



## 3S4A\_1U Series

3W Single Output - Fixed Input - Isolated & Unregulated SIP PACKAGE

### DC-DC Converter

3 Watt

- ⊕ Small Footprint
- ⊕ Ultra compact SIP package
- ⊕ High power density: 2.0W/cm<sup>3</sup>
- ⊕ Temperature range: -40°C ~ +85°C
- ⊕ Efficiency up to 86%
- ⊕ No external component required
- ⊕ 1KVDC isolation
- ⊕ Internal SMD construction
- ⊕ Industry standard pinout
- ⊕ RoHS compliance

The 3S4A\_U series are miniature, isolated 3W DC/DC converters in a SIP package. They offer the ideal solution in many space critical applications for board level power distribution.

The internal SMD construction makes it possible to offer a product with high performance at low cost. The series offers smaller size, improved efficiency, lower output ripple noise and 1KVDC isolation.



Common specifications	
Short circuit protection*:	1 second
Casing temperature rise at full load:	5V output: 46°C MAX Other output: 38°C MAX
Cooling:	Free air convection
Operation temperature range:	-40°C – +85°C
Storage temperature range:	-50°C – +130°C
Lead temperature:	300°C (1.5mm from case for 10 sec.)
Storage humidity range:	< 95%
Internal power dissipation:	800mW
Case material:	Black flame-retardant heat-proof plastic [UL94-V0]
Potting material:	Epoxy [UL94-V0]
MTBF:	>3,500,000 hours
Weight:	2.0g

\* Supply voltage must be discontinued at the end of short circuit duration.

Isolation specifications					
Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute	1000			VDC
Isolation resistance	Input-output, isolation voltage 500VDC	1000			MΩ

#### Model selection:

WCTP\*\*\_xyyN##O

W=Watt; C= Case; T=Type; P=Pinning; \*\*= Voltage Variation (omitted ± 10%); xx= Vin; yy= Vout; N= Numbers of Output; ##= Isolation (kVDC); O= output regulation

#### Example:

3S7A\_0505S1U

3= 3Watt; S7= SIP7; A= Pinning; 5Vin; 5Vout; S= Single Output; 1= 1kVDC; U= Unregulated Output

Output specifications						
Item	Test condition	Min	Typ	Max	Units	
Output voltage accuracy	See tolerance envelope					
Line regulation	For Vin change of ±1%			±1.2	%	
Load regulation (10%-100% load)	• 3.3/5/15VDC output • 9VDC output • 12VDC output			9 5 6	%	
Temperature drift	100% full load			±0.03	%/°C	
Ripple&Noise*	20MHz Bandwidth		100		mVp-p	
Switching frequency	Full load, nominal input		95		KHz	

\*Ripple and noise are measured by “parallel cable” method.

Input specifications					
Item	Test condition	Min	Typ	Max	Units
Voltage range	• 5V input • 12V input	4.5 11	5 12	5.5 13.3	V V
Reflected ripple current	• 5V input • 12V input		35 40		mA mA
Surge voltage	• 5V input • 12V input	-0.7 -0.7		9 18	VDC VDC
Input filter	Capacitor				
Hot plug	Unavailable				

#### EMC specifications

EMI	CE	CISPR22/EN55022	CLASS B	(see EMC solution-recommended circuit)	
EMI	RE	CISPR22/EN55022	CLASS B	(see EMC solution-recommended circuit)	
EMI	ESD	IEC 61000-4-2	Contact	±6KV	perf. Criteria B

#### Note:

- If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
- The maximum capacitive load offered were tested at nominal input voltage and full load;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75% with nominal input voltage and rated output load;
- All index testing methods in this datasheet are based on our Company's corporate standards;
- The performance parameters of the product models listed in this manual are as above, but some parameters of non-standard model products may exceed the requirements mentioned above. Please contact our technicians directly for specific information;
- We can provide product customization service;
- Specifications are subject to change without prior notice.

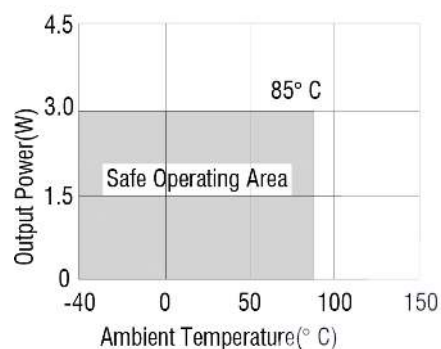
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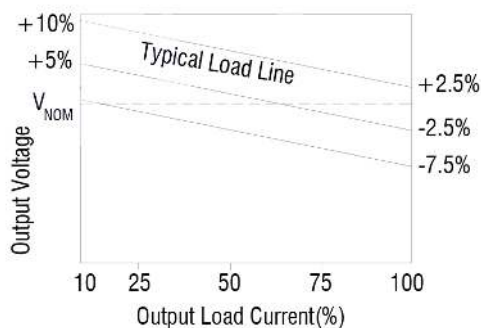
Part Number	Input Voltage [V]	Output Voltage [VDC]	Current [mA, max]	Efficiency [%, typ]	Capacitor load [ $\mu$ F]
3S4A_0503S1U	5	3.3	909	80	220
3S4A_0505S1U	5	5	600	77	220
3S4A_0509S1U	5	9	333	80	220
3S4A_0512S1U	5	12	250	83	220
3S4A_0515S1U	5	15	200	82	220
3S4A_1203S1U	12	3.3	909	80	220
3S4A_1205S1U	12	5	600	80	220
3S4A_1209S1U	12	9	333	84	220
3S4A_1212S1U	12	12	250	86	220
3S4A_1215S1U	12	15	200	85	220

## Typical characteristics

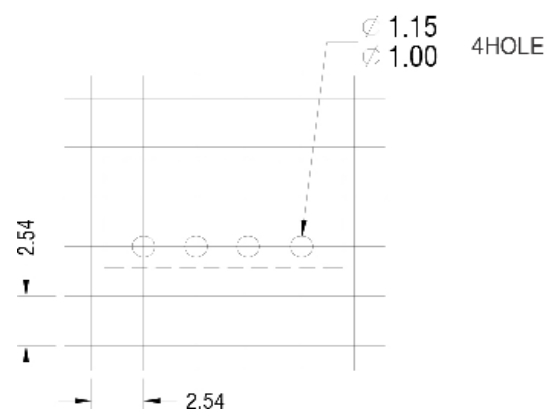
Temperature derating



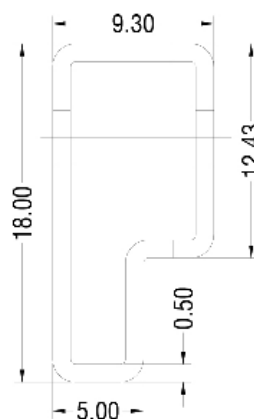
Tolerance envelopes



## Recommended footprint



## Tube outline



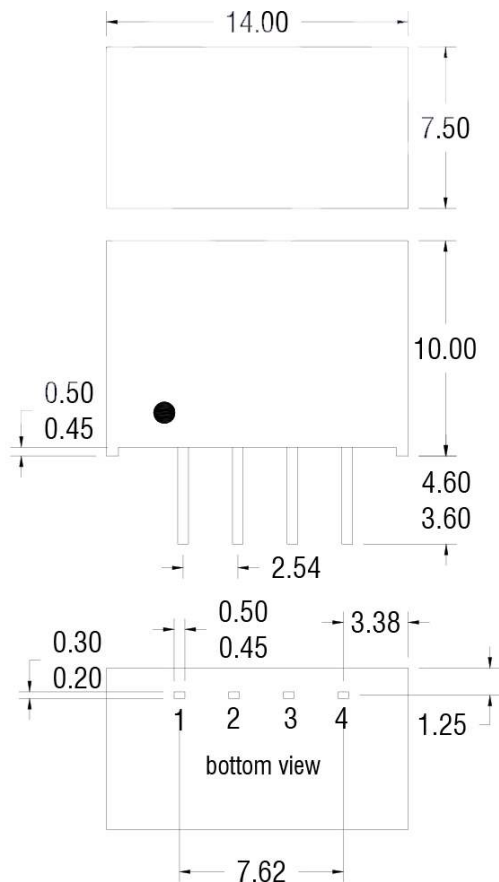
**Note:**  
Unit: mm  
General tolerance:  $\pm 0.5$ mm  
Tube length: 520mm;  $\pm 2$ mm  
Tube quantity: 35pcs

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### Mechanical Dimensions

### Pin connections



Pin	Function
1	-Vin
2	+Vin
3	-Vout
4	+Vout

**Note:**

Unit: mm  
All pins on a 2.54mm pitch  
Pin diameter:  $\pm 0.25$ mm  
Case tolerances:  $\pm 0.25$ mm