

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 -40°C to +85°C
- Input / Output Isolation 1500 or 3500 VDC
- Pin Compatible with Multiple Manufacturers
- Continuous Short Circuit Protection



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

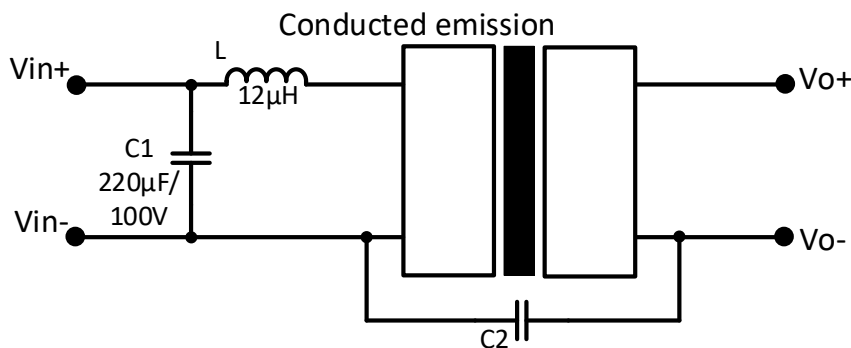
Parameters	Conditions	Typical	Maximum	Units
Switching Frequency	100% load	100-400		KHz
Operating Temperature	Full Load	-40 to +85		°C
Storage Temperature		-40 to +125		°C
Max Case Temperature			100	°C
Cooling	Free air convection			
Humidity			95	%
Case Material	Nickel coated copper			
Weight		17		g
Dimensions (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.

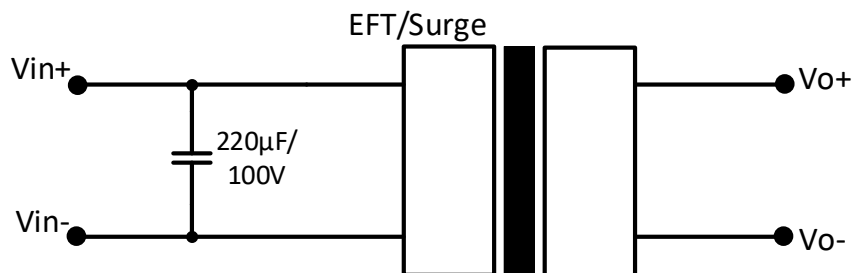
Safety Specifications

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



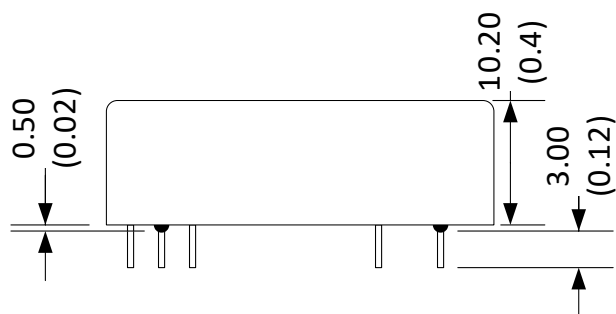
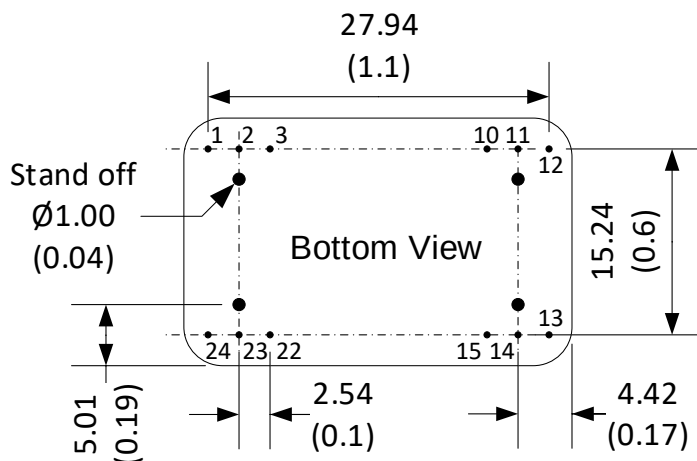
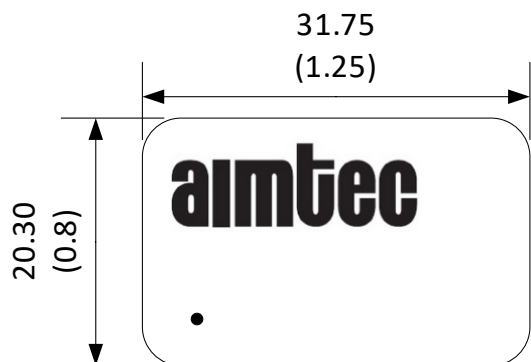
Vin	C2
5	-
12	-
24	470pF MLCC
48	470pF MLCC



Pin Out Specifications

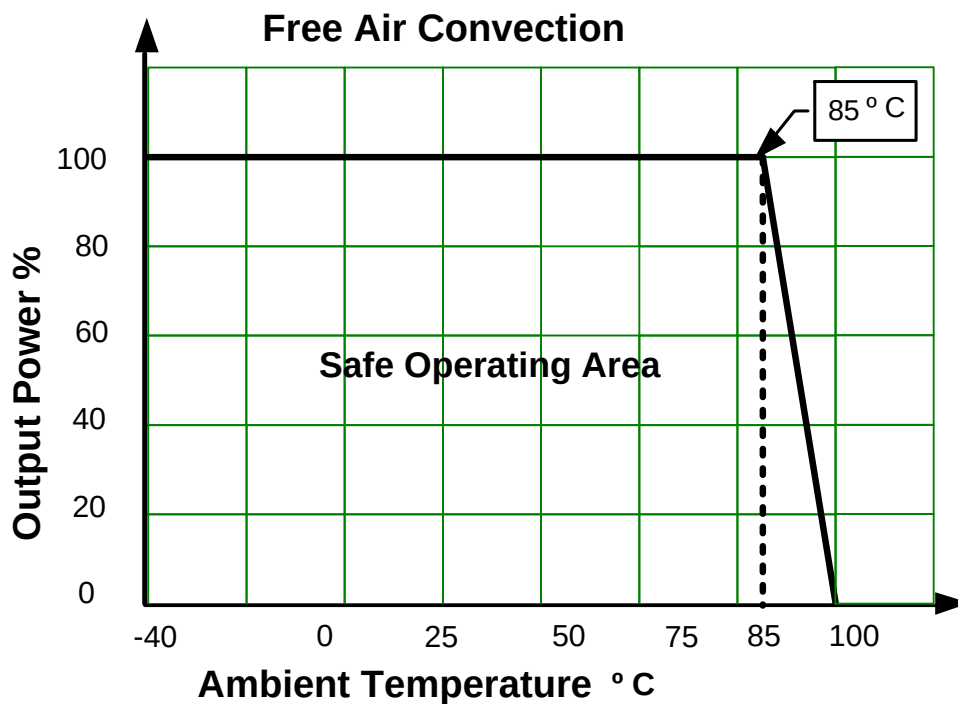
Pin	1500 VDC Isolation		3500 VDC Isolation	
	Single	Dual	Single	Dual
1	+V Input	+V Input	No Pin	No Pin
2	N.C.	-V Output	-V Input	-V Input
3	N.C.	Common	-V Input	-V Input
9	No pin	No pin	No pin	Common
10	-V Output	Common	No pin	No pin
11	+V Output	+V Output	N.C.	-V Output
12	-V Input	-V Input	No pin	No 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

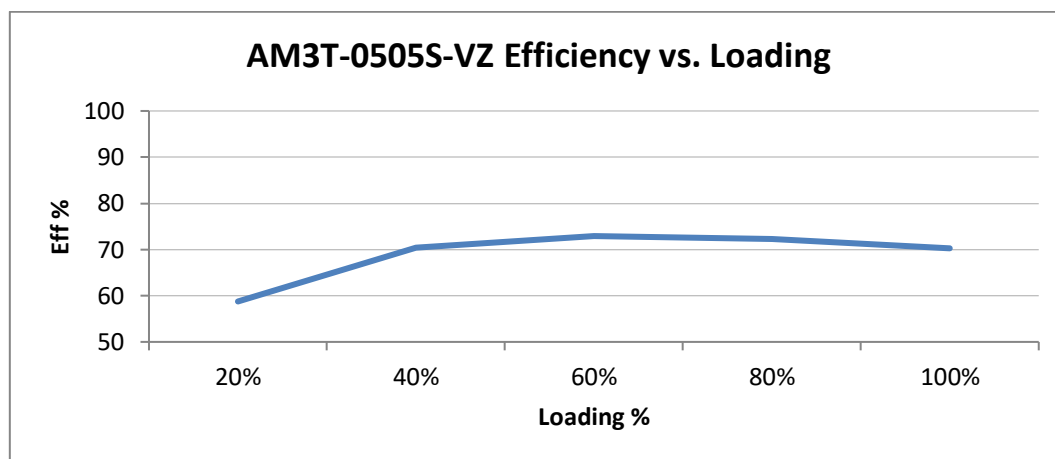


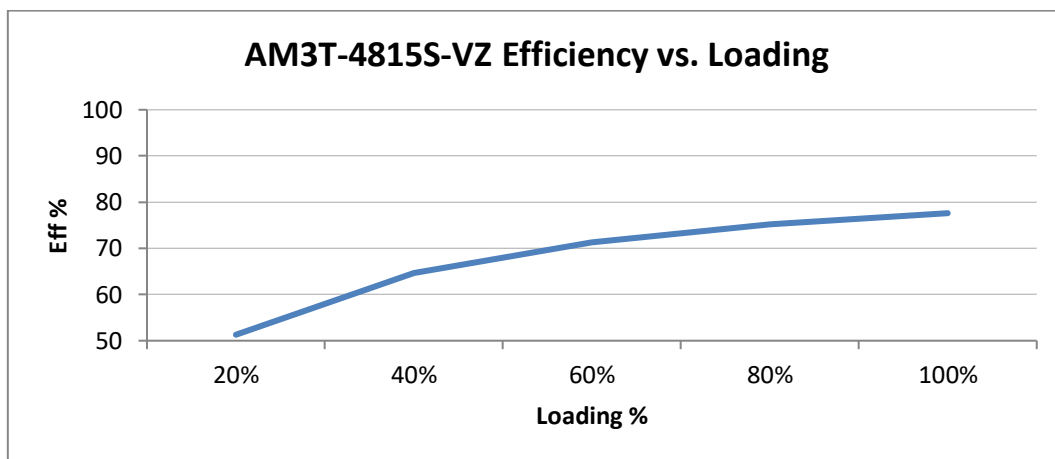
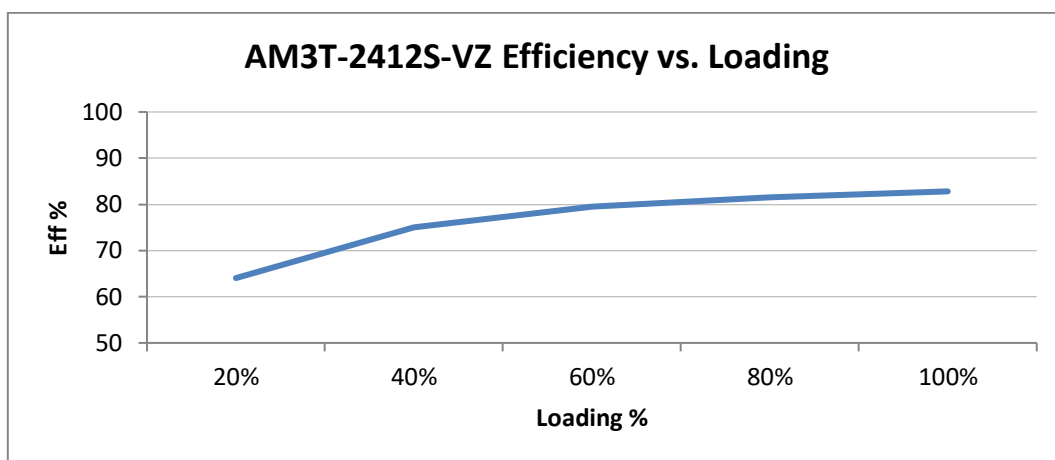
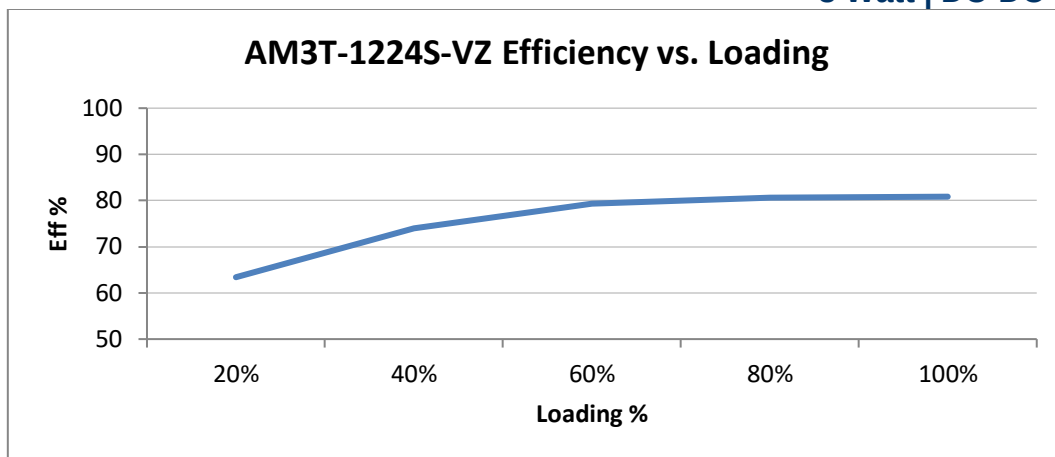
All dimensions are typical: millimeters (inches)
Pin Diameter: 0.50 ± 0.05 (0.02 ± 0.002)
Pin Pitch tolerance: ± 0.35 (± 0.014)
Case tolerance: ± 0.5 (± 0.02)
Stand off tolerance: ± 0.1 (± 0.004)

Derating



Typical Efficiency Example Charts





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