GAPTEC®
GREEN TECHNOLOGY

1D14C_S3U & 1D14C_D3U Series

1W - Single/Dual Output DC-DC Converter - Fixed Input - Isolated & Unregulated

DC-DC Converter	1 Watt

- ✚ High efficiency up to 85%
- ✚ High density, high stability
- ✚ 3000VDC Isolation
- ✚ DIP package
- ✚ Design meet UL 60950-1
- ✚ Temperature range: -40°C ~ +85°C
- ✚ No external component required
- ✚ Industry standard pinout
- ✚ RoHS compliance

The 1D14C_S3U & 1D14C_D3U 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 ≤ ±10%)
2) Where isolation is necessary between input and output (isolation voltage ≤3000VDC)
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*:	1 second
Temperature rise at full load:	25°C TYP
Cooling:	Free air convection
Operation temperature range:	-40°C – +85°C
Storage temperature range:	-55°C – +125°C
Lead temperature	300°C MAX, 1.5mm from case for 10 sec
Storage humidity range:	< 95%
Case material:	Plastic [U94-VO]
MTBF (MIL-HDBK-217F@25°C):	>3,500,000 hours
Weight:	2.3g

Input specifications

Item	Test condition	Min	Typ	Max	Units
Input filter	Filter capacitor				
Voltage tolerance	Vo,Io Nom			±10	%

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

Output specifications

Item	Test condition	Min	Typ	Max	Units
Output voltage accuracy	100% full load			±5	%
Line regulation	For Vin change of 1%		1.2		%
Load regulation	10% to 100% load				
	• 3.3V output		15		%
	• 5V output		15		%
	• 9V ouput		10		%
	• 12V output		10		%
	• 15V output		10		%
	• 24V output		10		%
Temperature drift	100% full load			±0.03	%/°C
Ripple & Noise*	20MHz Bandwidth			100	mVp-p
Switching frequency	Full load, nominal input		100		KHz
Transient response setting time	50% load step change		350		µs

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

Example:
1D14C_0505D3U
1= 1Watt; D14= DIP14; C= Pinning; 5Vin; 5Vout; D=Dual Output; 3= 3kVDC; 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 Ta=25°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 technical person for more details.
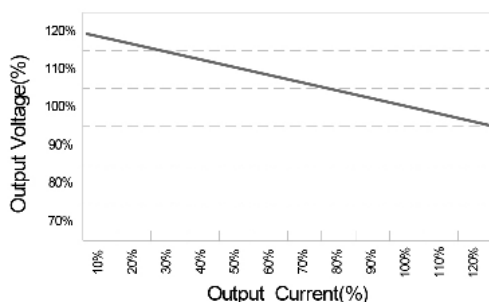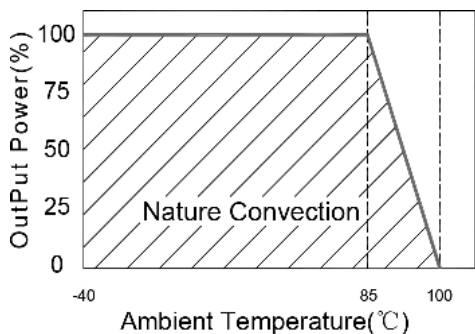
1D14C_S3U & 1D14C_D3U Series

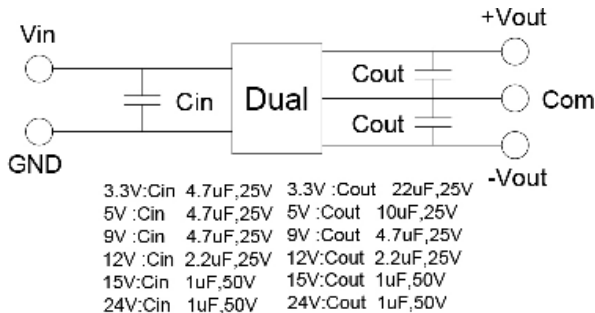1W - Single/Dual Output DC-DC Converter - Fixed Input - Isolated & Unregulated

Part Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency [%, typ]	Package style
1D14C_xx03S3U	3.3, 5, 9, 12, 15, 24	3.3	303	70	1
1D14C_xx05S3U	3.3, 5, 9, 12, 15, 24	5	200	70	1
1D14C_xx09S3U	3.3, 5, 9, 12, 15, 24	9	112	75	1
1D14C_xx12S3U	3.3, 5, 9, 12, 15, 24	12	84	78	1
1D14C_xx15S3U	3.3, 5, 9, 12, 15, 24	15	67	80	1
1D14C_xx24S3U	3.3, 5, 9, 12, 15, 24	24	42	82	1
1D14C_xx03D3U	3.3, 5, 9, 12, 15, 24	±3.3	±150	70	1
1D14C_xx05D3U	3.3, 5, 9, 12, 15, 24	±5	±100	70	1
1D14C_xx09D3U	3.3, 5, 9, 12, 15, 24	±9	±56	75	1
1D14C_xx12D3U	3.3, 5, 9, 12, 15, 24	±12	±42	78	1
1D14C_xx15D3U	3.3, 5, 9, 12, 15, 24	±15	±34	80	1
1D14C_xx24D3U	3.3, 5, 9, 12, 15, 24	±24	±21	82	1

• xx=Input Voltage (possible for other input and output voltage combinations on request)
Vin=3.3V, xx=03
Vin=5V, xx=05
Vin=9V, xx=9
Vin=12V, xx=12
Vin=15V, xx=15
Vin=24V, xx=24

# Typical characteristics

Recommended test circuit

3.3V:Cin 4.7uF,25V   3.3V :Cout 22uF,25V
5V :Cin   4.7uF,25V   5V :Cout   10uF,25V
9V :Cin   4.7uF,25V   9V :Cout   4.7uF,25V
12V :Cin 2.2uF,25V   12V:Cout   2.2uF,25V
15V:Cin   1uF,50V   15V:Cout   1uF,50V
24V:Cin   1uF,50V   24V:Cout   1uF,50V

3.3V:Cin 4.7uF,25V   3.3V :Cout 22uF,25V
5V :Cin   4.7uF,25V   5V :Cout   10uF,25V
9V :Cin   4.7uF,25V   9V :Cout   4.7uF,25V
12V :Cin 2.2uF,25V   12V:Cout   2.2uF,25V
15V:Cin   1uF,50V   15V:Cout   1uF,50V
24V:Cin   1uF,50V   24V:Cout   1uF,50V

1D14C_S3U & 1D14C_D3U – Rev. 2016-1.0
Specifications subject to change without notice.

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Mechanical dimensions

Package style 1
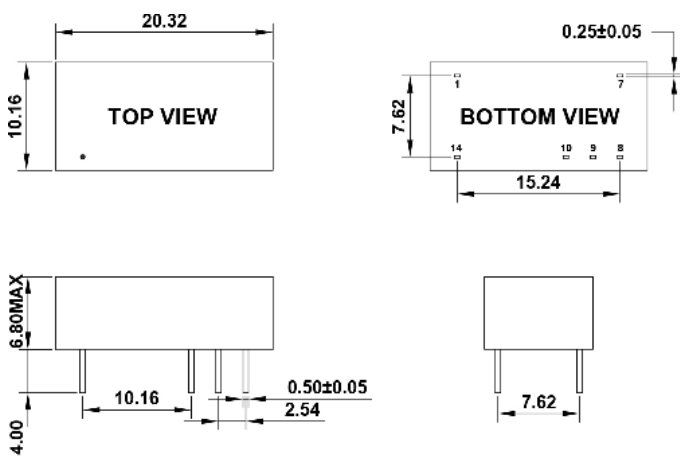
Note:
Unit: mm[inch]
Pin section tolerances: ± 0.10mm[± 0.004inch]
General tolerances: ± 0.25mm[± 0.010inch]

PIN connection	1	7	8	9	10	14
Single	-Vin	NC	+Vout	NO PIN	-Vout	+Vin
Dual	-Vin	NC	+Vout	Com	-Vout	+Vin

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