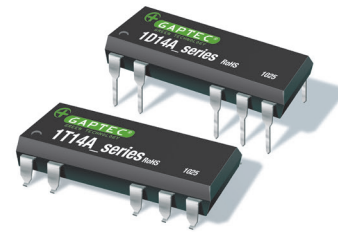


1D14A_3RP & 1T14A_3RP Series

1W - Single Output DC-DC Converter - Fixed Input - Isolated - Regulated



DC-DC Converter

1 Watt

- ⊕ Small footprint, ultra compact package
- ⊕ 3KVDC Isolation
- ⊕ Temperature range: -40°C to +85°C
- ⊕ No External component Required

- ⊕ Industry standard pinout
- ⊕ Compatible with DCP01 series
- ⊕ Short circuit protection (SCP)
- ⊕ RoHS compliance
- ⊕ Regulated output with short circuit protection

The 1D14A_3RP & 1T14A_3RP Series are specially designed for applications where a group of polar power supplies are 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 $\leq 3000\text{VDC}$)
- 3) Where the regulation of the output voltage and the output ripple noise are not demanding

Such as: purely digital circuits, ordinary low frequency analog circuits, and IGBT power device driving circuits.



Common specifications

Short circuit protection:	Continuous, self-recovery
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
Pin welding resistance temperature:	250°C MAX, 1.5mm from case for 10 sec
Reflow soldering temperature:	Peak temp. $\leq 245^\circ\text{C}$, maximum duration time $\leq 60\text{s}$ at 217°C . For actual application, please refer to IPC/JEDEC J-STD-020D.1.
Storage humidity range:	< 95%
Casing material:	Epoxy Resin [UL94-V0]
MTBF:	>3,500,000 hours
Weight:	1.4g

Input specifications

Item	Test condition	Min	Typ	Max	Units
Input current (full load / no load)	• 5V input		285/25		mA
	• 12V input		115/20		
Surge voltage	• 5V input	-0.7		9	VDC
	• 12V input	-0.7		18	
Input filter	Capacitor filter				

Model selection:

WCTP_xyyN#O**

W=Watt; **C**= Case; **T**=Type; **P**=Pinning; ******= Voltage Variation (omitted $\pm 10\%$); **xx**= Vin; **yy**= Vout; **N**= Numbers of Output; **##**= Isolation (kVDC); **O**= output regulation

Example:

1D14A_0505S3RP

1=1Watt; **D14**=DIP14; **A**=Pinning; **5Vin**; **5Vout**; **S**=Single Output
3=3KVDC; **R**=Regulated Output; **P**=Short Circuit Protection

Output specifications

Item	Test condition	Min	Typ	Max	Units
Output voltage accuracy				± 3	%
Line regulation	For Vin change of 5%			± 0.25	%
Load regulation	10% to 100% load			± 1	%
Temperature drift	100% full load			± 0.03	%/°C
Ripple & Noise*	20MHz Bandwidth				
	• Ripple		10	20	mVp-p
• Noise		50	75	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.

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute and 1mA max	3000			VDC
Isolation resistance	Test at 500VDC	1000			MΩ
Isolation Capacitance			25		pF

Note:

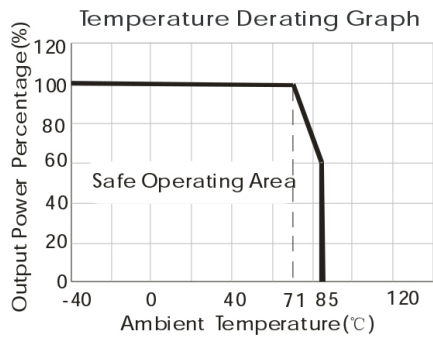
1. If the product is operated under the min. required load, the product performance cannot be guaranteed to comply with all performance indexes in this datasheet;
2. The max. capacitive load should be tested within the input voltage range and under full load conditions;
3. Unless otherwise specified, data in this data sheet should be tested under the conditions of $T_a=25^\circ\text{C}$, humidity<75% when inputting nominal voltage and outputting rated load;
4. All index testing methods in this datasheet are based on our Company's corporate standards;
5. The performance indexes of the product models listed in this manual are as above, but some indexes of non-standard model products will exceed the above-mentioned requirements, and please directly contact our technicians for specific information;
6. We can provide product customization service;
7. Specifications of this product are subject to changes without prior notice.

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Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max]	Efficiency [%, max]	Max. Capacitive load [μ F]	Package Style
1D14A_0505S3RP	5	5	200	70	220	DIP14
1T14A_0505S3RP	5	5	200	70	220	SMT14
1D14A_1205S3RP	12	5	200	72	220	DIP14
1T14A_1205S3RP	12	5	200	72	220	SMT14

Typical characteristics



Typical application

If it is required to further reduce input and output ripple, a filter capacitor can be connected to the input and output terminals, see Fig.1. Moreover, choosing suitable filter capacitor is very important, start-up problems may be caused by too large capacitance. To ensure the modules running well, the recommended capacitive load values as shown in Table 1.

The simplest device for output voltage regulation, over-voltage and over-current protection is a linear voltage regulator with overheat protection that is connected to the input or output end in series (Fig.2).

Recommended capacitive load value table (table 1):

Vin (VDC)	Cin (μ F)	Vout (VDC)	Cout (μ F)
5	4.7	5	4.7
12	2.2	--	--

It is not recommended to connect any external capacitor when output power is less than 0.5W.

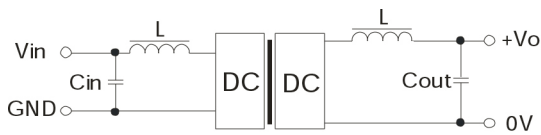


Figure 1



Figure 2

Output load requirements

To ensure the module work efficiently and reliably, during the operation, the min. output load should be no less than 10% of the full load. If the actual output power is low, please connect a resistor to the output terminal in parallel, with a recommended resistance which is 10% of the rated power, and derating is required during operation.

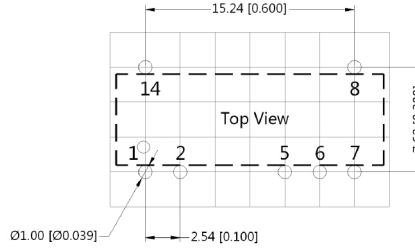
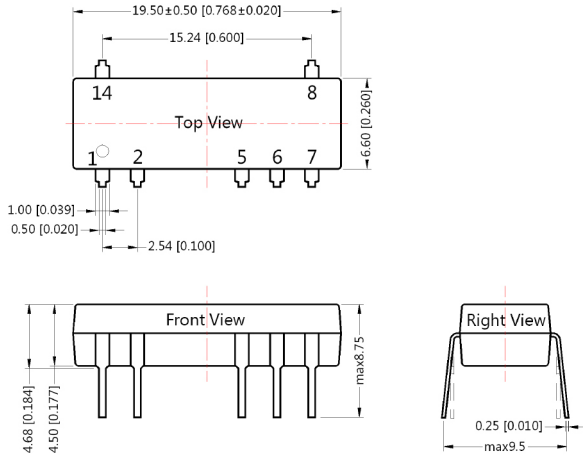
1D14A_3RP & 1T14A_3RP Series

1W - Single Output DC-DC Converter - Fixed Input - Isolated & Regulated

Mechanical dimensions

1D14A Series

THIRD ANGLE PROJECTION



Note: Grid 2.54*2.54mm

Pin-Out	
Pin	Function
1	Vin
2	GND
5	0V
6	+Vo
Others	NC

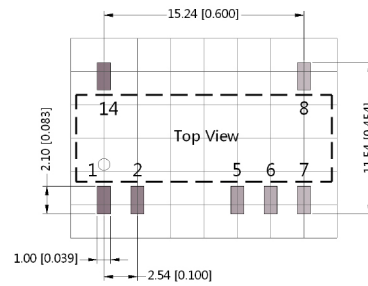
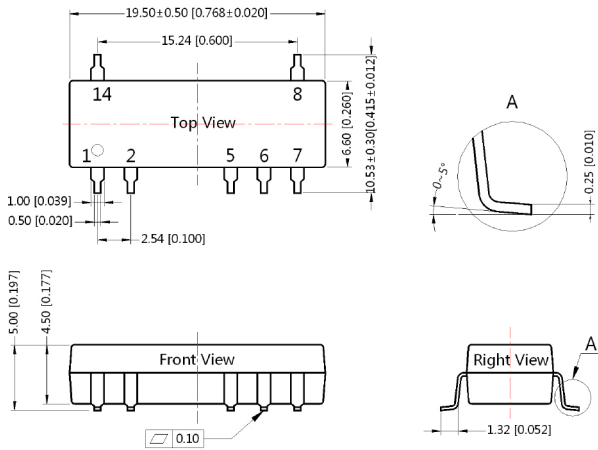
NC: No Connection

Note:

Unit: mm[inch]
Pin section tolerances: $\pm 0.10\text{mm}[\pm 0.004\text{inch}]$
General tolerances: $\pm 0.25\text{mm}[\pm 0.010\text{inch}]$

1T14A Series

THIRD ANGLE PROJECTION



Note: Grid 2.54*2.54mm

Pin-Out	
Pin	Function
1	Vin
2	GND
5	0V
6	+Vo
Others	NC

NC: No Connection

Note:

Unit: mm[inch]
Pin section tolerances: $\pm 0.10\text{mm}[\pm 0.004\text{inch}]$
General tolerances: $\pm 0.25\text{mm}[\pm 0.010\text{inch}]$