

## 157B\_4UP Series

1W - Single/Dual Output DC-DC Converter - Fixed Input - Isolated & Unregulated

### DC-DC Converter

1 Watt

-  High efficiency up to 83%
-  4000VDC isolation
-  SIP package
-  International standard pinout
-  Ambient temperature: -40°C to +105°C
-  RoHS compliance
-  Short circuit protection (SCP)

The 157B\_4UP 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  $\leq 4000\text{VDC}$ )
- 3) Where the regulation of the output voltage and the output ripple noise are not demanding

Such as: pure digital circuits, low frequency analog circuits and relay-driven circuits, etc.



#### Common specifications

Short circuit protection:	Continuous
Case temperature above ambient:	30°C MAX
Cooling:	Free air convection
Operation temperature range:	-40°C – +105°C
Storage temperature range:	-50°C – +130°C
Lead temperature:	300°C MAX, 1.5mm from case for 10 sec
Storage humidity range:	< 95%
MTBF (MIL-HDBK-217F@25°C):	>3,500,000 hours
Case material:	Plastic [UL94-V0]
Weight:	2.1g

#### Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute	4000			VDC
Isolation resistance	Test at 1000VDC	1000			GΩ

#### Example:

157B\_0505D4UP

1= 1Watt; S7= SIP7; B= Pinning; 5Vin; 5Vout; D= Dual Output;  
4= 4kVDC; U= Unregulated Output; P= Short circuit protection

#### Output specifications

Item	Test condition	Min	Typ	Max	Units
Output voltage accuracy	See tolerance envelope curve				
Line regulation	For Vin change of $\pm 1\%$	1	1.2		%
Switching frequency	• 3.3V input	95			kHz
	• 5VDC input	120	140		kHz
	• 9VDC input	120	140		kHz
	• 12VDC input	145	180		kHz
	• 15VDC input	90	180		kHz

#### Input specifications

Item	Test condition	Min	Typ	Max	Units
Voltage range	• 3.3V input	2.9	3.3	3.6	VDC
	• 5VDC input	4.4	5	5.6	VDC
	• 9VDC input	8.03	9	10	VDC
	• 12VDC input	11	12	13.3	VDC
	• 15VDC input	13.4	15	16.4	VDC
Voltage Vin: maximum rating	• 3.3V input			5.5	VDC
	• 5VDC input			6.6	VDC
	• 9VDC input			11.5	VDC
	• 12VDC input			14.5	VDC
	• 15VDC input			18	VDC
Internal power dissipation	maximum rating			540	mW

#### Note:

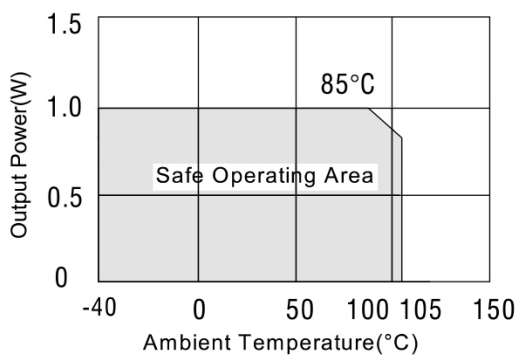
1. Operation under minimum load will not damage the converter; however, they may not meet all specifications.
2. Unless otherwise noted, All specifications are measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load.
3. In this datasheet, all test methods are based on our corporate standards.
4. All characteristics are for listed models, and non-standard models may perform differently. Please contact our technical support for more detail.
5. Please contact our technical support for any specific requirement.
6. Specifications of this product are subject to changes without prior notice.

## 1S7B\_4UP Series Series

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Part Number	Input Voltage [V]	Output Voltage [VDC]	Output current [mA]	Efficiency [%, typ]
1S7B_0303S4UP	3.3	3.3	303	72
1S7B_0305S4UP	3.3	5	200	72
1S7B_0503S4UP	5	3.3	303	73
1S7B_0505S4UP	5	5	200	83
1S7B_0509S4UP	5	9	111	75
1S7B_0512S4UP	5	12	84	76
1S7B_0515S4UP	5	15	67	78
1S7B_0524S4UP	5	24	42	79
1S7B_0909S4UP	9	9	111	79
1S7B_0915S4UP	9	15	67	82
1S7B_1203S4UP	12	3.3	303	70
1S7B_1205S4UP	12	5	200	72
1S7B_1209S4UP	12	9	111	75
1S7B_1212S4UP	12	12	84	77
1S7B_1215S4UP	12	15	67	78
1S7B_1224S4UP	12	24	42	79
1S7B_1505S4UP	15	5	200	72
1S7B_1509S4UP	15	9	111	73
1S7B_1512S4UP	15	12	84	74
1S7B_1515S4UP	15	15	67	78
1S7B_0505D4UP	5	±5	±100	72
1S7B_0509D4UP	5	±9	±55	77
1S7B_0512D4UP	5	±12	±43	78
1S7B_0515D4UP	5	±15	±33	80
1S7B_1205D4UP	12	±5	±100	72
1S7B_1209D4UP	12	±9	±55	74
1S7B_1212D4UP	12	±12	±43	76
1S7B_1215D4UP	12	±15	±33	77
1S7B_1505D4UP	15	±5	±100	72
1S7B_1512D4UP	15	±12	±43	74
1S7B_1515D4UP	15	±15	±33	78

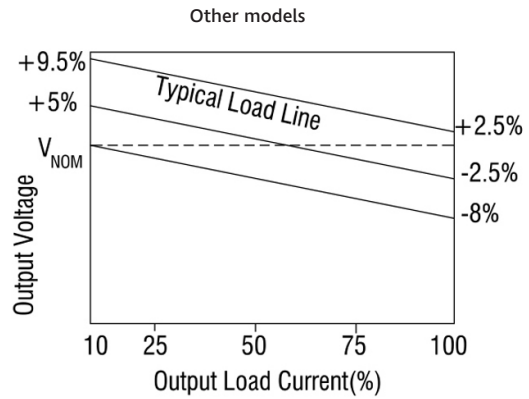
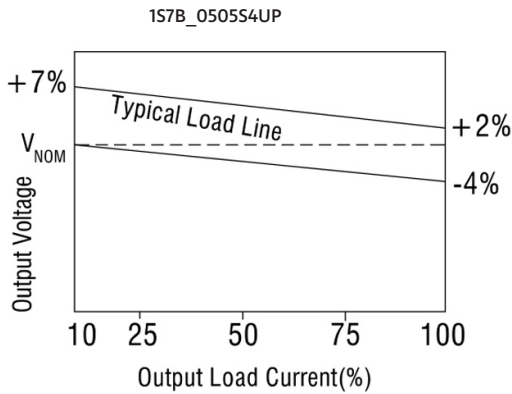
## Temperature derating



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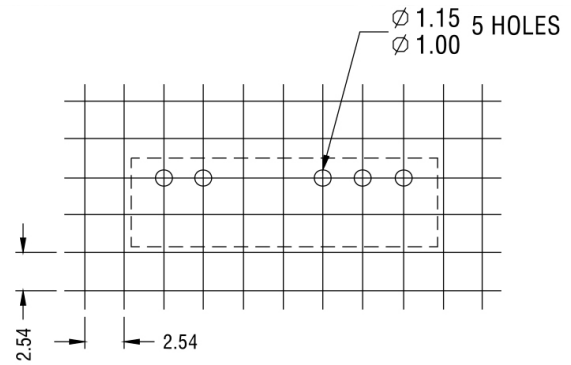
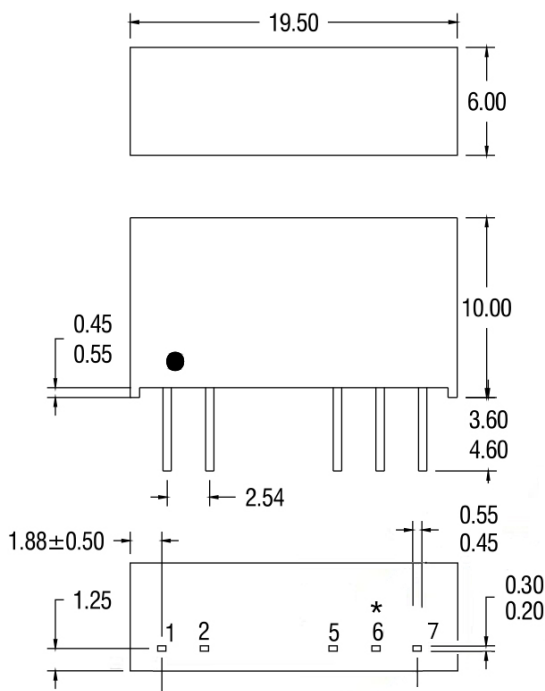
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## Tolerance envelope

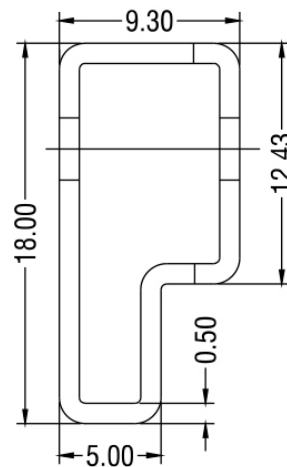


## Mechanical dimensions Recommended footprint

### SIP Package



### Tube outline



**Note:**

\* Pin not fitted on single output variants.

All dimensions in mm ±0.25mm.

All pins on a 2.54mm pitch within ±0.25mm of true position.

**Note:**

All dimensions in mm ±0.5mm.

Tube length: 520mm ±2mm  
Tube quantity: 25 pcs

PIN	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	No Pin	0V
7	+Vout	+Vout