

0.1D8A_1.5U Series

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

DC-DC Converter

0.1 Watt

- ⊕ Efficiency up to 86%
- ⊕ Small footprint from 0.69cm²
- ⊕ SIP package
- ⊕ Single output voltage
- ⊕ 1.5KVDC isolation
- ⊕ Temperature range: -40°C~+85°C
- ⊕ Industry standard pinout
- ⊕ UL94-V0 package
- ⊕ No heat sink required
- ⊕ Power density 0.36W/cm³
- ⊕ RoHS compliance

The 0.1D8A_1.5U 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 =1000VDC)
- 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:	Short term, 1 sec.
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:	1.3g

Output specifications						
Item	Test condition	Min	Typ	Max	Units	
Rated power				0.1	W	
Line regulation	For Vin change of 1%		1	1.2	%	
Load regulation	10% to 100% full load • 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		80	KHz		

Input specifications						
Item	Test condition	Min	Typ	Max	Units	
Voltage range	• 3.3V input types • 5V input types • 12V input types	2.9 4.5 11	3.3 5 12	3.6 5.5 13.3	V	

Example:
0.1D8A_2405S1.5U
0.1= 0.1Watt; S4= SIP4; A= Pinning; 24Vin; 5Vout; S= Single Output;
1.5=1.5kVDC; U= Unregulated Output

Isolation specifications						
Item	Test condition	Min	Typ	Max	Units	
Isolation voltage	Input to Output (1sec)	1000			VDC	
Isolation resistance	Test at 500VDC	1			GΩ	

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.

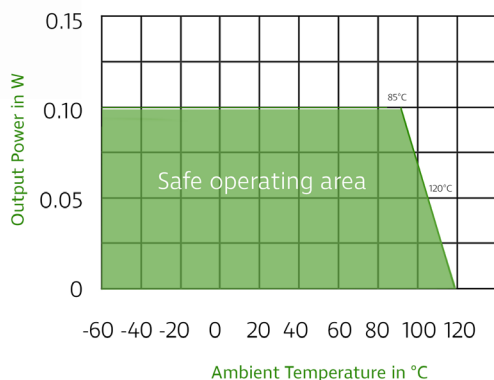
Part Number	Input Voltage [V]	Output Voltage [VDC]	Output current [mA; max]	Efficiency [%; typ]
0.1D8A_0303S1.5U	3.3	3.3	30.3	70
0.1D8A_0305S1.5U	3.3	5	20	80
0.1D8A_0503S1.5U	5	3.3	30.3	70
0.1D8A_0505S1.5U	5	5	20	80
0.1D8A_0509S1.5U	5	9	11	82
0.1D8A_0512S1.5U	5	12	8.3	86
0.1D8A_0515S1.5U	5	15	6.7	86
0.1D8A_1205S1.5U	12	5	20	80
0.1D8A_1209S1.5U	12	9	11	82
0.1D8A_1212S1.5U	12	12	8.3	86
0.1D8A_1215S1.5U	12	15	6.7	86

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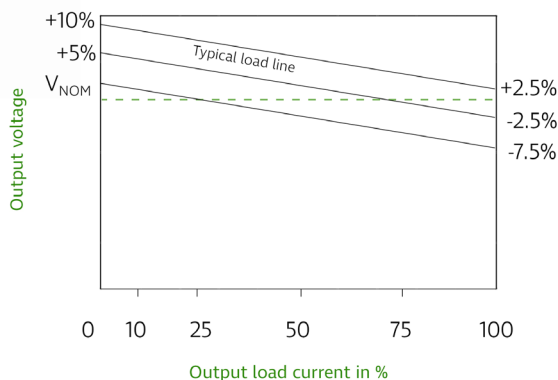
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Typical characteristics

Temperature Derating Curve

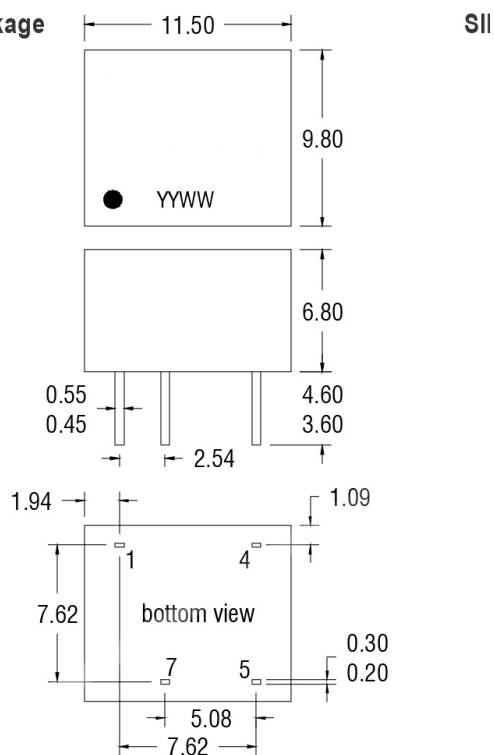


Tolerance envelope graph



Mechanical dimensions

DIP Package

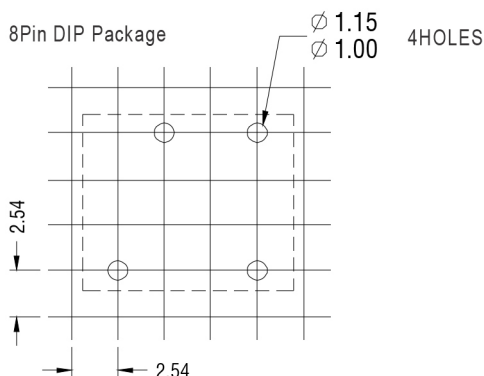


Pin assignment				
PIN	1	4	5	7
Single	-Vin	+Vin	+Vout	-Vout

Note:
Unit: mm[inch]
General tolerances: ± 0.25 mm

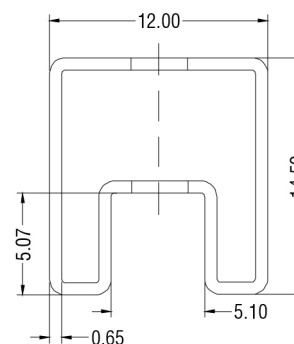
All pins on a 0.54 mm pitch and within ± 0.25 mm of true position.

Recommended footprint



Tube outline dimensions

8Pin DIP Tube



Note:
Tube length: 520mm ± 2 mm.
Tube Quantity : 35