aimtec
Your Power Partner

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	2200	76
AM3G-0512SZ	4.5-9	12	250	1600	750	75	470	82
AM3G-0515SZ	4.5-9	15	200	1600	750	75	470	82
AM3G-1203SZ	9-18	3.3	700	1600	260	25	2200	76
AM3G-1205SZ	9-18	5	600	1600	320	15	2200	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	2200	79
AM3G-2412SZ	18-36	12	250	1600	156	20	470	82
AM3G-2415SZ	18-36	15	200	1600	152	20	470	84
AM3G-4803SZ	36-72	3.3	700	1600	66	10	2200	75
AM3G-4805SZ	36-72	5	600	1600	82	10	2200	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	2200	76
AM3G-0512SH30Z	4.5-9	12	250	3000	750	75	470	82
AM3G-0515SH30Z	4.5-9	15	200	3000	750	75	470	82
AM3G-1203SH30Z	9-18	3.3	700	3000	260	25	2200	76
AM3G-1205SH30Z	9-18	5	600	3000	320	15	2200	81
AM3G-1212SH30Z	9-18	12	250	3000	305	35	470	84
AM3G-2403SH30Z	18-36	3.3	700	3000	133	15	2200	74
AM3G-2405SH30Z	18-36	5	600	3000	160	15	2200	79
AM3G-2412SH30Z	18-36	12	250	3000	156	20	470	82
AM3G-2415SH30Z	18-36	15	200	3000	152	20	470	84
AM3G-4803SH30Z	36-72	3.3	700	3000	66	10	2200	75
AM3G-4805SH30Z	36-72	5	600	3000	82	10	2200	78

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-0512DH30Z	4.5-9	±12	±125	3000	760	90	±220	81
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-4812DH30Z	36-72	±12	±125	3000	80	20	±220	80

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	4.5-9 9-18 18-36 36-72		VDC
Filter	Capacitor			
Transient Recovery Time	100% - 25% load, 25% load step change	300		µs
Transient Response Deviation	100% - 25% load, 25% load step change		±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 – open circuit or high impedance OFF – 3 to 6VDC Max.(or 3mA to 6mA Max. via a 1KΩ Resistor) (standby input current 3mA max)			
Input Reflected Ripple Current*		35		mA p-p

* The input reflected ripple current should be measured with a 12µH inductor and a 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		MOhm
Capacitance		680		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy			±1	%
Cross Regulation (Dual)	1st output 25-100% load, 2nd output 100% load	±5		%

Short Circuit Protection	Continuous			
Short Circuit Restart	Auto recovery			
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 0.44 inches	21.85 x 9.20 x 11.10 mm		
MTBF	>1 340 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			
Maximum soldering temperature	1.5mm from case for 10 second		260	°C

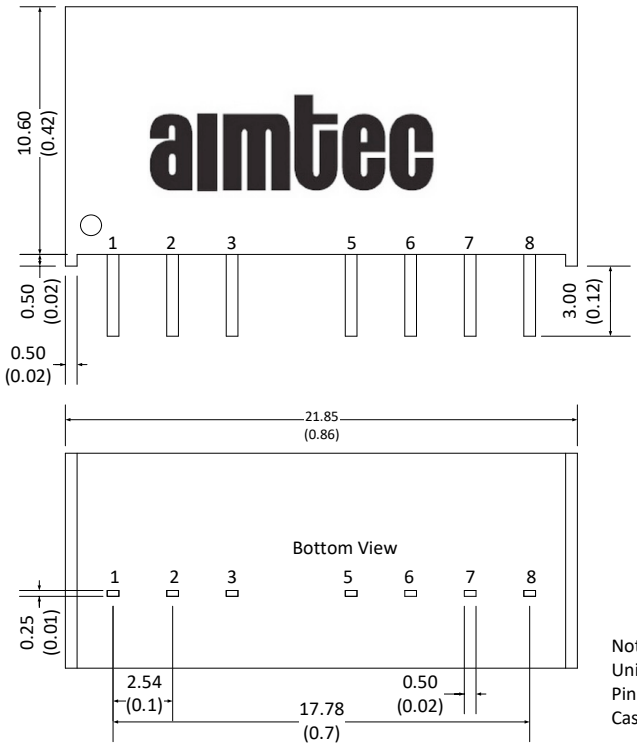
Safety Specifications

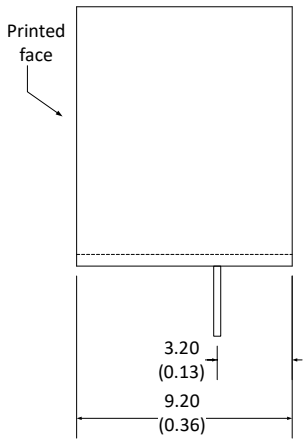
Parameters	
Agency Approval	CE, UL (EN/UL 60950-1, 62368-1)
Standards	Designed to meet IEC60950-1, 62368-1
	EN55032 Class A, EN55024 with the recommended circuit
	IEC61000-4-2, Perf. Criteria A
	IEC61000-4-3, Perf. Criteria A
	IEC61000-4-4, Perf. Criteria A (external 220uF/100V cap required)
	IEC61000-4-5, Perf. Criteria A (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

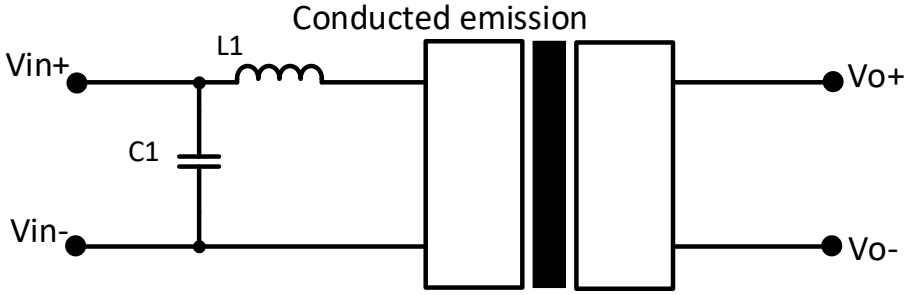
Dimensions



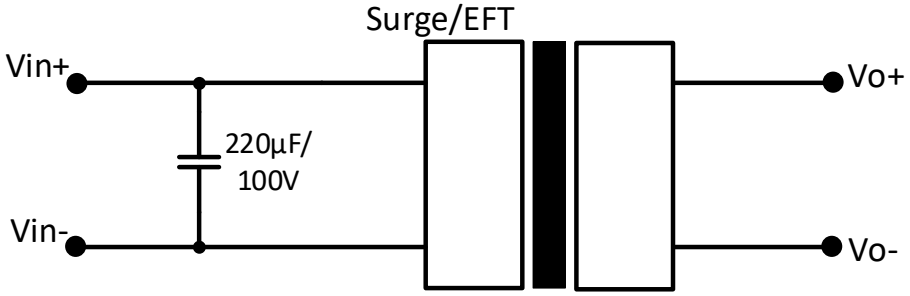


Note:
Unit: mm(inch)
Pin pitch and length tolerance: ±0.35mm (±0.014)
Case tolerance: ±0.50mm (±0.02)

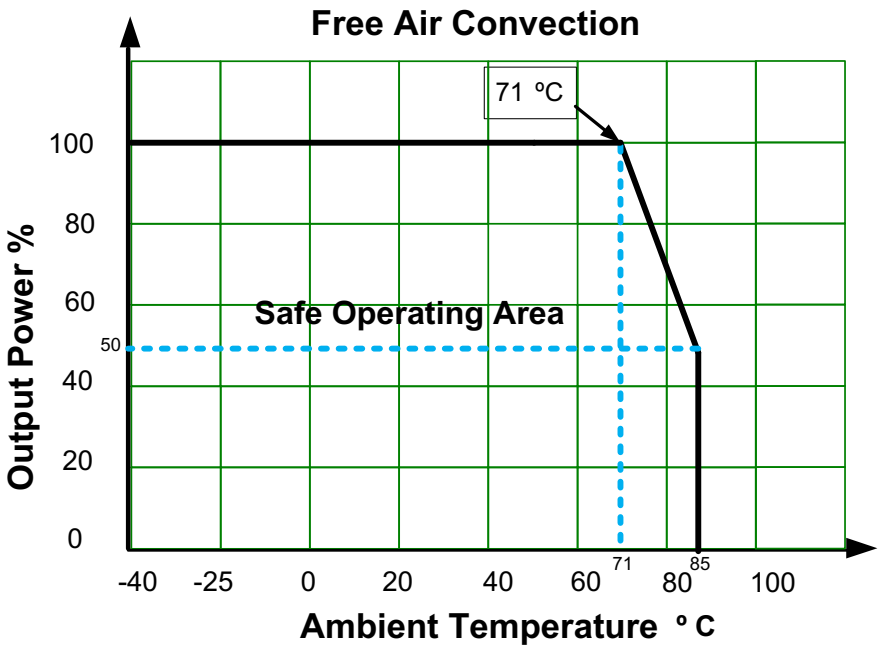
Recommended Circuits



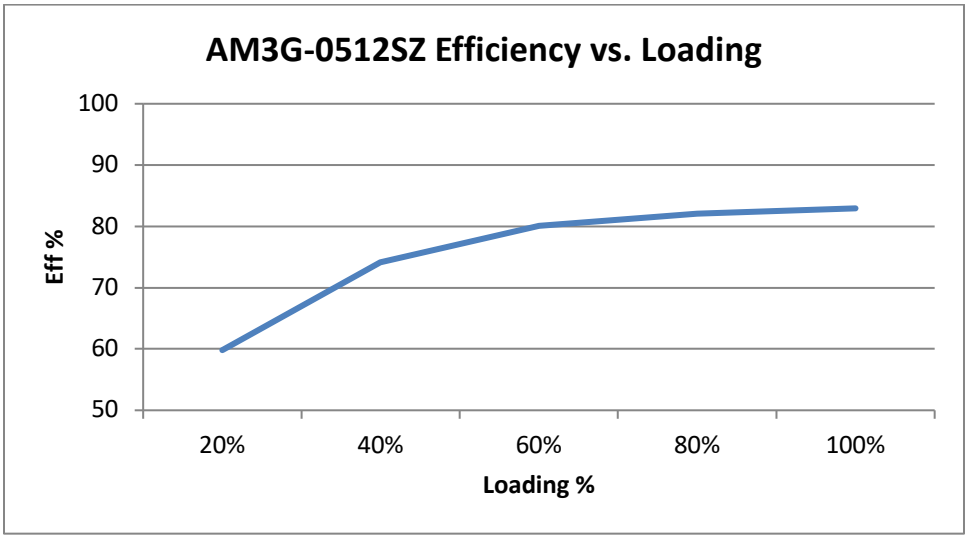
Input Voltage	C1	L1
5V	220µF/25V	5.6µH
12V Single	100µF/100V	18µH
12V Dual	2.2µF/100V	18µH
24V	10µF/35V	18µH
48V	100µF/100V	56µH

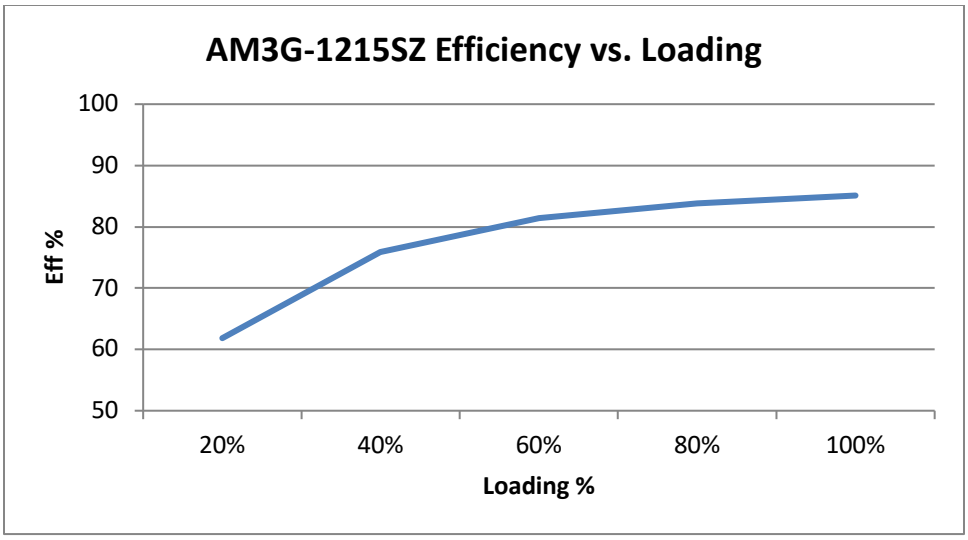


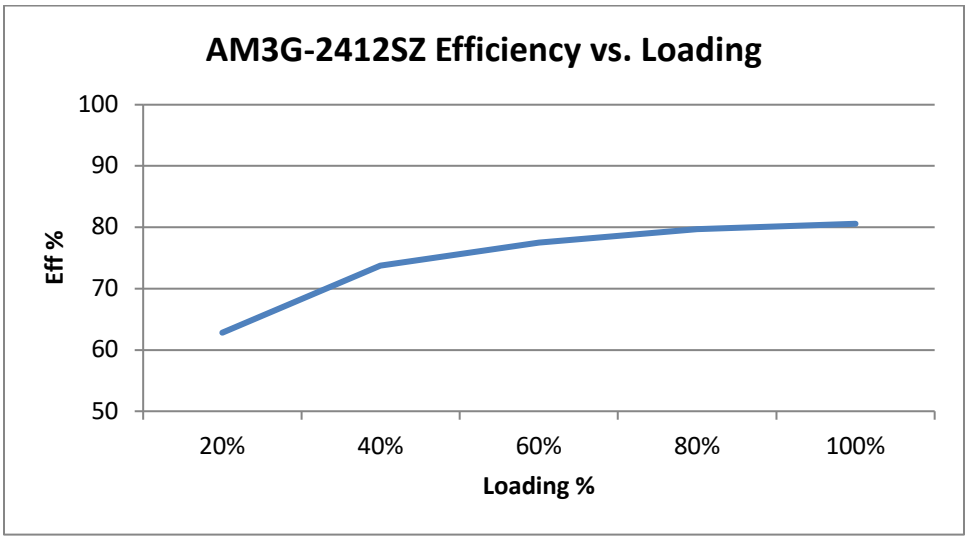
Derating

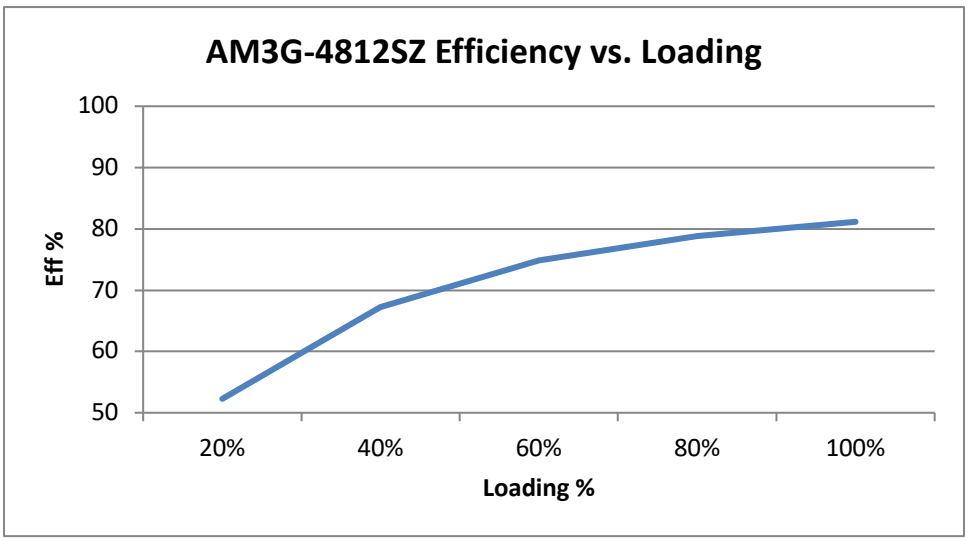


Typical Efficiency Example Charts




AM3G-1215SZ Efficiency vs. Loading
100
90
80
70
60
50
Eff %
20%
40%
60%
80%
100%
Loading %


AM3G-2412SZ Efficiency vs. Loading
100
90
80
70
60
50
Eff %
20%
40%
60%
80%
100%
Loading %


AM3G-4812SZ Efficiency vs. Loading
100
90
80
70
60
50
Eff %
20%
40%
60%
80%
100%
Loading %

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