

0.5D14B_3UP Series

0.5W - Single Output DC-DC Converter - Fixed Input - Isolated & Unregulated



DC-DC Converter

0.5 Watt

- ⊕ Short circuit protection (SCP)
- ⊕ 3KVDC Isolation
- ⊕ Temperature range: -40°C ~ +105°C
- ⊕ Efficiency up to 80%
- ⊕ Power density up to 0.85W/cm³
- ⊕ Power sharing on dual output
- ⊕ Industry standard pinout
- ⊕ RoHS compliance
- ⊕ Footprint from 1.17cm³

The 0.5D14B_3UP series are miniature, isolated 0.25W DC/DC converters in a SIP and DIP 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 3KVDC isolation.



Common specifications

Short circuit protection:	Continuous, self-recovery
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%
Power density:	< 0.85W/cm³
Case material:	Plastic [UL94-V0]
MTBF (MIL-HDFK-217F@25°C):	>3,500,000 hours
Weight:	2.1g (SIP), 2.4g (DIP)

Output specifications

Item	Test condition	Min	Typ	Max	Units
Output voltage accuracy	See tolerance envelope graph				
Line regulation	From high to low Vin	1	1.32		%
Ripple & Noise*	20MHz Bandwidth	50	75		mVp-p
Temperature drift	100% full load	±0.03			%/°C
Switching frequency	• 3.3VDC input • 5VDC input • 12VDC input • 15VDC input	95 120 145 90		140 180 180	kHz

* Ripple and noise are measured by "parallel cable" method, please see DC-DC Converter Application Notes for specific operation.

Input specifications

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

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute and 1mA max	3000			VDC
Isolation resistance	Test at 1000VDC	1			GΩ

Example DIP14 Case:

0.5D14B_0505S3UP
0.5= 0.5 Watt; D14= DIP14; B= Pinning; 05= 5 Vin; 05= 5Vout;
S= Single Output; 3= 3kVDC Isolation; U= Unregulated Output;
P= Short circuit protection (SCP)

Note:

1. Operation under minimum load will not damage the converter; However, they may not meet all specification listed, and that will reduce the life of product.
2. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
3. Only typical models listed, other models may be different, please contact our technical person for more details.
4. In this datasheet, all the test methods of indications are based on corporate standards.

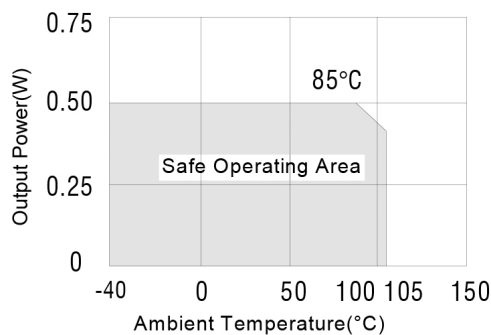
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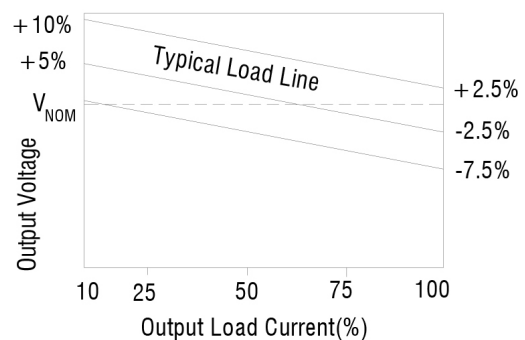
Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max]	Efficiency [%, typ]	Package Style
0.5D14B_0303S3UP	3.3	3.3	152	72	DIP
0.5D14B_0305S3UP	3.3	5	100	72	DIP
0.5D14B_0505S3UP	5	5	100	72	DIP
0.5D14B_0509S3UP	5	9	55.5	75	DIP
0.5D14B_0512S3UP	5	12	41.7	76	DIP
0.5D14B_0515S3UP	5	15	33.3	78	DIP
0.5D14B_1205S3UP	12	5	100	72	DIP
0.5D14B_1209S3UP	12	9	55.5	75	DIP
0.5D14B_1212S3UP	12	12	41.7	77	DIP
0.5D14B_1215S3UP	12	15	33.3	78	DIP
0.5D14B_0505D3UP	5	±5	±50	72	DIP
0.5D14B_0509D3UP	5	±9	±27.75	77	DIP
0.5D14B_0512D3UP	5	±12	±20.85	78	DIP
0.5D14B_0515D3UP	5	±15	±16.65	80	DIP
0.5D14B_1205D3UP	12	±5	±50	72	DIP
0.5D14B_1209D3UP	12	±9	±27.75	74	DIP
0.5D14B_1212D3UP	12	±12	±20.85	76	DIP
0.5D14B_1215D3UP	12	±15	±16.65	77	DIP

Typical characteristics

Temperature derating graph

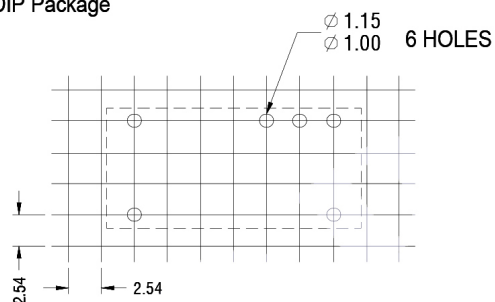


Tolerance envelope graph



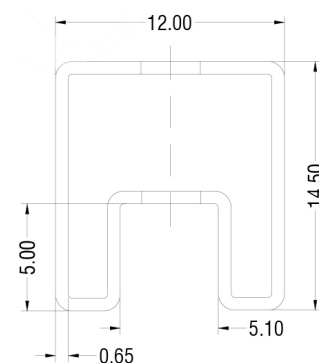
Recommended footprints

14Pin DIP Package



Tube outline

14Pin DIP Tube



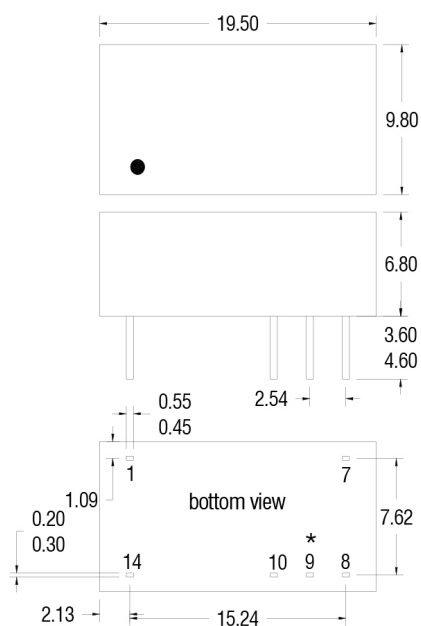
Unless otherwise stated all dimensions in mm ± 0.5 mm.
 Tube length: 520mm ± 2 mm.
 Tube Quantity: 25PCS

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Mechanical dimensions

DIP Package



Single output variants	
14 PIN DIP	
Pin	Function
1	-Vin
7	NC
8	+Vout
10	-Vout
14	+Vin

Dual output variants	
14 PIN DIP	
Pin	Function
1	-Vin
7	NC
8	+Vout
9	0V
10	-Vout
14	+Vin

Pin not fitted on single output variants. All dimensions in mm ± 0.25 mm.

*7.70 for 48V variants

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

Weight: 2.11 g