



1S4E_1.5U Series

1W - Single Output - Fixed Input - Isolated & Unregulated
 MINIATURE SIP PACKAGE

DC-DC Converter

1 Watt

- ⊕ Efficiency up to 81%
- ⊕ Small Footprint
- ⊕ Miniature SIP Package
- ⊕ Single Output Voltage
- ⊕ 1.5KVDC Isolation
- ⊕ Temperature Range: -40°C~+85°C
- ⊕ Industry Standard Pinout
- ⊕ UL94-V0 Package
- ⊕ No Heat sink Required
- ⊕ No External Component Required
- ⊕ PCB Mounting
- ⊕ RoHS Compliance



The 1S4E 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 = 1500VDC)
- 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.

These products don't apply to:

- 1) Where the input supply voltage is varied (variation $\geq \pm 10\%$), otherwise our company's wide range series is recommended
- 2) Where the isolation voltage between input and output is required to be >1500VDC, otherwise our company's high isolation series of products are recommended

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
Storage humidity range:	< 95%
Case material:	Plastic [UL94-V0]
MTBF:	>3,500,000 hours

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute	1500			VDC
Isolation resistance	Test at 500VDC	1000			MΩ

Example:

1S4E_0505S1.5U
 1 = 1Watt; S4 = SIP4; E = Pinning; 5Vin; 5Vout; S = Single Output;
 1.5 = 1.5kVDC; U = Unregulated Output

Output specifications

Item	Test condition	Min	Typ	Max	Units
Output power		0.1		1	W
Line regulation	For Vin change of 1%			1.2	%
Load regulation	10% to 100% full load			15	%
Output voltage accuracy	See tolerance envelope graph				
Temperature drift	100% full load			0.03	%/°C
Output ripple	20MHz Bandwidth		50	75	mVp-p
Output noise	20MHz Bandwidth		50	100	mVp-p

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.

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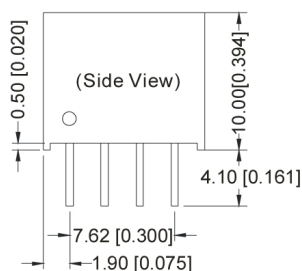
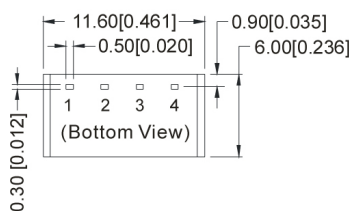
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Part Number	Input Voltage [V]	Output Voltage [VDC]	Current [mA]	Package
1S4E_0303S1.5U	3.3	3.3	300	SIP4
1S4E_0305S1.5U	3.3	5	200	SIP4
1S4E_0505S1.5U	5	5	200	SIP4
1S4E_0512S1.5U	5	12	83	SIP4
1S4E_0515S1.5U	5	15	67	SIP4
1S4E_1205S1.5U	12	5	200	SIP4
1S4E_1212S1.5U	12	12	83	SIP4
1S4E_1215S1.5U	12	15	67	SIP4
1S4E_1505S1.5U	15	5	200	SIP4
1S4E_1515S1.5U	15	15	68	SIP4
1S4E_2403S1.5U	24	3	303	SIP4
1S4E_2405S1.5U	24	5	200	SIP4
1S4E_2409S1.5U	24	9	110	SIP4
1S4E_2412S1.5U	24	12	83	SIP4
1S4E_2415S1.5U	24	15	68	SIP4
1S4E_2424S1.5U	24	24	42	SIP4
1S4E_4805S1.5U	48	5	200	SIP4
1S4E_4809S1.5U	48	9	110	SIP4
1S4E_4812S1.5U	48	12	83	SIP4
1S4E_4815S1.5U	48	15	68	SIP4
1S4E_4824S1.5U	48	24	42	SIP4

Mechanical dimensions

Typical characteristics

1S4E Series



FOOTPRINT DETAILS

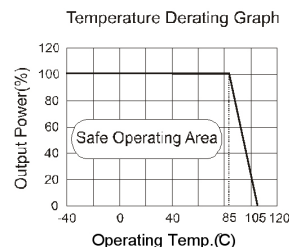
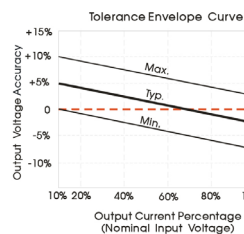
Pin	1S4E
1	GND
2	Vin
3	0V
4	+Vo

Note:

Unit: mm[inch]

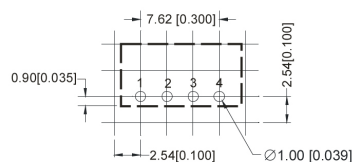
Pin section tolerances: $\pm 0.10\text{mm}[\pm 0.004\text{inch}]$

General tolerances: $\pm 0.25\text{mm}[\pm 0.010\text{inch}]$



Recommended footprint

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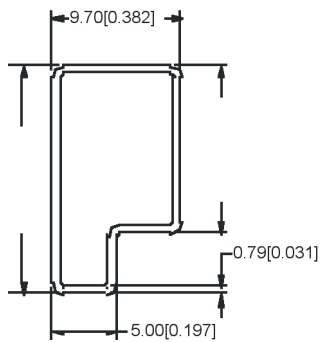


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Tube outline

1S4E Series



Note:

Unit: mm[inch]

General tolerances: 0.5mm [0.020inch]

L=530mm [20.866inch]

Devices per tube quantity: 43pcs

L=220mm [8.661inch]

Devices per tube quantity: 17pcs