



3S7A_1.5UP series

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

DC-DC Converter

3 Watt

- ⊕ Small footprint
- ⊕ Ultra compact SIP package
- ⊕ High power density
- ⊕ Operation temperature range: -40°C ~ +105°C
- ⊕ No heat sink required
- ⊕ No external component required
- ⊕ 1.5kVDC isolation
- ⊕ Internal SMD construction
- ⊕ Industry standard pinout
- ⊕ RoHS compliance



The 3S7A_1.5UP series is specially designed for applications where an isolated voltage is required in a distributed power supply system.

These products apply to:

- 1) Where the voltage of the input power supply is stable (voltage variation $\leq \pm 10\%$);
- 2) Where isolation is necessary between input and output (isolation voltage $\leq 1500\text{VDC}$);
- 3) Where the output voltage regulation and the ripple & noise of the output voltage is not strictly required.

Typical application: digit circuit condition; normal low-frequency artificial circuit condition; relay drive circuit condition, etc.

Common specifications

Short circuit protection:	Continuous, automatic recovery
Case temperature above ambient:	35°C MAX T3S7A_0505/3S7A_1205: 37°C MAX
Cooling:	Free air convection
Operation temperature range:	-40°C to +105°C
Storage temperature range:	-50°C to +150°C
Lead temperature:	300°C (1.5mm from case for 10 sec.)
Storage humidity range:	< 95%
Case material:	Black flame-retardant heat-proof plastic [UL94-V0]
Potting material:	Epoxy [UL94-V0]
MTBF:	>3,500,000 hours
Weight:	2.8g

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute	1500			VDC
Isolation resistance	Input-output, isolation voltage 500VDC	1000			MΩ

Example:

3S7A_0505S1.5UP

3 = 3 Watt; S7 = SIP7; A = Pinning; 5Vin; 5Vout; S = Single Output;
1.5 = 1.5kVDC; U = Unregulated Output; P = Short Circuit Protection

Output specifications

Item	Test condition	Min	Typ	Max	Units
Rated power				3	W
Voltage set point accuracy	See tolerance envelope				
Line regulation	High Vin to low Vin		1	1.2	%
Load regulation	10%-100% load		8		%
Temperature drift	100% full load			± 0.03	%/°C
Ripple&Noise*	20MHz Bandwidth • 5VDC output • 9/12VDC output		100 150		mVp-p mVp-p
Switching frequency	Full load, nominal input		65		KHz

*Ripple and noise are measured by "parallel cable" method.

Input specifications

Item	Test condition	Min	Typ	Max	Units
Voltage range	• 3.3V input • 5V input • 12V input • 15V input • 24V input • 48V input	2.9 4.5 11 13.4 21.6 43	3.3 5 12 15 24 48	3.6 5.5 13.2 16.4 26.4 53	V V V V V V
Reflected ripple current			8	15	mA p-p
Internal power dissipation				700	mW

Note:

1. 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;
2. The maximum capacitive load offered were tested at nominal input voltage and full load;
3. Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a = 25^\circ\text{C}$, humidity <75% with nominal input voltage and rated output load;
4. All index testing methods in this datasheet are based on our Company's corporate standards;
6. 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;
7. We can provide product customization service;
8. Specifications are subject to change without prior notice.

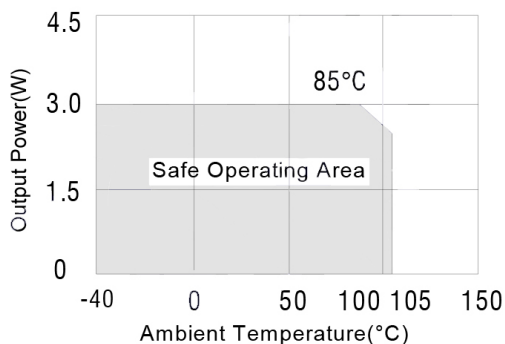
3S7A_1.5UP series

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

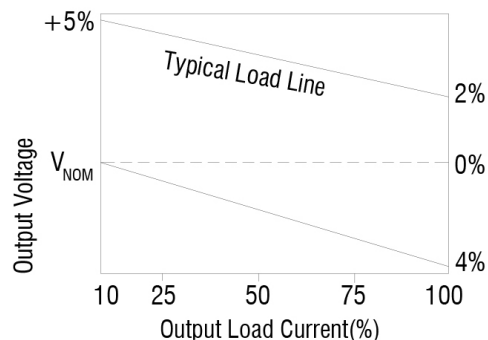
Part Number	Input Voltage [V]	Output Voltage [VDC]	Current [mA, max]	Efficiency [%, typ]	Load regulation [%, max]
3S7A_0305S1.5UP	3.3	5	600	78	7.4
3S7A_0503S1.5UP	5	3.3	909	80	8.0
3S7A_0505S1.5UP	5	5	600	83	7.4
3S7A_0509S1.5UP	5	9	333	86	6.1
3S7A_0512S1.5UP	5	12	250	87	5.1
3S7A_0515S1.5UP	5	15	200	87	4.5
3S7A_0524S1.5UP	5	24	125	87	4.5
3S7A_1203S1.5UP	12	3.3	909	80	8.0
3S7A_1205S1.5UP	12	5	600	83	4.8
3S7A_1209S1.5UP	12	9	333	87	3.2
3S7A_1212S1.5UP	12	12	250	88	2.9
3S7A_1215S1.5UP	12	15	200	88	2.5
3S7A_12124S1.5UP	12	24	125	87	4.5
3S7A_1505S1.5UP	15	5	600	80	7.4
3S7A_1515S1.5UP	15	15	200	80	2.5
3S7A_2403S1.5UP	24	3.3	909	76	7.4
3S7A_2405S1.5UP	24	5	600	83	6.5
3S7A_2409S1.5UP	24	9	333	83	3.2
3S7A_2412S1.5UP	24	12	250	84	2.9
3S7A_2415S1.5UP	24	15	200	84	2.5
3S7A_24124S1.5UP	24	24	125	87	4.5
3S7A_4805S1.5UP	48	5	600	83	6.5
3S7A_4812S1.5UP	48	12	250	83	2.9

Typical characteristics

Temperature derating graph

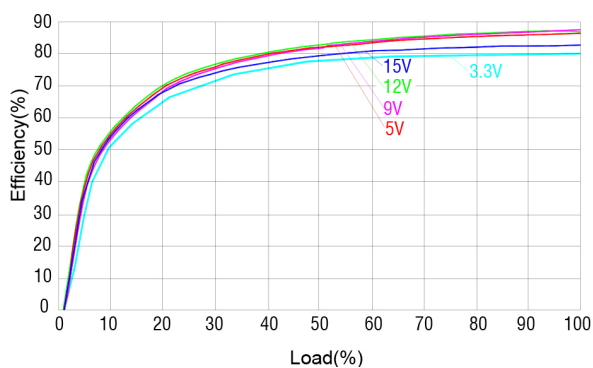


Tolerance envelopes

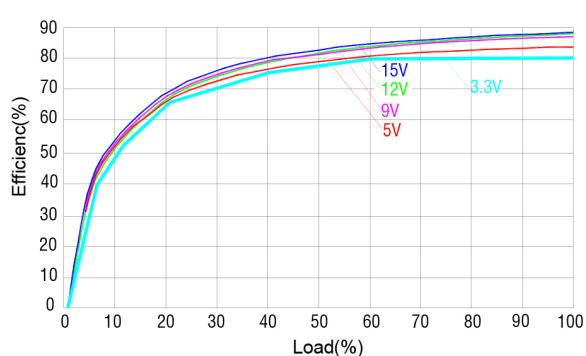


Efficiency

5V Input Voltage



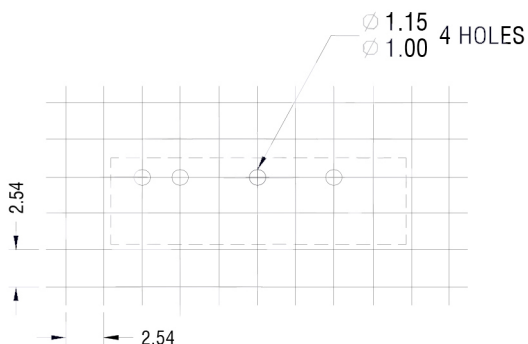
12V Input Voltage



3S7A_1.5UP series

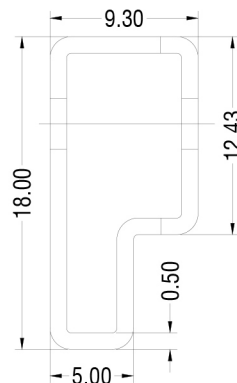
3W Single Output - Fixed Input - Isolated & Unregulated
SIP PACKAGE

Footprint



Unless otherwise stated all dimensions in mm ± 0.5 mm.

Tube outline

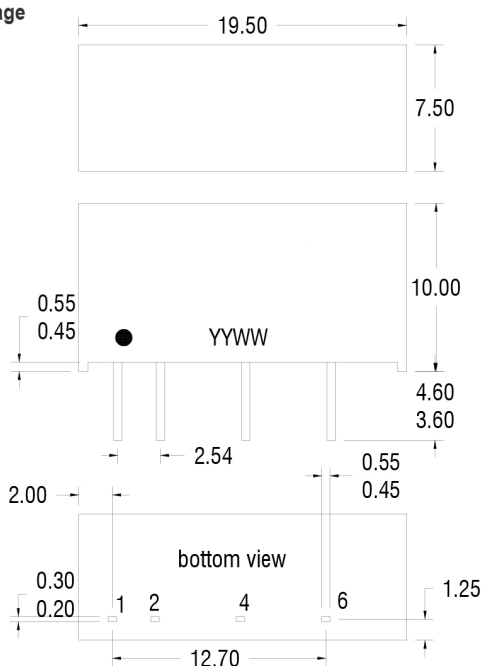


Unless otherwise stated all dimensions in mm ± 0.5 mm.

Tube length : 520mm ± 2 mm. Tube Quantity : 25PCS

Mechanical Dimensions

SIP Package



Note:

Unit: mm[inch]

General tolerances: ± 0.25 mm [± 0.010 inch]

Pin tolerances: ± 0.25 mm [± 0.010 inch]

All pins on a 2.54mm pitch.

PIN connections

7 PIN SIP	
Pin	Function
1	+Vin
2	-Vin
4	-Vout
6	+Vout