

157A_DS1U series

1W - Dual Separate Output - Fixed Input - Isolated & Unregulated
SIP PACKAGE

DC-DC Converter

1 Watt

- ⊕ 7PIN SIP package
- ⊕ High efficiency up to 85%
- ⊕ Temperature range: -40°C ~ +85°C
- ⊕ No external component Required
- ⊕ 1kVDC isolation
- ⊕ Internal SMD construction
- ⊕ Unregulated output types
- ⊕ Industry standard pinout
- ⊕ RoHS compliance
- ⊕ Dual separate isolated outputs

The 157A_DS1U series is specially designed for applications where a single power supply is highly 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 $\leq \pm 5\%$);
- 2) Where isolation is necessary between input and output (isolation voltage $\leq 1000\text{VDC}$);
- 3) Where isolation is necessary between separate output 1 and separate output 2 (isolation voltage $\leq 1000\text{VDC}$)



Common specifications

Short circuit protection:	1 second
Temperature rise at full load:	25°C MAX, 15°C TYP
Cooling:	Free air convection
Operation temperature range:	-40°C – +85°C
Storage temperature range:	-55°C – +125°C
Lead temperature	300°C (1.5mm from case for 10 sec.)
Storage humidity range:	< 95%
Case material:	Plastic [UL94-V0]
MTBF:	>3,500,000 hours
Weight:	2.1 or 2.7g

Input specifications

Item	Test condition	Min	Typ	Max	Units
Voltage tolerance	$V_o, I_o \text{ nom}$			± 5	%
Filter	Capacitor				

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute	1000			VDC
Isolation resistance	Test at 500VDC	1000			MΩ

Output specifications

Item	Test condition	Min	Typ	Max	Units
Voltage tolerance	100% full load			± 5	%
Line regulation	For V_{in} change of $\pm 1\%$		1.2		%
Load regulation	10% to 100% full load • 3.3V/5V • 9V/12V/15V			15 10	% %
Temperature drift	100% full load			± 0.03	%/°C
Ripple & Noise	20MHz Bandwidth			100	mVp-p
Switching frequency	Full load, nominal input		100		KHz

*Test ripple and noise by "parallel cable" method. See detailed operation instructions at Testing of Power Converter section, application notes.

Example:

157A_0505DS1U

1 = 1Watt; S7 = SIP7; A = Pinning; 05 = 5Vin; 05 = 5Vout;
DS = Dual Separate Output; 1 = 1kVDC isolation;
U = Unregulated Output

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 $T_a = 25^\circ\text{C}$, humidity <75%, nominal input voltage and rated output load unless otherwise specified.
3. In this datasheet, all the test methods of indications are based on corporate standards.
4. Only typical models listed, other models may be different, please contact our

1S7A_DS1U series

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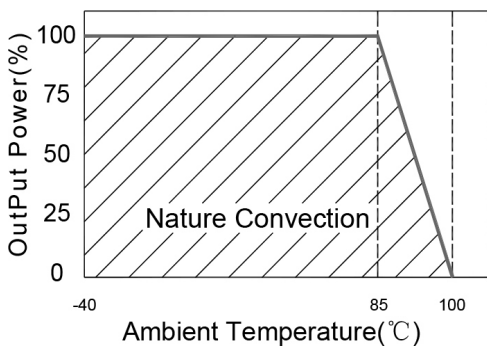
Product Selection Guide

Part Number	Input Voltage [VDC]	Output Voltage 1 [VDC]	Output Voltage 2 [VDC]	Output Current [mA]	Efficiency [% , max]
1S7A_05XXYYDS1U	5	XX	YY	150 @ 3.3Vout	70
1S7A_09XXYYDS1U	9	XX	YY	100 @ 5Vout	70
1S7A_12XXYYDS1U	12	XX	YY	56 @ 9Vout	70
1S7A_15XXYYDS1U	15	XX	YY	42 @ 12Vout	70
1S7A_24XXYYDS1U	24	XX	YY	34 @ 15Vout	70

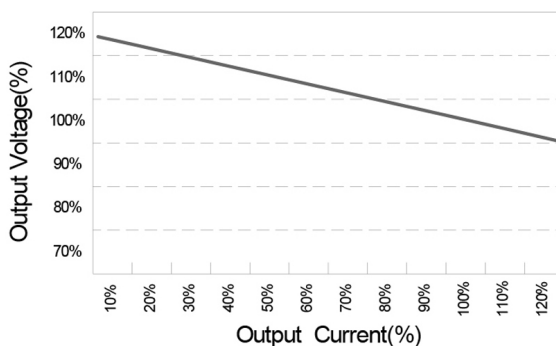
Please note: Please select for the dual separate output voltages (XXYY) between 3.3, 5, 9, 12, 15 and 24Vout: i.e. 1S7A_051224DS1U or for example: 1S7A_240509DS1U.

Typical characteristics

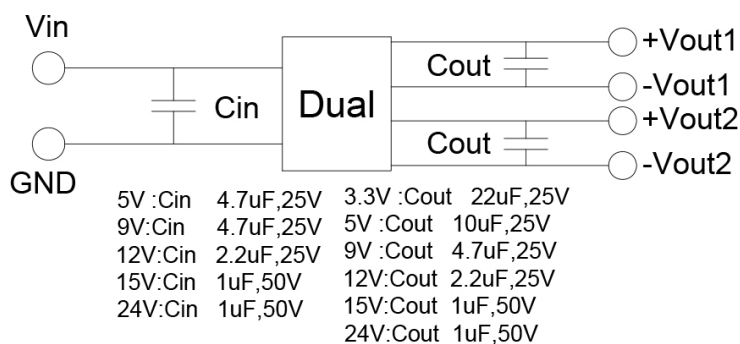
Temperature derating graph



Tolerance envelope graph



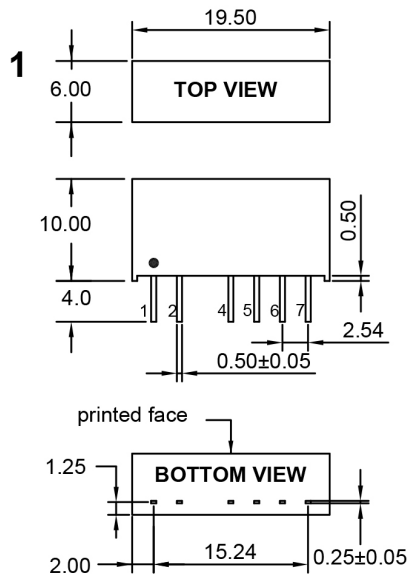
Recommended test circuit



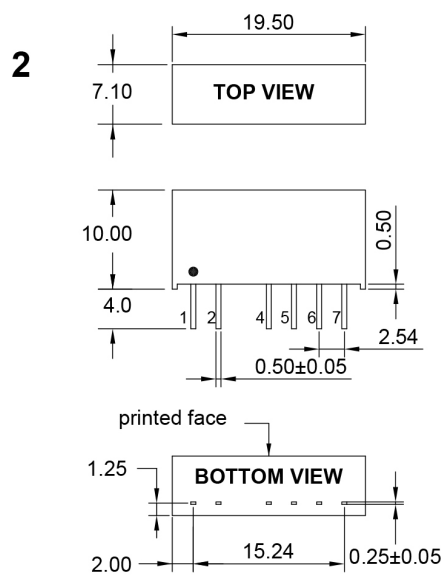
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Mechanical Dimensions



Package style 1 for input voltage 5V_{in} variations
i.e = 1S7A_051224DS1U



Package style 2 for input voltages 9, 12, 15, and 24V_{in} variations
i.e = 1S7A_240503DS1U

Note:
Unit: mm
General tolerances: ±0.25mm

PIN connection						
PIN	1	2	4	5	6	7
Dual	+V _{in}	-V _{in}	+V _{out1}	-V _{out1}	+V _{out2}	-V _{out2}