ	36-75	±24	±63	1500	±47	81	15	79
AM3TI-1203DH30-RZ	9-18	±3.3	±450	3000	±220	339	10	74
AM3TI-1205DH30-RZ	9-18	±5	±300	3000	±220	325	10	78
AM3TI-1212DH30-RZ	9-18	±12	±125	3000	±100	313	15	81
AM3TI-1215DH30-RZ	9-18	±15	±100	3000	±100	313	20	81
AM3TI-1224DH30-RZ	9-18	±24	±63	3000	±47	319	35	80
AM3TI-2403DH30-RZ	18-36	±3.3	±450	3000	±220	167	7	75
AM3TI-2405DH30-RZ	18-36	±5	±300	3000	±220	160	7	79
AM3TI-2412DH30-RZ	18-36	±12	±125	3000	±100	156	10	81
AM3TI-2415DH30-RZ	18-36	±15	±100	3000	±100	156	15	81
AM3TI-2424DH30-RZ	18-36	±24	±63	3000	±47	158	20	81
AM3TI-4803DH30-RZ	36-75	±3.3	±450	3000	±220	81	7	77
AM3TI-4805DH30-RZ	36-75	±5	±300	3000	±220	78	7	81
AM3TI-4812DH30-RZ	36-75	±12	±125	3000	±100	78	7	81
AM3TI-4815DH30-RZ	36-75	±15	±100	3000	±100	78	7	81
AM3TI-4824DH30-RZ	36-75	±24	±63	3000	±47	81	15	79

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	12 24 48	9-18 18-36 36-75		VDC
Filter	π (Pi) Network			
Startup time		20		ms
Absolute Maximum Rating	12 Vin 24 Vin 48 Vin		25 50 100	VDC
Input Reflected Ripple Current	Refer to application test circuit	20		mA p-p
Under Voltage Lockout	12 Vin 24 Vin 48 Vin	(Model On / Off) 8.5 / 7.0 (Model On / Off) 16.5 / 14.5 (Model On / Off) 34.5 / 30.0		VDC

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1500 or 3000	VDC
Resistance		> 1000		MOhm
Capacitance		1000		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage Accuracy		±2		%
Voltage Balance		±2		%
Short Circuit Protection	Continuous			
Short Circuit Restart	Auto Recovery			
Over Load Protection	160% Iout			
Line Voltage Regulation		±0.5		%
Load Voltage Regulation	0 – 100% load	±1.2		%

Output Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Transient Recovery Time		300		µsec
Transient Deviation	(other models) (Single output 3.3V)	±3 ±5		%
Cross Regulation (Dual)	25% min load one output & 100% load on other	±5		%
Temperature Coefficient		±0.02		%/ºC
Ripple & Noise *	(other models) (24V dual output Models)	80 100		mV p-p

*- 20MHz Bandwidth measured with 1µf capacitor

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	330		KHz
Operating temperature	Derating above 70	-40 to +85		ºC
Storage temperature		-55 to +125		ºC
Max Case temperature			100	ºC
Cooling	Free air convection			
Humidity			95	%
Case material	Plastic (UL94V-0 rated)			
Weight		13		g
Dimensions (L x W x H)	Tolerance ±0.5 mm or ±0.02 inches	1.25 x 0.80 x 0.40 inches		31.75 x 20.32 x 10.16 mm
MTBF	>800 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25ºC)			

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.

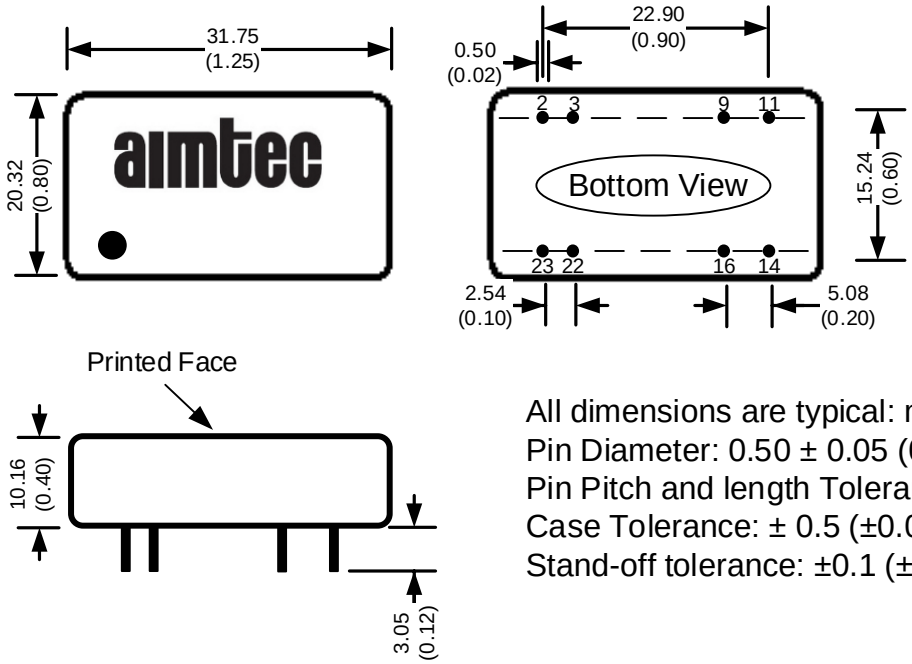
Safety Specifications

Parameters	
Agency Approval	CE/UL 60950-1, 62368-1
Standards	EN 55032 Class A
	IEC61000-4-2, Perf. Criteria A
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria A
	IEC61000-4-5, Perf. Criteria A
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A

Pin Out Specifications

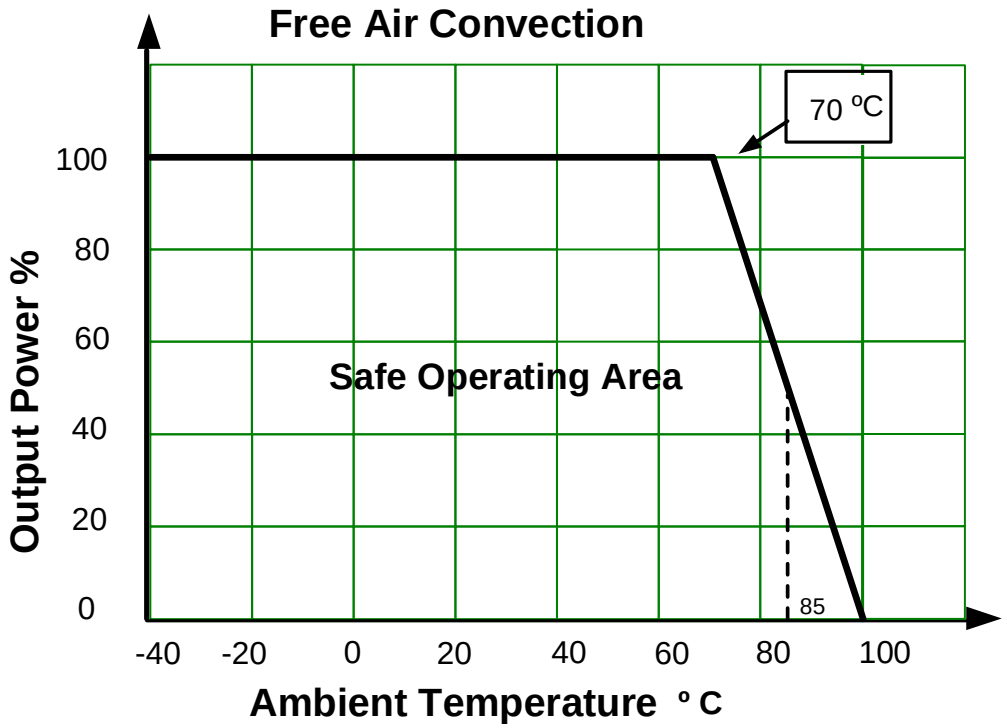
Pin	Single	Dual
2	-V Input	-V Input
3	-V Input	-V Input
9	Omitted	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

Dimensions

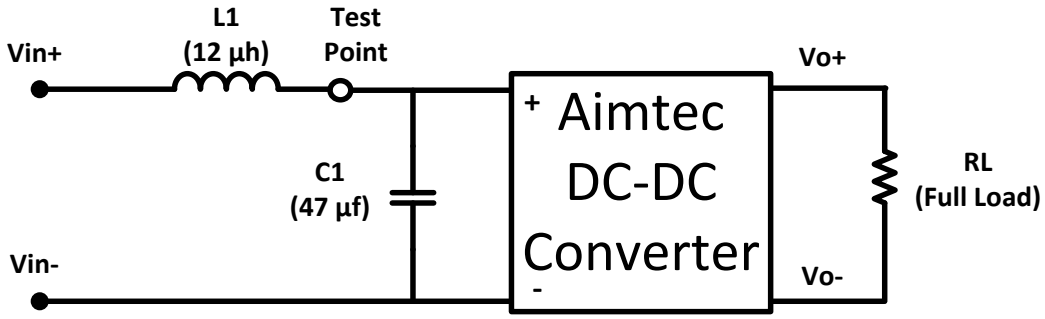


All dimensions are typical: millimeters (inches)
Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)
Pin Pitch and length Tolerance: ± 0.35 (±0.014)
Case Tolerance: ± 0.5 (±0.02)
Stand-off tolerance: ±0.1 (±0.004)

Derating

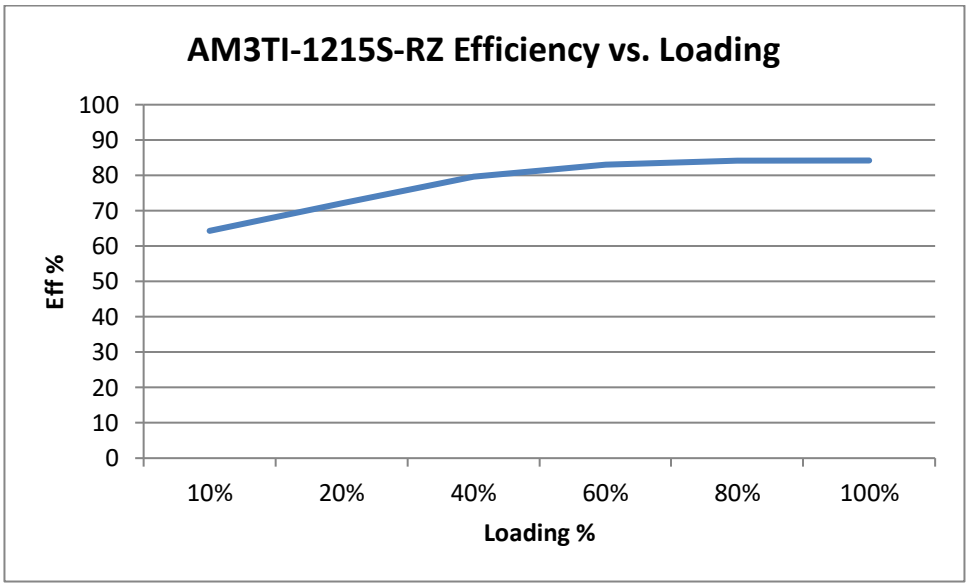


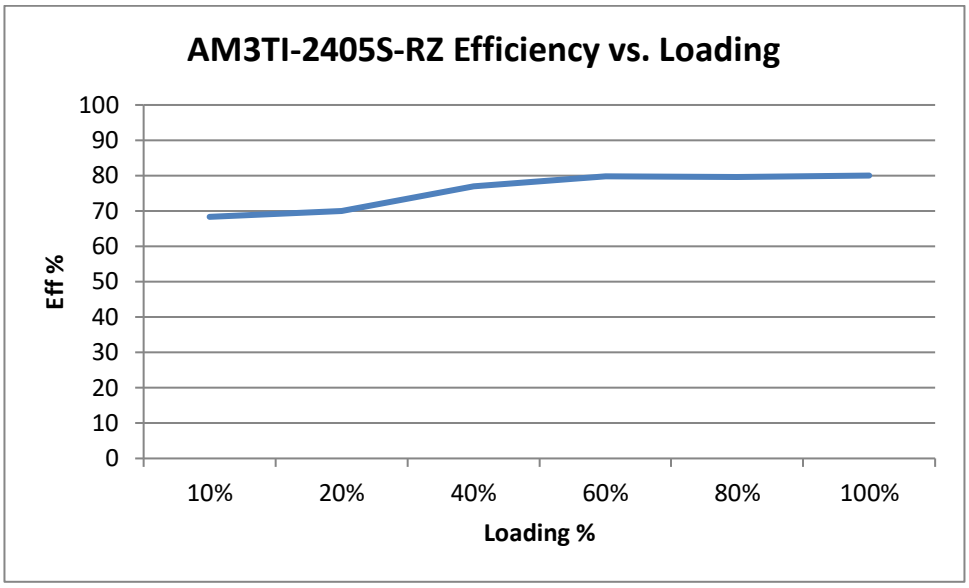
Input Reflected Ripple Current Test Circuit

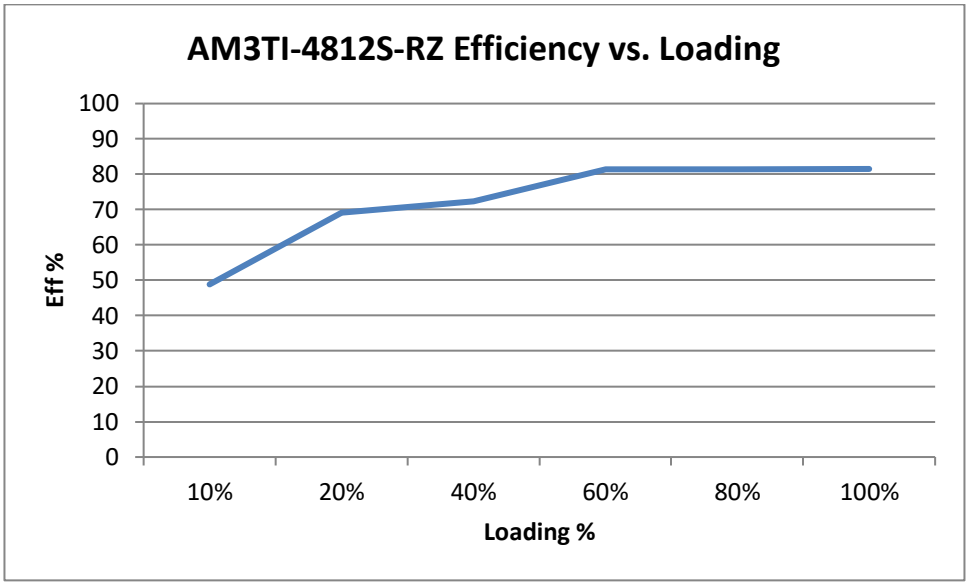


* Tested at full load, and nominal input

Typical Efficiency Example Charts







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