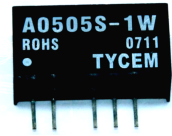


DESCRIPTION

The AxxxxS-1W series of industrial temperature range DC/DC converters are the standard building blocks for on-board distributed power systems. They are ideally suited for providing dual rail supplies on primarily digital boards with the added benefit of galvanic isolation to reduce switching noise. All of the rated power may be drawn from a single pin provided the total load does not exceed 1 watt.



FEATURES

- | | |
|---|--|
| ◇ RoHS compliant | ◇ Power sharing on output |
| ◇ Efficiency up to 80% | ◇ 1kVDC isolation |
| ◇ Power density up to 0.85W/cm ³ | ◇ 5V, 12V, 24V, & 48V input |
| ◇ Wide temperature performance at full 1 Watt load, -40°C to 85°C | ◇ 5V, 9V, 12V and 15V output |
| ◇ Dual output from a single input rail | ◇ Internal SMD construction |
| ◇ UL 94V-0 package material | ◇ Fully encapsulated with toroidal magnetics |
| ◇ No heatsink required | ◇ No external components required |
| ◇ Footprint from 1.17cm ² | ◇ MTTF up to 1.6 million hours |
| ◇ Industry standard pinout | ◇ No electrolytic or tantalum capacitors |

SELECTION GUIDE

Order Code	Input Voltage	Output Voltage	Output Current	Input Current (Rated Load)	Efficiency	Isolation Capacitance	MTTF ¹	Package Style
	(V)	(V)	(mA)	(mA)	%	pF	kHrs	
A0505S-1W	5	±5	±100	289	69	28	1697	SIP
A0509S-1W	5	±9	±55	267	75	32	682	
A0512S-1W	5	±12	±42	260	77	34	343	
A0515S-1W	5	±15	±33	256	78	36	188	
A1205S-1W	12	±5	±100	120	69	33	559	
A1209S-1W	12	±9	±55	113	74	46	375	
A1212S-1W	12	±12	±42	111	75	55	243	
A1215S-1W	12	±15	±33	110	76	54	154	
A2405S-1W	24	±5	±100	60	70	39	194	
A2409S-1W	24	±9	±55	54	77	85	129	
A2412S-1W	24	±12	±42	52	80	65	134	
A2415S-1W	24	±15	±33	52	80	95	101	
A4805S-1W	48	±5	±100	30	70	26	206	
A4809S-1W	48	±9	±55	26	80	38	174	
A4812S-1W	48	±12	±42	26	80	52	139	
A4815S-1W	48	±15	±33	26	80	56	104	

When operated with additional external load capacitance the rise time of the input voltage will determine the maximum external capacitance value for guaranteed start up. The slower the rise time of the input voltage the greater the maximum value of the additional external capacitance for reliable start up.

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	Continuous operation, 5V input types	4.5	5	5.5	V
	Continuous operation, 12V input types	10.8	12	13.2	
	Continuous operation, 24V input types	21.6	24	26.4	
	Continuous operation, 48V input types	43.2	48	52.8	
Reflected ripple current			20	33	mA p-p

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units	
Rated Power ²	TA=-40°C to 85°C			1	W	
Voltage Set Point Accuracy	See tolerance envelope					
Line regulation	High VIN to low VIN		1	1.2	%/%	
Load Regulation	10% load to rated load, 5V output types		10	12.5	%	
	10% load to rated load, 9V output types		9	10		
	10% load to rated load, 12V output types		6.5	7.5		
	10% load to rated load, 15V output types		6	7		
Ripple and Noise	5V & 12V Input	BW=DC to 20MHz, 5V output types		40	75	mV p-p
		BW=DC to 20MHz, 9V output types		25	50	
		BW=DC to 20MHz, 12V output types		25	50	
		BW=DC to 20MHz, 15V output types		20	50	
	24V & 48V Input	BW=DC to 20MHz, All output types			150	

ABSOLUTE MAXIMUM RATINGS

Short-circuit protection ³				1 second
Lead temperature 1.5mm from case for 10 seconds				300°C
Internal power dissipation				450mW
Input voltage VIN, A05 types				7V
Input voltage VIN, A12 types				15V
Input voltage VIN, A24 types				28V
Input voltage VIN, A48 types				54V

ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Type	Max.	Units
Isolation test voltage	Flash tested for 1 second	3000			VDC
Resistance	Viso= 500VDC		10		GΩ

TEMPERATURE CHARACTERISTICS

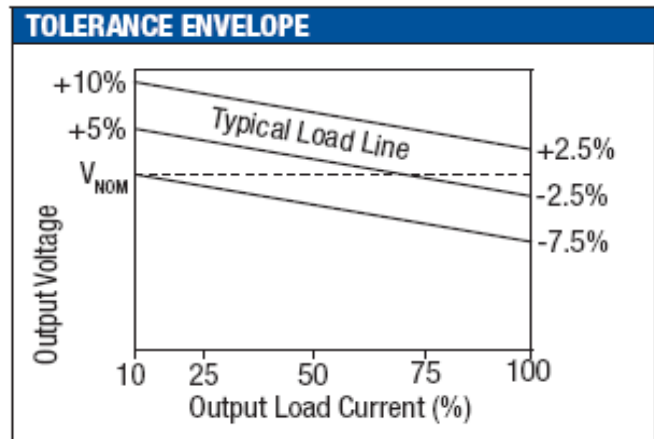
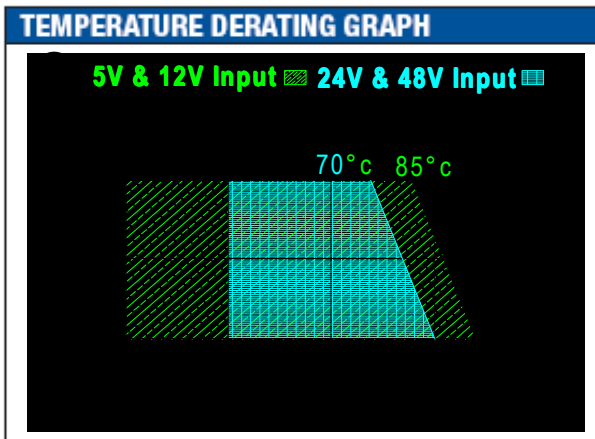
Parameter	Conditions	Min.	Type	Max.	Units
Specification	5V & 12V input types	-40		85	°C
	24V & 48V input types	0		70	
Storage	All	-50		150	
Case Temperature above ambient	5V output types		33		
	All other output types			28	
Cooling	Free air onvection				

GENERAL CHARACTERISTICS

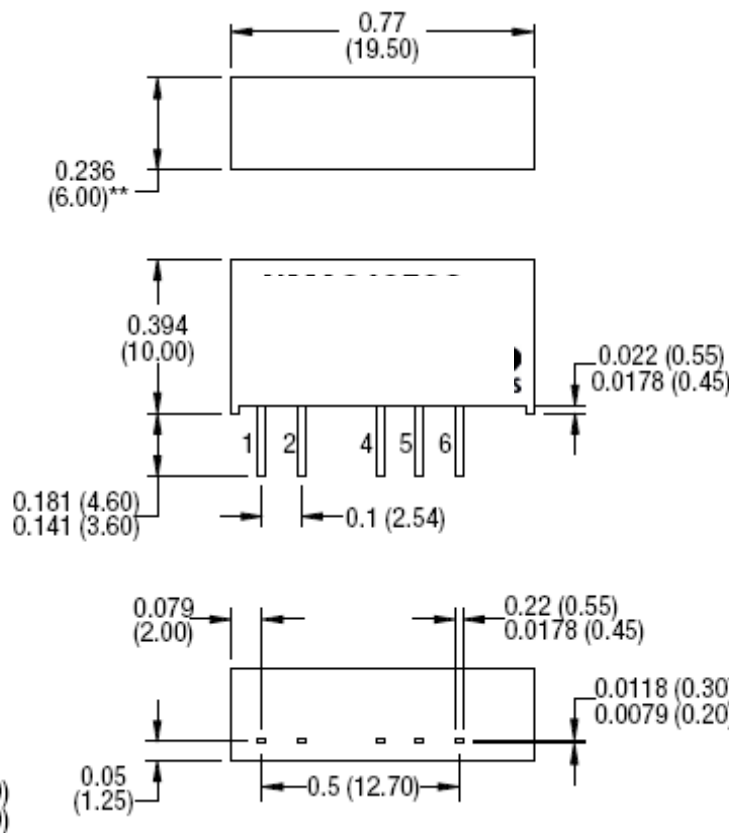
Parameter	Conditions	Min.	Type	Max.	Units
Switching frequency	All input types		100		kHz

1. Calculated using MIL-HDBK-217F with nominal input voltage at full load.
2. See derating graph
3. Supply voltage must be discontinued at the end of the short circuit duration.

All specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified.



PACKAGE SPECIFICATIONS



PIN CONNECTIONS - 7 PIN SIP

Pin	Function
1	+VIN
2	-VIN
4	-VOUT
5	0V
6	+VOUT

All dimensions in inches ±0.01.
All pins on a 0.1 pitch and within 0.01 of true position.

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