aimtec
Your Power Partner

Series AM3T-VZ

3 Watt | DC-DC Converter

FEATURES:

- Wide 2:1 Input Range
- 24 Pin DIP Package
- High Efficiency up to 82%
- Metal Package
- Operating Temperature -40ºC to +85ºC
- Input / Output Isolation 1500 or 3500 VDC
- Pin Compatible with Multiple Manufacturers
- Continuous Short Circuit Protection

RoHS

Models

Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Capacitive Load Max (µF)	Input Current Full typ. | No Load max.(mA)		Efficiency (%)
AM3T-0505S-VZ	4.5-9	5	600	2200	857	40	70
AM3T-0507S-VZ	4.5-9	7.2	417	1000	833	40	72
AM3T-0509S-VZ	4.5-9	9	333	470	833	40	72
AM3T-0512S-VZ	4.5-9	12	250	470	810	40	74
AM3T-0515S-VZ	4.5-9	15	200	470	810	40	74
AM3T-0518S-VZ	4.5-9	18	167	220	810	40	74
AM3T-0524S-VZ	4.5-9	24	125	220	857	40	70
AM3T-1205S-VZ	9-18	5	600	2200	328	20	76
AM3T-1207S-VZ	9-18	7.2	417	1000	338	20	74
AM3T-1209S-VZ	9-18	9	333	470	324	20	77
AM3T-1212S-VZ	9-18	12	250	470	316	20	79
AM3T-1215S-VZ	9-18	15	200	470	316	20	79
AM3T-1218S-VZ	9-18	18	167	220	316	20	79
AM3T-1224S-VZ	9-18	24	125	220	316	20	79
AM3T-2405S-VZ	18-36	5	600	2200	156	12	80
AM3T-2407S-VZ	18-36	7.2	417	1000	162	12	77
AM3T-2409S-VZ	18-36	9	333	470	156	12	80
AM3T-2412S-VZ	18-36	12	250	470	152	12	82
AM3T-2415S-VZ	18-36	15	200	470	152	12	82
AM3T-2418S-VZ	18-36	18	167	220	158	12	79
AM3T-2424S-VZ	18-36	24	125	220	156	12	80
AM3T-4805S-VZ	36-72	5	600	2200	81	8	77
AM3T-4807S-VZ	36-72	7.2	417	1000	80	8	78
AM3T-4809S-VZ	36-72	9	333	470	80	8	78
AM3T-4812S-VZ	36-72	12	250	470	78	8	80
AM3T-4815S-VZ	36-72	15	200	470	78	8	80
AM3T-4818S-VZ	36-72	18	167	220	81	8	77
AM3T-4824S-VZ	36-72	24	125	220	78	8	80
AM3T-0505SH35-VZ	4.5-9	5	600	2200	857	40	70
AM3T-0507SH35-VZ	4.5-9	7.2	417	1000	833	40	72
AM3T-0509SH35-VZ	4.5-9	9	333	470	833	40	72
AM3T-0512SH35-VZ	4.5-9	12	250	470	810	40	74
AM3T-0515SH35-VZ	4.5-9	15	200	470	810	40	74
AM3T-0518SH35-VZ	4.5-9	18	167	220	810	40	74
AM3T-0524SH35-VZ	4.5-9	24	125	220	857	40	70
AM3T-1205SH35-VZ	9-18	5	600	2200	328	20	76
AM3T-1207SH35-VZ	9-18	7.2	417	1000	338	20	74
AM3T-1209SH35-VZ	9-18	9	333	470	324	20	77
AM3T-1212SH35-VZ	9-18	12	250	470	316	20	79
AM3T-1215SH35-VZ	9-18	15	200	470	316	20	79
AM3T-1218SH35-VZ	9-18	18	167	220	316	20	79
AM3T-1224SH35-VZ	9-18	24	125	220	316	20	79

Models
Single output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Capacitive Load Max (µF)	Input Current Full typ. | No Load max.(mA)		Efficiency (%)
AM3T-2405SH35-VZ	18-36	5	600	2200	156	12	80
AM3T-2407SH35-VZ	18-36	7.2	417	1000	162	12	77
AM3T-2409SH35-VZ	18-36	9	333	470	156	12	80
AM3T-2412SH35-VZ	18-36	12	250	470	152	12	82
AM3T-2415SH35-VZ	18-36	15	200	470	152	12	82
AM3T-2418SH35-VZ	18-36	18	167	220	158	12	79
AM3T-2424SH35-VZ	18-36	24	125	220	156	12	80
AM3T-4805SH35-VZ	36-72	5	600	2200	81	8	77
AM3T-4807SH35-VZ	36-72	7.2	417	1000	80	8	78
AM3T-4809SH35-VZ	36-72	9	333	470	80	8	78
AM3T-4812SH35-VZ	36-72	12	250	470	78	8	80
AM3T-4815SH35-VZ	36-72	15	200	470	78	8	80
AM3T-4818SH35-VZ	36-72	18	167	220	81	8	77
AM3T-4824SH35-VZ	36-72	24	125	220	78	8	80

Models
Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Capacitive Load Max (µF)	Input Current Full typ. | No Load max.(mA)		Efficiency (%)
AM3T-0505D-VZ	4.5-9	±5	±300	±1000	869	40	69
AM3T-0507D-VZ	4.5-9	±7.2	±208	±220	896	40	67
AM3T-0509D-VZ	4.5-9	±9	±167	±220	857	40	70
AM3T-0512D-VZ	4.5-9	±12	±125	±220	833	40	72
AM3T-0515D-VZ	4.5-9	±15	±100	±220	810	40	74
AM3T-0518D-VZ	4.5-9	±18	±83	±220	810	40	74
AM3T-0524D-VZ	4.5-9	±24	±63	±100	857	40	70
AM3T-1205D-VZ	9-18	±5	±300	±1000	329	20	76
AM3T-1207D-VZ	9-18	±7.2	±208	±220	325	20	77
AM3T-1209D-VZ	9-18	±9	±167	±220	325	20	77
AM3T-1212D-VZ	9-18	±12	±125	±220	316	20	79
AM3T-1215D-VZ	9-18	±15	±100	±220	316	20	79
AM3T-1218D-VZ	9-18	±18	±83	±220	321	20	78
AM3T-1224D-VZ	9-18	±24	±63	±100	316	20	79
AM3T-2405D-VZ	18-36	±5	±300	±1000	156	12	80
AM3T-2407D-VZ	18-36	±7.2	±208	±220	160	12	78
AM3T-2409D-VZ	18-36	±9	±167	±220	158	12	80
AM3T-2412D-VZ	18-36	±12	±125	±220	152	12	82
AM3T-2415D-VZ	18-36	±15	±100	±220	152	12	82
AM3T-2418D-VZ	18-36	±18	±83	±220	156	12	80
AM3T-2424D-VZ	18-36	±24	±63	±100	156	12	80
AM3T-4805D-VZ	36-72	±5	±300	±1000	80	8	78
AM3T-4807D-VZ	36-72	±7.2	±208	±220	80	8	78
AM3T-4809D-VZ	36-72	±9	±167	±220	79	8	79
AM3T-4812D-VZ	36-72	±12	±125	±220	78	8	80
AM3T-4815D-VZ	36-72	±15	±100	±220	78	8	80
AM3T-4818D-VZ	36-72	±18	±83	±220	80	8	78
AM3T-4824D-VZ	36-72	±24	±63	±100	78	8	80

Models
Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current Max (mA)	Capacitive Load Max (µF)	Input Current Full typ. | No Load max. (mA)		Efficiency (%)
AM3T-0505DH35-VZ	4.5-9	±5	±300	±1000	869	40	69
AM3T-0507DH35-VZ	4.5-9	±7.2	±208	±220	896	40	67
AM3T-0509DH35-VZ	4.5-9	±9	±167	±220	857	40	70
AM3T-0512DH35-VZ	4.5-9	±12	±125	±220	833	40	72
AM3T-0515DH35-VZ	4.5-9	±15	±100	±220	810	40	74
AM3T-0518DH35-VZ	4.5-9	±18	±83	±220	810	40	74
AM3T-0524DH35-VZ	4.5-9	±24	±63	±100	857	40	70
AM3T-1205DH35-VZ	9-18	±5	±300	±1000	329	20	76
AM3T-1207DH35-VZ	9-18	±7.2	±208	±220	325	20	77
AM3T-1209DH35-VZ	9-18	±9	±167	±220	325	20	77
AM3T-1212DH35-VZ	9-18	±12	±125	±220	316	20	79
AM3T-1215DH35-VZ	9-18	±15	±100	±220	316	20	79
AM3T-1218DH35-VZ	9-18	±18	±83	±220	321	20	78
AM3T-1224DH35-VZ	9-18	±24	±63	±100	316	20	79
AM3T-2405DH35-VZ	18-36	±5	±300	±1000	156	12	80
AM3T-2407DH35-VZ	18-36	±7.2	±208	±220	160	12	78
AM3T-2409DH35-VZ	18-36	±9	±167	±220	158	12	80
AM3T-2412DH35-VZ	18-36	±12	±125	±220	152	12	82
AM3T-2415DH35-VZ	18-36	±15	±100	±220	152	12	82
AM3T-2418DH35-VZ	18-36	±18	±83	±220	156	12	80
AM3T-2424DH35-VZ	18-36	±24	±63	±100	156	12	80
AM3T-4805DH35-VZ	36-72	±5	±300	±1000	80	8	78
AM3T-4807DH35-VZ	36-72	±7.2	±208	±220	80	8	78
AM3T-4809DH35-VZ	36-72	±9	±167	±220	79	8	79
AM3T-4812DH35-VZ	36-72	±12	±125	±220	78	8	80
AM3T-4815DH35-VZ	36-72	±15	±100	±220	78	8	80
AM3T-4818DH35-VZ	36-72	±18	±83	±220	80	8	78
AM3T-4824DH35-VZ	36-72	±24	±63	±100	78	8	80

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage Range	5	4.5-9		VDC
	12	9-18		VDC
	24	18-36		VDC
	48	36-72		VDC
Filter	π (Pi) Network			
Absolute Maximum Rating	5 Vin	-0.7-15		VDC
	12 Vin	-0.7-24		VDC
	24 Vin	-0.7-40		VDC
	48 Vin	-0.7-80		VDC
Peak Input Voltage Time		100		Ms
Input Reflected Ripple Current *		35		mA p-p

* The input reflected ripple current should be measured with a 12µH inductor.

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O Voltage	60 sec		1500	VDC
	60 sec, 'H35' models		3500	
Resistance		> 1000		MOhm
Capacitance		60		pF

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage Accuracy			±1	%
Short Circuit Protection	Continuous			
Short Circuit Restart	Auto Recovery			
Line Voltage Regulation			±0.5	%
Load Voltage Regulation			±0.5	%
Temperature Coefficient		±0.02		%/°C
Ripple & Noise	At 20MHz Bandwidth		60	mV p-p
Minimum load current *		25		%

* Operating the converter below the minimum load current will not damage the converter, but the specifications may not be meet.

General Specifications

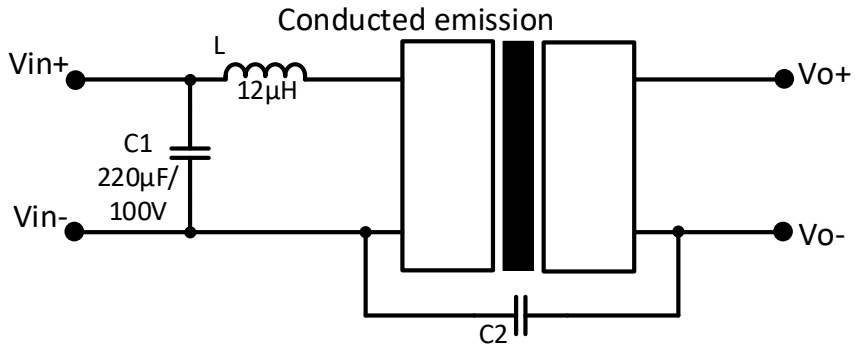
Parameters	Conditions	Typical	Maximum	Units
Switching Frequency	100% load	100-400		KHz
Operating Temperature	Full Load	-40 to +85		°C
Storage Temperature		-40 to +125		°C
Max Case Temperature			100	°C
Cooling	Free air convection			
Humidity			95	%
Case Material	Nickel coated copper			
Weight		17		g
Dimensions (L x W x H)	1.25 x 0.8 x 0.4 inches 31.75 x 20.32 x 10.16 mm			
MTBF	>1,000,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°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.

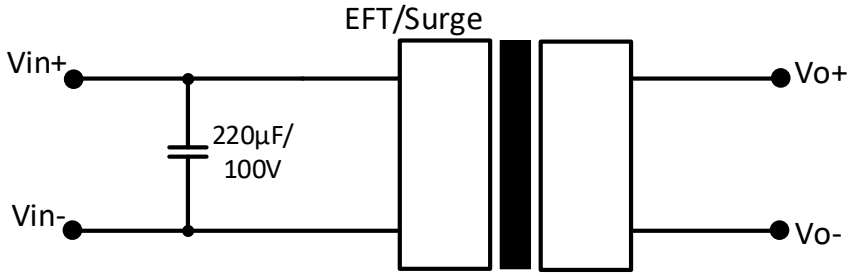
Safety Specifications

Parameters	
Agency Approvals	CE
Standards	Designed to meet IEC 60950-1
	EN55032 Class A 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 required)
	IEC61000-4-5, Perf. Criteria A (external 220uF/100V required)
	IEC61000-4-6, Perf. Criteria A
	IEC61000-4-8, Perf. Criteria A

Recommended Circuits



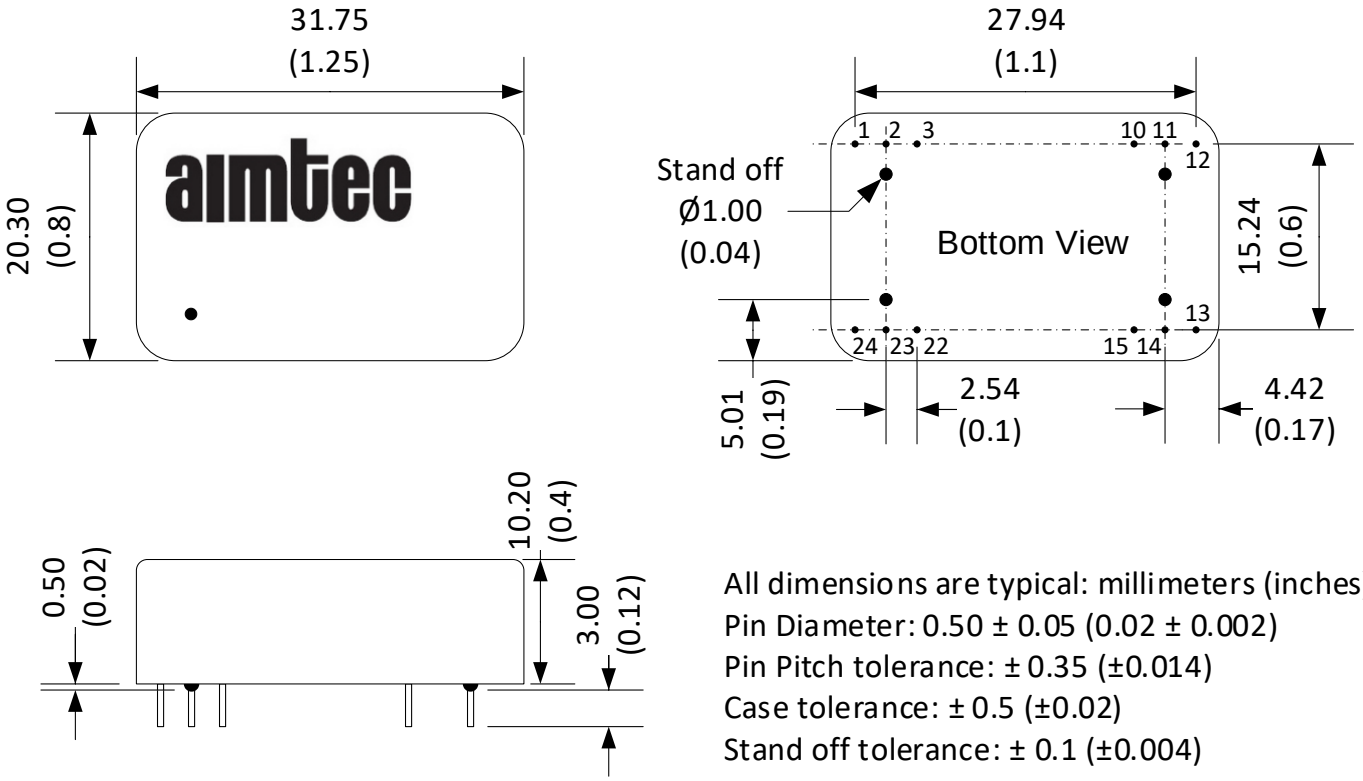
Vin	C2
5	-
12	-
24	470pF MLCC
48	470pF MLCC



Pin Out Specifications

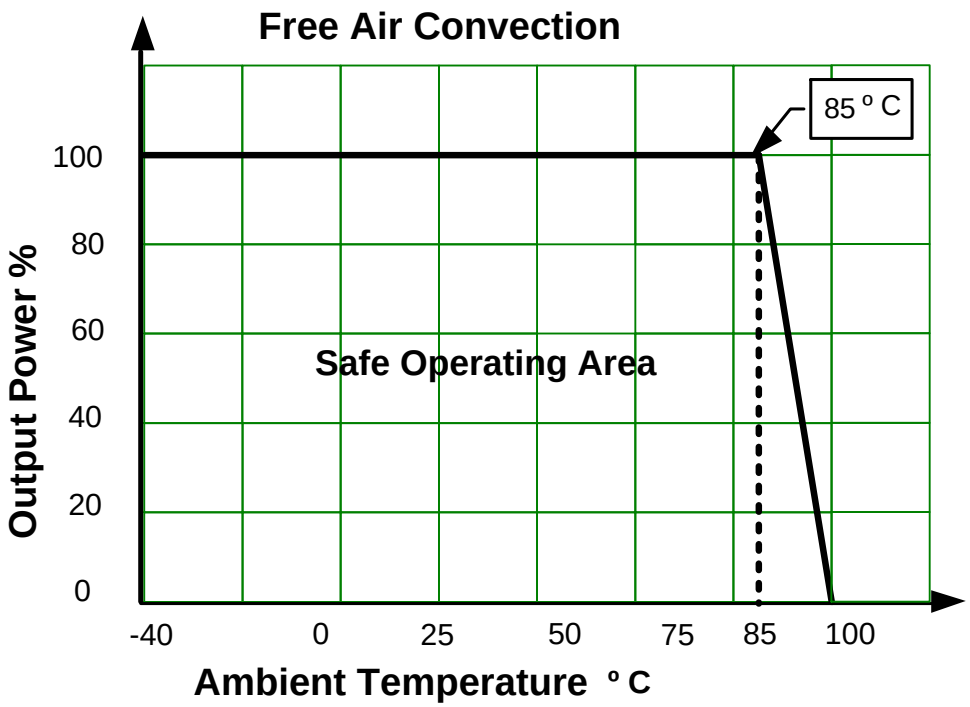
Pin	1500 VDC Isolation		3500 VDC Isolation	
	Single	Dual	Single	Dual
1	+V Input	+V Input	No Pin	No Pin
2	N.C.	-V Output	-V Input	-V Input
3	N.C.	Common	-V Input	-V Input
9	No pin	No pin	No pin	Common
10	-V Output	Common	No pin	No pin
11	+V Output	+V Output	N.C.	-V Output
12	-V Input	-V Input	No pin	No pin
13	-V Input	-V Input	No pin	No pin
14	+V Output	+V Output	+V Output	+V Output
15	-V Output	Common	No pin	No pin
16	No pin	No pin	-V Output	Common
22	N.C.	Common	+V Input	+V Input
23	N.C.	-V Output	+V Input	+V Input
24	+V Input	+V Input	No pin	No pin

Dimensions

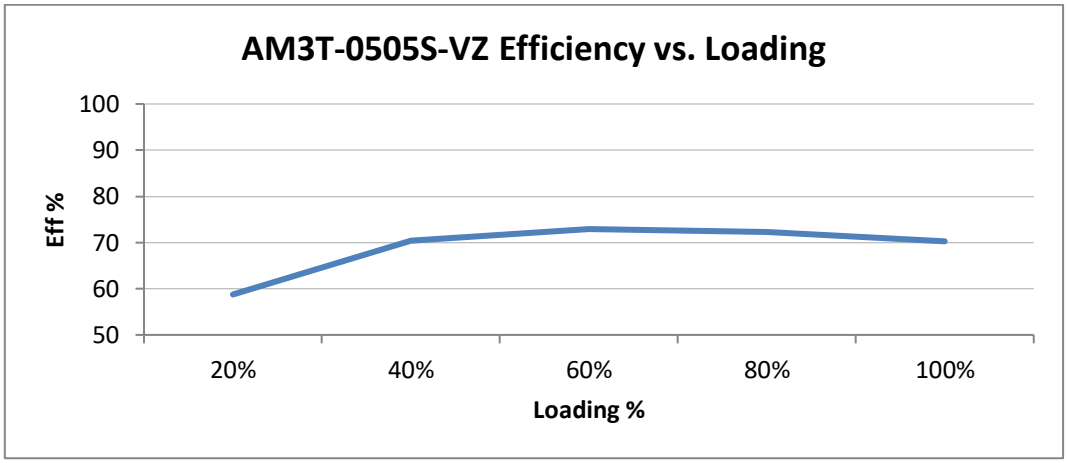


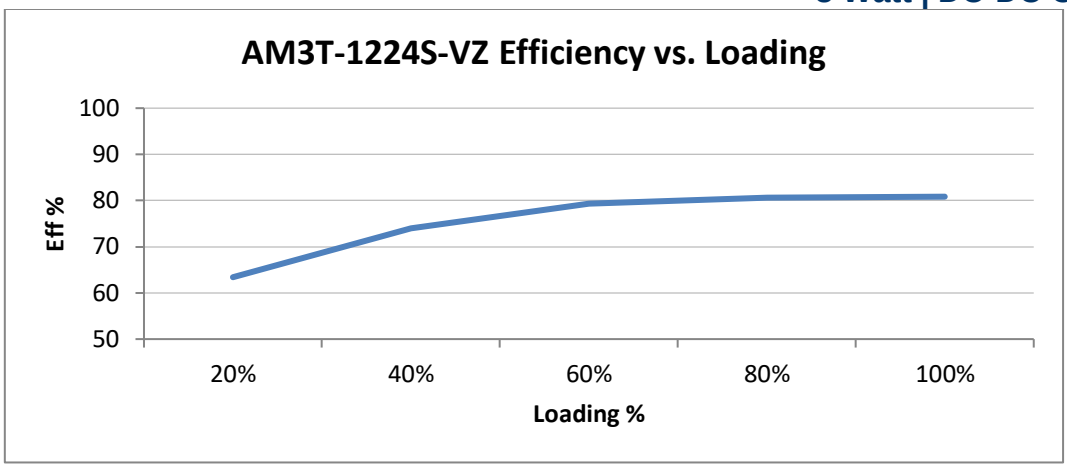
All dimensions are typical: millimeters (inches)
Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)
Pin Pitch tolerance: ± 0.35 (±0.014)
Case tolerance: ± 0.5 (±0.02)
Stand off tolerance: ± 0.1 (±0.004)

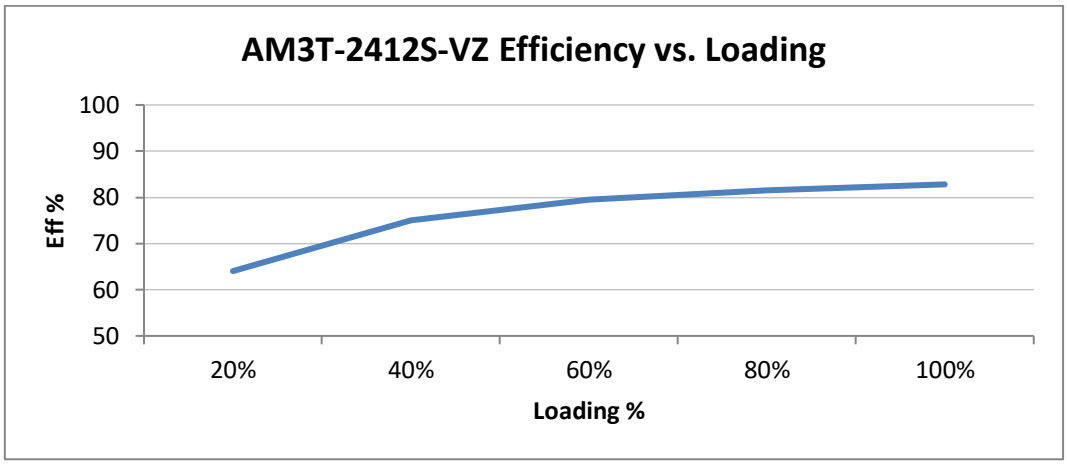
Derating

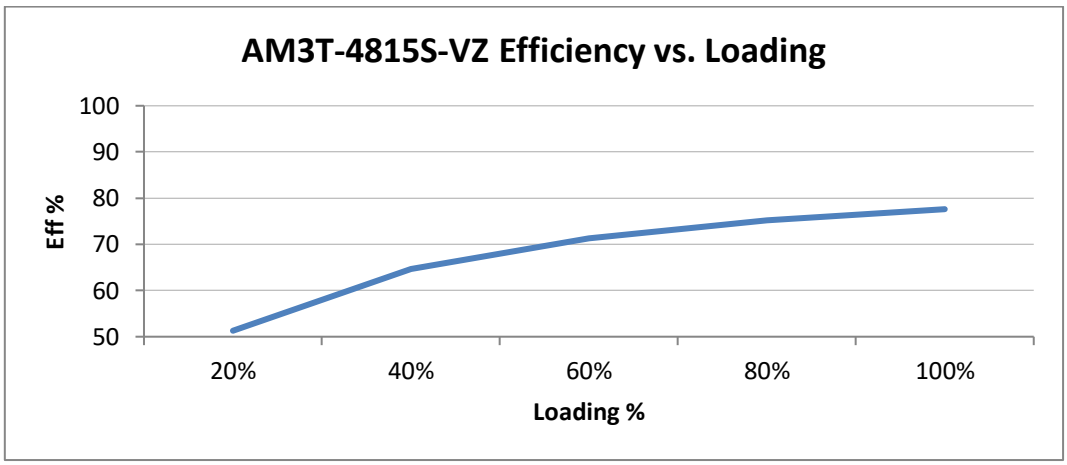


Typical Efficiency Example Charts









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