

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 83%
- ⊕ Small footprint from 1.17cm²
- ⊕ 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/cm³
- ⊕ 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)
- 3) Where the regulation of the output voltage and the output ripple and noise are not demanding, such as: purely digital circuits, ordinary low frequency analog circuits and IGBT power device driven circuits, etc.



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			± 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; 24Vin; 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.

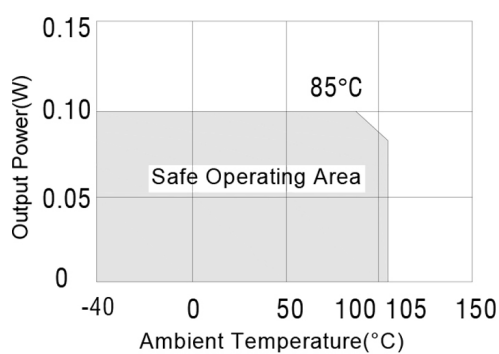
0.1S7B_3UP Series

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

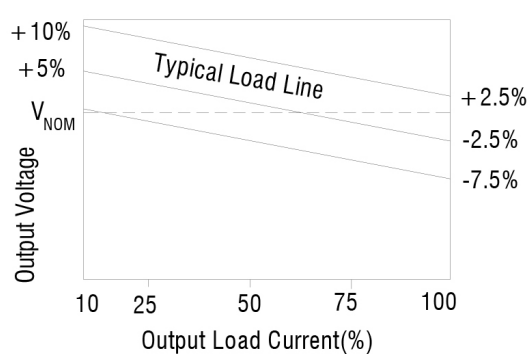
Part Number	Input Voltage [V]	Output Voltage [VDC]	Output current [mA; max]	Efficiency [%; typ]
0.1S7B_0303S3UP	3.3	3.3	30.3	72
0.1S7B_0305S3UP	3.3	5	20	72
0.1S7B_0505S3UP	5	5	20	83
0.1S7B_0509S3UP	5	9	11.1	75
0.1S7B_0512S3UP	5	12	8.3	76
0.1S7B_0515S3UP	5	15	6.7	78
0.1S7B_0524S3UP	5	24	4.17	79
0.1S7B_1205S3UP	12	5	20	72
0.1S7B_1209S3UP	12	9	11	75
0.1S7B_1212S3UP	12	12	8.3	77
0.1S7B_1215S3UP	12	15	6.7	78
0.1S7B_1505S3UP	15	5	20	72
0.1S7B_1512S3UP	15	12	8.3	74
0.1S7B_1515S3UP	15	15	6.7	78
0.1S7B_0505D3UP	5	±5	±10	72
0.1S7B_0509D3UP	5	±9	±5.55	77
0.1S7B_0512D3UP	5	±12	±4.15	78
0.1S7B_0515D3UP	5	±15	±3.35	80
0.1S7B_1205D3UP	12	±5	±10	72
0.1S7B_1209D3UP	12	±9	±5.55	74
0.1S7B_1212D3UP	12	±12	±4.15	76
0.1S7B_1215D3UP	12	±15	±3.35	77
0.1S7B_1505D3UP	15	±5	±10	72
0.1S7B_1512D3UP	15	±12	±4.15	74
0.1S7B_1515D3UP	15	±15	±3.35	78

Typical characteristics

Temperature derating graph



Tolerance envelope graph

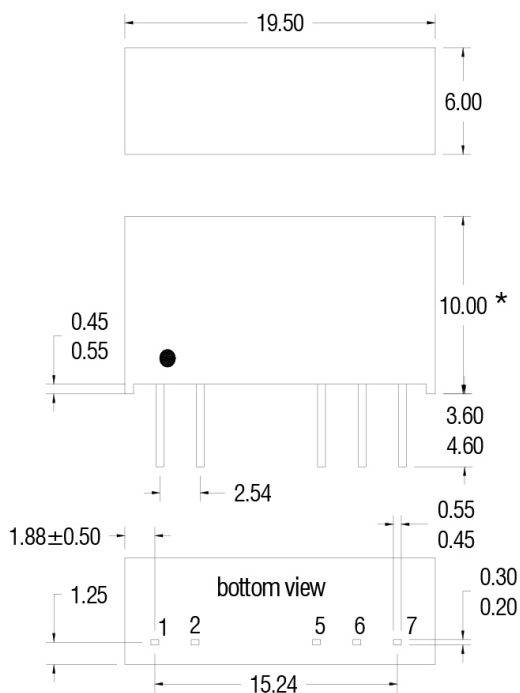


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Mechanical dimensions

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

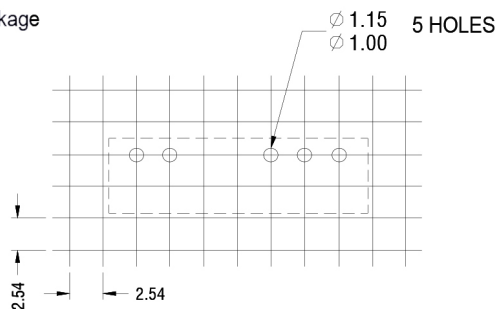
Pin not fitted on single output variants.

*7.50 for 48V variants

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

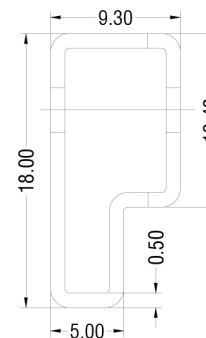
Recommended footprint

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.