

Series AM3G-Z

3 Watt | DC-DC Converter



FEATURES:

- RoHS Compliant
- High Efficiency up to 84%
- Remote On / Off Control
- 8 Pin SIP Package
- Operating Temperature -40°C to + 85°C
- Continuous Short Circuit Protection
- Wide 2:1 Input Range
- Input / Output Isolation 1600 & 3000 VDC



Models

Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Isolation (VDC)	Input Current Full Load No Load (mA)		Max. Capacitive Load (μF)	Efficiency (%)
AM3G-0503SZ	4.5-9	3.3	700	1600	640	65	2200	74
AM3G-0505SZ	4.5-9	5	600	1600	800	70	1000	76
AM3G-0512SZ	4.5-9	12	250	1600	750	75	470	82
AM3G-0515SZ	4.5-9	15	200	1600	750	75	220	82
AM3G-1203SZ	9-18	3.3	700	1600	260	25	2200	76
AM3G-1205SZ	9-18	5	600	1600	320	15	1000	81
AM3G-1212SZ	9-18	12	250	1600	305	35	470	84
AM3G-1215SZ	9-18	15	200	1600	305	35	220	84
AM3G-2403SZ	18-36	3.3	700	1600	133	15	2200	74
AM3G-2405SZ	18-36	5	600	1600	160	15	1000	79
AM3G-2412SZ	18-36	12	250	1600	156	20	470	82
AM3G-2415SZ	18-36	15	200	1600	152	20	220	84
AM3G-4803SZ	36-72	3.3	700	1600	66	10	2200	75
AM3G-4805SZ	36-72	5	600	1600	82	10	1000	78
AM3G-4812SZ	36-72	12	250	1600	78	15	470	81
AM3G-4815SZ	36-72	15	200	1600	78	15	220	81
AM3G-0503SH30Z	4.5-9	3.3	700	3000	640	65	2200	74
AM3G-0505SH30Z	4.5-9	5	600	3000	800	70	1000	76
AM3G-0512SH30Z	4.5-9	12	250	3000	750	75	470	82
AM3G-0515SH30Z	4.5-9	15	200	3000	750	75	220	82
AM3G-1203SH30Z	9-18	3.3	700	3000	260	25	2200	76
AM3G-1205SH30Z	9-18	5	600	3000	320	15	1000	81
AM3G-1212SH30Z	9-18	12	250	3000	305	35	470	84
AM3G-1215SH30Z	9-18	15	200	3000	305	35	220	84
AM3G-2403SH30Z	18-36	3.3	700	3000	133	15	2200	74
AM3G-2405SH30Z	18-36	5	600	3000	160	15	1000	79
AM3G-2412SH30Z	18-36	12	250	3000	156	20	470	82
AM3G-2415SH30Z	18-36	15	200	3000	152	20	220	84
AM3G-4803SH30Z	36-72	3.3	700	3000	66	10	2200	75
AM3G-4805SH30Z	36-72	5	600	3000	82	10	1000	78
AM3G-4812SH30Z	36-72	12	250	3000	78	15	470	81
AM3G-4815SH30Z	36-72	15	200	3000	78	15	220	81

Models

Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Isolation (VDC)	Input Current Full Load No Load (mA)		Max. Capacitive Load (μF)	Efficiency (%)
AM3G-0505DZ	4.5-9	±5	±300	1600	800	90	±470	77
AM3G-0512DZ	4.5-9	±12	±125	1600	760	90	±220	81
AM3G-0515DZ	4.5-9	±15	±100	1600	750	90	±100	82
AM3G-1205DZ	9-18	±5	±300	1600	320	45	±470	80
AM3G-1212DZ	9-18	±12	±125	1600	308	45	±220	83
AM3G-1215DZ	9-18	±15	±100	1600	312	45	±100	82
AM3G-2405DZ	18-36	±5	±300	1600	160	20	±470	80
AM3G-2412DZ	18-36	±12	±125	1600	154	20	±220	83
AM3G-2415DZ	18-36	±15	±100	1600	154	20	±100	83

Models

Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Isolation (VDC)	Input Current Full Load No Load (mA)		Max. Capacitive Load (μF)	Efficiency (%)
AM3G-4805DZ	36-72	±5	±300	1600	82	15	±470	78
AM3G-4812DZ	36-72	±12	±125	1600	80	20	±220	80
AM3G-4815DZ	36-72	±15	±100	1600	78	15	±100	81
AM3G-0505DH30Z	4.5-9	±5	±300	3000	800	90	±470	77
AM3G-0512DH30Z	4.5-9	±12	±125	3000	760	90	±220	81
AM3G-0515DH30Z	4.5-9	±15	±100	3000	750	90	±100	82
AM3G-1205DH30Z	9-18	±5	±300	3000	320	45	±470	80
AM3G-1212DH30Z	9-18	±12	±125	3000	308	45	±220	83
AM3G-1215DH30Z	9-18	±15	±100	3000	312	45	±100	82
AM3G-2405DH30Z	18-36	±5	±300	3000	160	20	±470	80
AM3G-2412DH30Z	18-36	±12	±125	3000	154	20	±220	83
AM3G-2415DH30Z	18-36	±15	±100	3000	154	20	±100	83
AM3G-4805DH30Z	36-72	±5	±300	3000	82	15	±470	78
AM3G-4812DH30Z	36-72	±12	±125	3000	80	20	±220	80
AM3G-4815DH30Z	36-72	±15	±100	3000	78	15	±100	81

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	5 12 24 48	5-9 9-18 18-36 36-72		VDC
Filter	Capacitor			
Turn On Transient Process Time		300		μs
Transient Response Deviation			±3	%
Start-Up Time		20		ms
Absolute Maximum Rating	5 Vin 12 Vin 24 Vin 48 Vin	-0.7-15 -0.7-36 -0.7-50 -0.7-100		VDC
Peak Input Voltage Time			100	ms
On/Off Control	ON – 0 to 1.3VDC Max.(Short circuit Pin 1 and Pin 3) or open circuit OFF – 3 to 6VDC Max.(or 3mA to 6mA Max. via 1KΩ Resistor)			
Input Reflected Ripple Current*		35		mA p-p

* The input reflected ripple current should be measured with connected 12μH inductor and 47μF input capacitor (ESR<1Ω at 100 KHz)

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O Voltage	60 sec	1600 & 3000		VDC
Resistance		> 1000		MΩ
Capacitance		680		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1		%
Cross Regulation (Dual)	25% load on one output and 100% load on second output	±5		%
Short Circuit Protection		Continuous		
Short Circuit Restart		Auto recovery		

Output Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Line Voltage Regulation	LL~HL	±0.5		%
Load Voltage Regulation	Load 25~100%	±1		%
Temperature Coefficient		±0.02		%/°C
Ripple & Noise	At 20MHz Bandwidth	75		mV p-p

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching Frequency	100% load	100 to 650		KHz
Operating Temperature	Full Load without Derating	-40 to +71		°C
Storage Temperature		-40 to +125		°C
Max Case Temperature			+100	°C
Cooling	Free air convection			
Humidity			95	%
Case Material	Non-conductive black plastic			
Potting Material	Epoxy (UL94V-0 rated)			
Pin Material	C5191R-H Solder coated			
Weight		4.8		g
Dimensions (L X W X H)	0.86 x 0.36 x 0.42 inch 21.85 x 9.20 x 10.60 mm			
MTBF	>1 340 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			

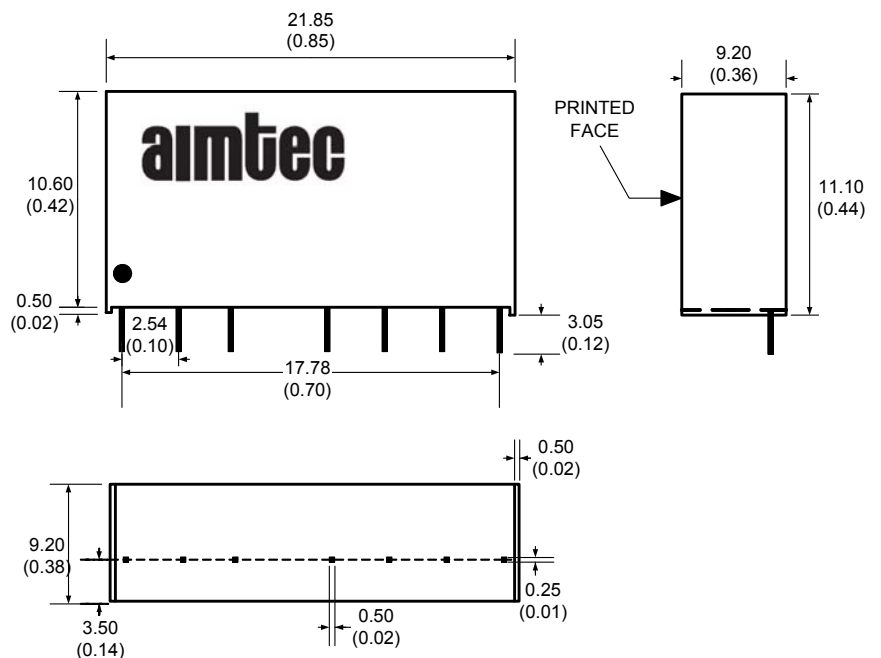
Safety Specifications

Parameters	
Agency Approval	CE
Standards	EN55022 Class A, EN55024
	IEC61000-4-2, Perf. Criteria B
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria B (external 220uF/100V cap required)
	IEC61000-4-5, Perf. Criteria B (external 220uF/100V cap required)
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A

Pin Out Specifications

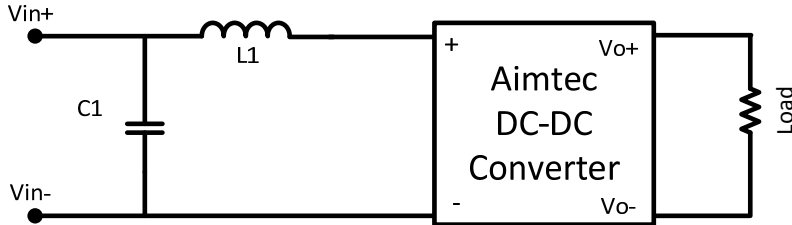
Pin	1600 & 3000VDC	
	Single	Dual
1	- V Input	- V Input
2	+ V Input	+ V Input
3	On/Off Control	On/Off Control
5	N.C.	N.C.
6	+ V Output	+ V Output
7	- V Output	Common
8	N.C.	- V Output

Dimensions

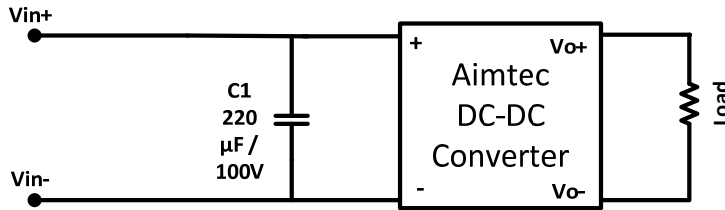


Conducted Emissions

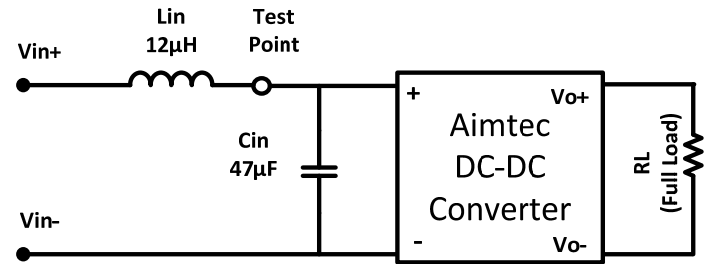
Input Voltage	C1	L1
5V	220uF/25V	5.6uH
12V Single	100uF/100V	18 μ H
12V Dual	2.2uF/100V	18uH
24V	10uF/35V	18uH
48V	100uF/100V	56uH



Surge

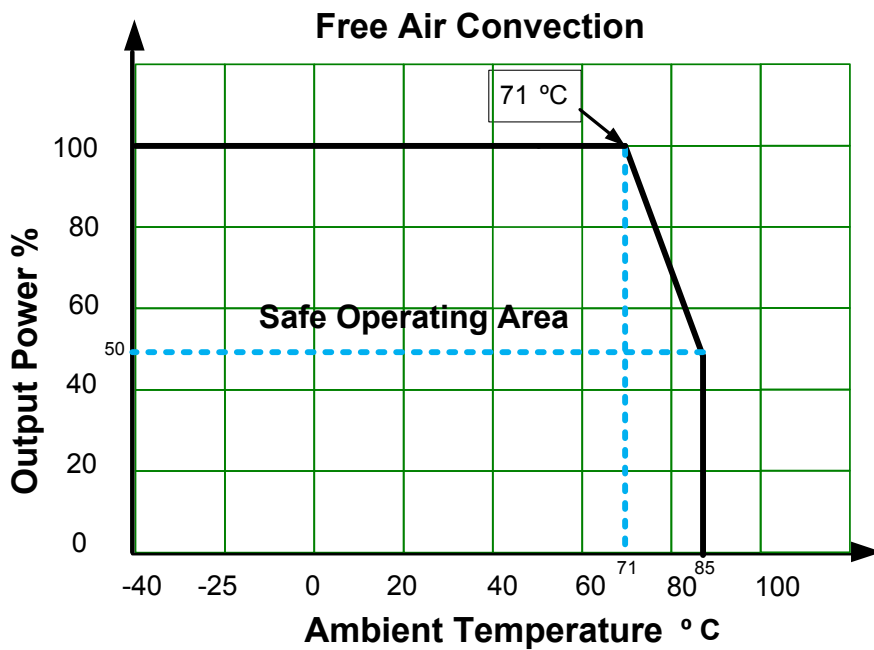


Input Reflected Ripple

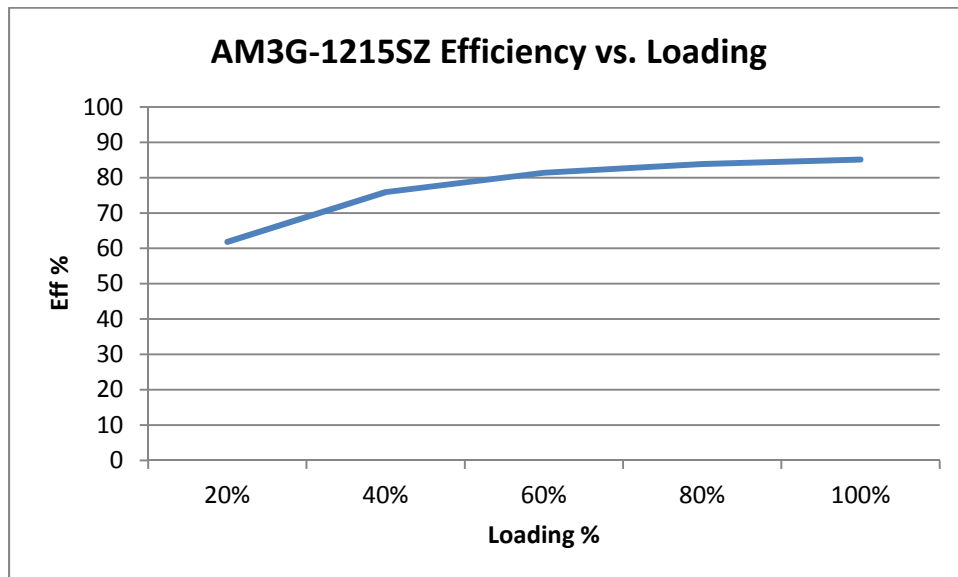
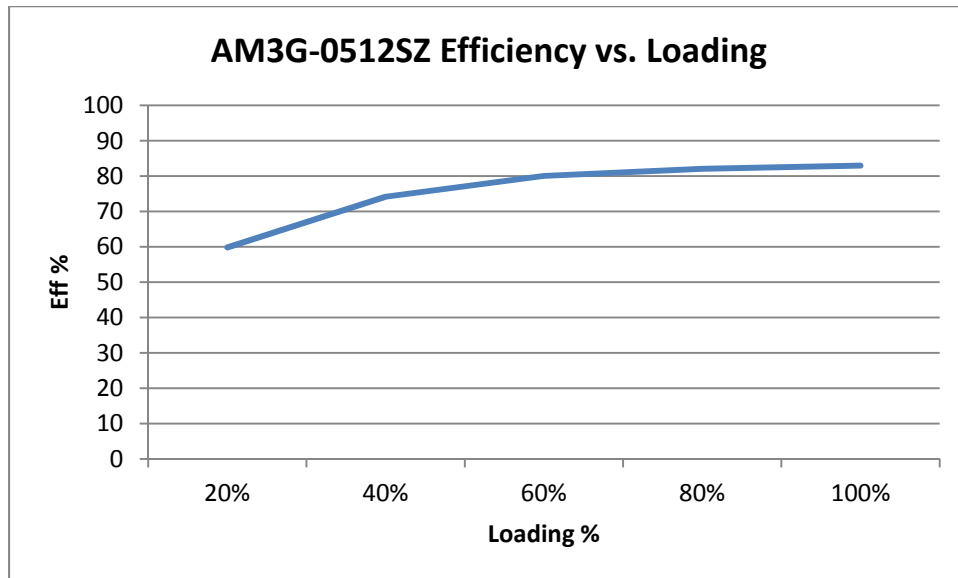


* Tested at full load, and nominal input

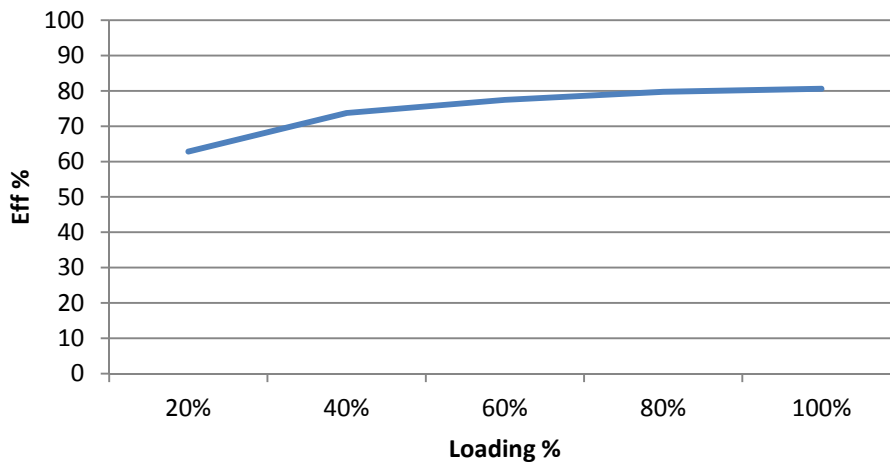
Derating



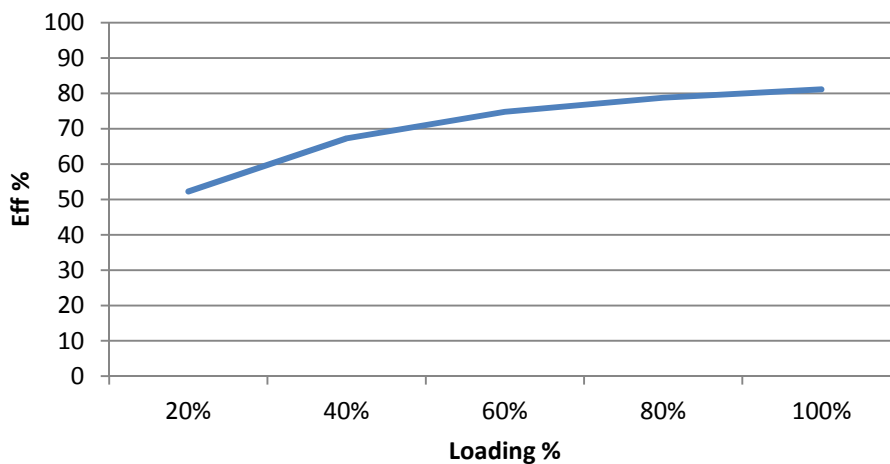
Typical Efficiency Example Charts



AM3G-2403SZ Efficiency vs. Loading



AM3G-4812SZ Efficiency vs. Loading



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