

## 0.157B\_3UP series

0.1W - Single/Dual Output - Fixed Input - Isolated & Unregulated  
MINIATURE SIP PACKAGE

### DC-DC Converter

0.1 Watt

- ⊕ Efficiency up to 58%
- ⊕ Small footprint from 1.17cm<sup>2</sup>
- ⊕ SIP package
- ⊕ Single/dual output voltage
- ⊕ 3kVDC isolation
- ⊕ Temperature range: -40°C~+105°C
- ⊕ Industry standard pinout
- ⊕ UL94-V0 package
- ⊕ No heat sink required
- ⊕ Power density 0.85W/cm<sup>3</sup>
- ⊕ RoHS compliance

The 0.157B\_3UP Series are specially designed for applications where a single power supply is isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is fixed (voltage variation  $\leq \pm 10\%$ );
- 2) Where isolation is necessary between input and output (isolation voltage = 3000VDC)



Common specifications	
Short circuit protection:	Continuous, automatic recovery
Temperature rise at full load:	25°C MAX, 15°C TYP
Cooling:	Free air convection
Operation temperature range:	-40°C~+105°C Derating if the temperature $\geq 85^\circ\text{C}$
Storage temperature range:	-55°C ~+130°C
Storage humidity range:	95% MAX
Lead temperature:	300°C, 1.5mm from case for 10 seconds
Case material:	Plastic [UL94-V0]
MTBF (MIL-HDBK-217F@25°C):	>3,500,000 hours
Weight:	2.11g

Input specifications					
Item	Test condition	Min	Typ	Max	Units
Voltage range	• 3.3V input types	2.9	3.3	3.6	V
	• 5V input types	4.4	5	5.6	V
	• 12V input types	11	12	13.3	V
	• 15V input types	13.4	15	16.4	V

Isolation specifications					
Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Input to Output (1sec)	3000			VDC
Isolation resistance	Test at 1000VDC	1			GΩ

Output specifications						
Item	Test condition	Min	Typ	Max	Units	
Rated power				0.1	W	
Line regulation	High Vin to low Vin			1.32	%	
Load regulation	10% to 100% full load • 3.3V/5V types • Other			8	%	
				6	%	
Output voltage accuracy	See tolerance envelope					
Temperature drift	100% full load			$\pm 0.03$	%/°C	
Ripple & Noise	20MHz Bandwidth			75	mVp-p	
Switching frequency	Full load, nominal input • 3.3V input types • 5V input types • 12V input types • 15V input types		95		KHz	
			120	140	KHz	
			145	180	KHz	
			90	180	KHz	

#### Example:

**0.157B\_2405S3UP**

0.1 = 0.1Watt; S7 = SIP7; B = Pinning; 24 = 24Vin; 05 = 5Vout; S = Single Output; 3 = 3kVDC; U = Unregulated Output; P = Short Circuit Protection

#### Note:

1. All specifications measured at TA = 25°C, humidity < 75%, nominal input voltage and rated output load unless otherwise specified.
2. See below recommended circuits for more details.

## 0.1S7B\_3UP series

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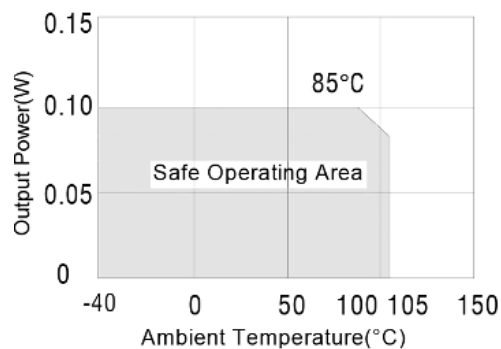
### Product Selection Guide

Part Number	Input Voltage [V]	Output Voltage [VDC]	Output current [mA; max]	Efficiency [%; typ]
0.1S7B_0303S3UP	3.3	3.3	30.3	58
0.1S7B_0305S3UP	3.3	5	20	58
0.1S7B_0505S3UP	5	5	20	57
0.1S7B_0509S3UP	5	9	11.1	58
0.1S7B_0512S3UP	5	12	8.3	58
0.1S7B_0515S3UP	5	15	6.7	58
0.1S7B_0524S3UP	5	24	4.17	55
0.1S7B_1205S3UP	12	5	20	58
0.1S7B_1209S3UP	12	9	11	58
0.1S7B_1212S3UP	12	12	8.3	58
0.1S7B_1215S3UP	12	15	6.7	58
0.1S7B_1505S3UP	15	5	20	58
0.1S7B_1512S3UP	15	12	8.3	58
0.1S7B_1515S3UP	15	15	6.7	58

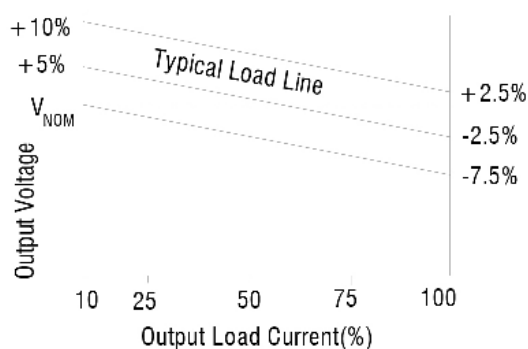
Part Number	Input Voltage [V]	Output Voltage [VDC]	Output current [mA; max]	Efficiency [%; typ]
0.1S7B_0505D3UP	5	±5	±10	56
0.1S7B_0509D3UP	5	±9	±5.55	56
0.1S7B_0512D3UP	5	±12	±4.15	57
0.1S7B_0515D3UP	5	±15	±3.35	57
0.1S7B_1205D3UP	12	±5	±10	58
0.1S7B_1209D3UP	12	±9	±5.55	58
0.1S7B_1212D3UP	12	±12	±4.15	58
0.1S7B_1215D3UP	12	±15	±3.35	58
0.1S7B_1505D3UP	15	±5	±10	58
0.1S7B_1512D3UP	15	±12	±4.15	58
0.1S7B_1515D3UP	15	±15	±3.35	58

### Typical characteristics

Temperature derating graph



Tolerance envelope graph

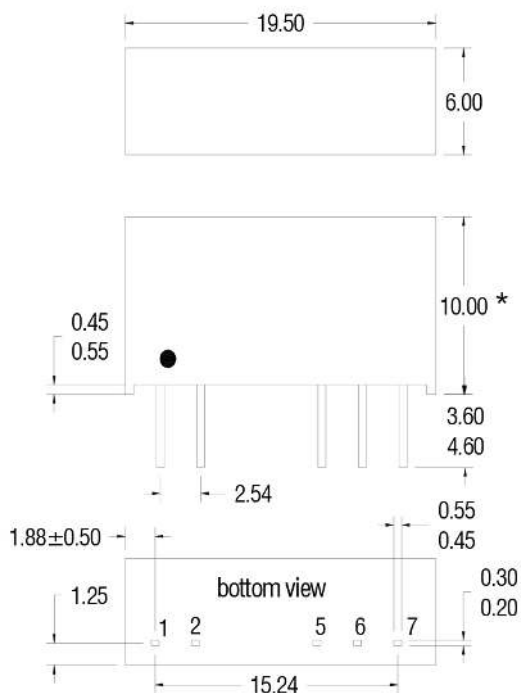


## 0.1S7B\_3UP series

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### Mechanical dimensions

SIP Package



Single output variants	
7 PIN SIP	
Pin	Function
1	+Vin
2	-Vin
5	-Vout
7	+Vout

Dual output variants	
7 PIN SIP	
Pin	Function
1	+Vin
2	-Vin
5	-Vout
6	0V
7	+Vout

**Note:**

Unit: mm  
General tolerances: ± 0.25mm

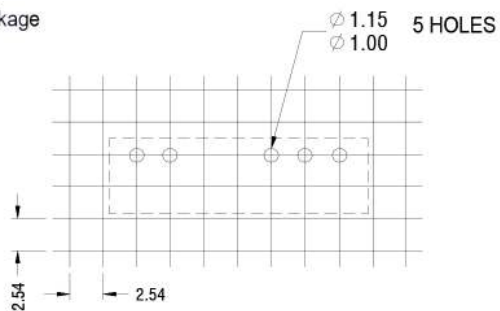
Pin not fitted on single output variants.

\*7.50 for 48V variants

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

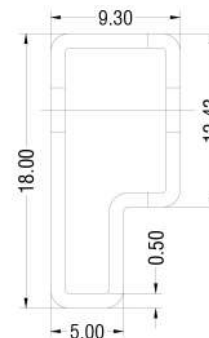
### Recommended footprint

SIP Package



### Tube outline dimensions

7Pin SIP Tube



**Note:**

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

Unless otherwise stated all dimensions in mm ±0.5mm.