

# 1224V to 5V DC Step-Down Converter Specification

## Revision Record

Version	Description	Effective Date	Edited by
00	First release	20150810	Frank
01	Remove iron shell series products	20170411	Frank

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## 1. Product Overview

### 1.1 Description

Model No.	Description	Interface material	Remark
ADS12T5-02PC	12V to 5V 2A	Small plastic case	46*27*14
ADS12T5-03PC	12V to 5V 3A	Small plastic case	46*27*14
ADS1224T5-02AL	1224V to 5V 2A	Small Aluminum alloy shell	43*25*22
ADS1224T5-03AL	1224V to 5V 3A	Small Aluminum alloy shell	43*25*22
ADS1224T5-05AL	1224V to 5V 5A	Small Aluminum alloy shell	43*25*22
ADS12T5-05AL	12V to 5V 5A	Small Aluminum alloy shell	43*25*22
ADS12T5-06AL	12V to 5V 6A	Small Aluminum alloy shell	43*25*22
ADS12T5-08PC	12V to 5V 8A	Middle plastic case	46*32*18
ADS12T5-10PC	12V to 5V 10A	Middle plastic case	46*32*18
ADS1224T5-10AL	1224V to 5V 10A	Aluminum alloy shell	74*74*32
ADS1224T5-15AL	1224V to 5V 15A	Aluminum alloy shell	74*74*32
ADS1224T5-20AL	1224V to 5V 20A	Aluminum alloy shell	74*74*32
ADS1224T5-25AL	1224V to 5V 25A	Aluminum alloy shell	74*74*32
ADS1224T5-30AL	1224V to 5V 30A	Aluminum alloy shell	74*74*32

The ADS series dc converter (dc power supply) is consist of Bridge drive switch, PWM pulse circuit, power transformer and rectifier filter circuit, topological structure design guarantee a safety application and high transfer efficiency.

The DC converters are widely used in Military, Avionics, Boat, Yacht, Bus, Vehicles, Golf Cart , Forklift, e-sweeper, all kind of automotive, posts and telecommunications, communications, electricity, solar system, coal, aerospace, defense, surveillance systems, railway signals, medical equipment, instruments and meters, LED displays, cable TV ,AGV, Robot, IoT and other fields. If you can not find a suitable model, we can customize it for you

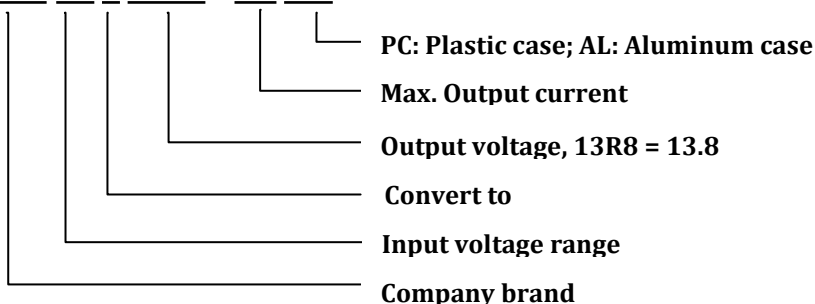
## 1.2 Features

1. Conversion efficiency > 93%
2. Pouring Sealed inside, Die-cast aluminum shell
3. Non-isolated between input and output
4. Anti-Quake and dust
5. Protection level: IP67
6. Famous key components brand
7. PWM technology and IRF high power transistor
8. Sufficient power with synchronous rectification technology.
9. Over-voltage, over current, short-circuits, over-temperature protection and auto recovery function.
10. Easy installation, Convenient for using and transportation
11. Warranty: 2 Year



## 1.3 Product Name Definition

### ADS12T13R8 -20 PC



## 2. Technical Specifications

Model	ADS12T5-02PC		
Input	Rated voltage	V	12
	Voltage range	V	8-23
	Conversion efficiency	%	95
	Positive cable	cm	Red @ 22 or DC connector
	Negative cable	cm	Black @22 or DC connector
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	2
	Peak current	A	6
	Rated power	W	10
	Power consumption	mA	5
	Ripple & noise	mV	20
	Positive cable	cm	Yellow @ 22 or DC connector
	Negative cable	cm	Black @ 22 or DC connector
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°c	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°c	-50~+ 90
General	Shell material		Flame Retardant Plastic case
	Sealed material		Epoxy filled and sealed
	Dimension	mm	46*27*14
	Weight	g	28

Model	ADS12T5-03PC		
Input	Rated voltage	V	12
	Voltage range	V	8-23
	Conversion efficiency	%	95
	Positive cable	cm	Red @ 22 or DC connector
	Negative cable	cm	Black @ 22 or DC connector
Output	Voltage	V	5
	Voltage range	V	3.25~51
	Working current	A	3
	Peak current	A	6
	Rated power	W	15
	Power consumption	mA	5.0
	Ripple & noise	mV	20
	Positive cable	cm	Yellow @ 22 or DC connector
	Negative cable	cm	Black @ 22 or DC connector
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°C	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°C	-50~+ 90
General	Shell material		Flame Retardant Plastic case
	Sealed material		Epoxy filled and sealed
	Dimension	mm	46*27*14
	Weight	g	28

Model	ADS1224T5-02AL		
Input	Rated voltage	V	12/24
	Voltage range	V	7-40
	Conversion efficiency	%	95
	Positive cable	cm	Red @ 22 or DC connector
	Negative cable	cm	Black @22 or DC connector
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	2
	Peak current	A	6
	Rated power	W	10
	Power consumption	mA	5.0
	Ripple & noise	mV	20
	Positive cable	cm	Yellow @ 22 or DC connector
	Negative cable	cm	Black @ 22 or DC connector
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°c	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°c	-50~+ 90
General	Shell material		Aluminum alloy case
	Sealed material		Heat organic silicone filled and sealed
	Dimension	mm	43*25*22
	Weight	g	45

Model	ADS1224T5-03AL		
Input	Rated voltage	V	12/24
	Voltage range	V	7-40
	Conversion efficiency	%	95
	Positive cable	cm	Red @ 22 or DC connector
	Negative cable	cm	Black @22 or DC connector
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	3
	Peak current	A	6
	Rated power	W	15
	Power consumption	mA	5.0
	Ripple & noise	mV	20
	Positive cable	cm	Yellow @ 22 or DC connector
	Negative cable	cm	Black @ 22 or DC connector
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°c	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°c	-50~+ 90
General	Shell material		Aluminum alloy case
	Sealed material		Heat organic silicone filled and sealed
	Dimension	mm	43*25*22
	Weight	g	45

Model	ADS1224T5-05AL		
Input	Rated voltage	V	12/24
	Voltage range	V	7-40
	Conversion efficiency	%	95
	Positive polarity		Red @ 22 or DC connector
	Negative polarity		Black @ 22 or DC connector
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	5
	Peak current	A	8
	Rated power	W	25
	Power consumption	mA	5.0
	Ripple & noise	mV	20
	Positive polarity		Yellow @ 22 or DC connector
	Negative polarity		Black @ 22 or DC connector
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°C	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°C	-50~+ 90
General	Shell material		Aluminum alloy case
	Sealed material		Heat organic silicone filled and sealed
	Dimension	mm	43*25*22
	Weight	g	45



Model	ADS12T5-05AL		
Input	Rated voltage	V	12
	Voltage range	V	8-28
	Conversion efficiency	%	95
	Positive polarity		Red @ 22 or DC connector
	Negative polarity		Black @22 or DC connector
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	5
	Peak current	A	8
	Rated power	W	25
	Power consumption	mA	5.0
	Ripple & noise	mV	20
	Positive polarity		Yellow @ 22 or DC connector
	Negative polarity		Black @ 22 or DC connector
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°c	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°c	-50~+ 90
General	Shell material		Aluminum alloy case
	Sealed material		Heat organic silicone filled and sealed
	Dimension	mm	43*25*22
	Weight	g	45

Model	ADS12T5-06AL		
Input	Rated voltage	V	12
	Voltage range	V	8-28
	Conversion efficiency	%	95
	Positive polarity		Red @ 22 or DC connector
	Negative polarity		Black @22 or DC connector
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	6
	Peak current	A	8
	Rated power	W	30
	Power consumption	mA	5.0
	Ripple & noise	mV	20
	Positive polarity		Yellow @ 22 or DC connector
	Negative polarity		Black @ 22 or DC connector
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°c	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°c	-50~+ 90
General	Shell material		Aluminum alloy case
	Sealed material		Heat organic silicone filled and sealed
	Dimension	mm	43*25*22
	Weight	g	45

Model	ADS12T5-08PC		
Input	Rated voltage	V	12
	Voltage range	V	8-28
	Conversion efficiency	%	95
	Positive polarity		Red @ 22 or DC connector
	Negative polarity		Black @22 or DC connector
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	8
	Peak current	A	12
	Rated power	W	40
	Power consumption	mA	5.0
	Ripple & noise	mV	20
	Positive polarity		Yellow @ 22 or DC connector
	Negative polarity		Black @ 22 or DC connector
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°c	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°c	-50~+ 90
General	Shell material		Flame Retardant Plastic case
	Sealed material		Epoxy filled and sealed
	Dimension	mm	46*32*18
	Weight	g	53

Model	ADS12T5-10PC		
Input	Rated voltage	V	12
	Voltage range	V	8-28
	Conversion efficiency	%	95
	Positive polarity		Red @ 22 or DC connector
	Negative polarity		Black @22 or DC connector
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	10
	Peak current	A	12
	Rated power	W	50
	Power consumption	mA	5.0
	Ripple & noise	mV	20
	Positive polarity		Yellow @ 22 or DC connector
	Negative polarity		Black @ 22 or DC connector
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°c	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°c	-50~+ 90
General	Shell material		Flame Retardant Plastic case
	Sealed material		Epoxy filled and sealed
	Dimension	mm	46*32*18
	Weight	g	53

Model	ADS1224T5-10AL		
Input	Rated voltage	V	12/24
	Voltage range	V	8-40
	Conversion efficiency	%	93
	Positive polarity		Red @ 18
	Negative polarity		Black @18
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	10
	Peak current	A	20
	Rated power	W	50
	Power consumption	mA	25
	Ripple & noise	mV	40
	Positive polarity		Yellow @ 18
	Negative polarity		Black @18
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°c	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°c	-50~+ 90
General	Shell material		Aluminum alloy case
	Sealed material		Heat organic silicone filled and sealed
	Dimension	mm	74*74*32
	Weight	g	300

Model	ADS1224T5-15AL		
Input	Rated voltage	V	12/24
	Voltage range	V	8-40
	Conversion efficiency	%	93
	Positive polarity		Red @ 18
	Negative polarity		Black @18
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	15
	Peak current	A	20
	Rated power	W	75
	Power consumption	mA	25
	Ripple & noise	mV	40
	Positive polarity		Yellow @ 18
	Negative polarity		Black @18
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°c	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°c	-50~+ 90
General	Shell material		Aluminum alloy case
	Sealed material		Heat organic silicone filled and sealed
	Dimension	mm	74*74*32
	Weight	g	300

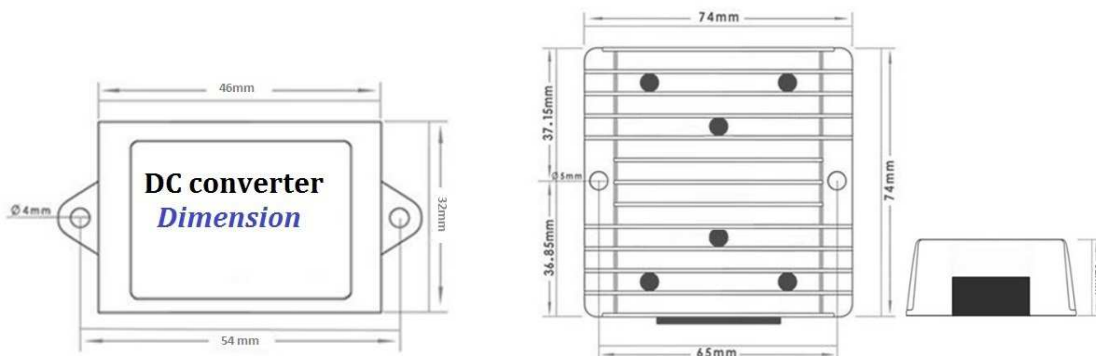
Model	ADS1224T5-20AL		
Input	Rated voltage	V	12/24
	Voltage range	V	8-40
	Conversion efficiency	%	93
	Positive polarity		Red @ 18
	Negative polarity		Black @18
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	20
	Peak current	A	25
	Rated power	W	100
	Power consumption	mA	25
	Ripple & noise	mV	40
	Positive polarity		Yellow @ 18
	Negative polarity		Black @18
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°c	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°c	-50~+ 90
General	Shell material		Aluminum alloy case
	Sealed material		Heat organic silicone filled and sealed
	Dimension	mm	74*74*32
	Weight	g	300

Model	ADS1224T5-25AL		
Input	Rated voltage	V	12/24
	Voltage range	V	8-40
	Conversion efficiency	%	93
	Positive polarity		Red @ 18
	Negative polarity		Black @18
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	25
	Peak current	A	30
	Rated power	W	125
	Power consumption	mA	25
	Ripple & noise	mV	40
	Positive polarity		Yellow @ 18
	Negative polarity		Black @18
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°c	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°c	-50~+ 90
General	Shell material		Aluminum alloy case
	Sealed material		Heat organic silicone filled and sealed
	Dimension	mm	74*74*32
	Weight	g	300



Model	ADS1224T5-30AL		
Input	Rated voltage	V	12/24
	Voltage range	V	8-40
	Conversion efficiency	%	93
	Positive polarity		Red @ 18
	Negative polarity		Black @18
Output	Voltage	V	5
	Voltage range	V	4.95~5.05
	Working current	A	30
	Peak current	A	40
	Rated power	W	150
	Power consumption	mA	25
	Ripple & noise	mV	40
	Positive polarity		Yellow @ 18
	Negative polarity		Black @18
Protection function	Input instant over voltage		Yes
	Output over current		Yes
	Output short-circuit		Yes
	Chip over temperature		Yes
	Input reverse connect		No, can customize
	Output reverse connect		No, can customize
	Automatic recovery		Yes
	Water-proof		Yes
	Quake-proof		Yes
	Dust-proof		Yes
	Protection level		IP67
Environment	Working Temperature	°c	-40 ~+85
	Working humidity	RH	< 90
	Storage temperature	°c	-50~+ 90
General	Shell material		Aluminum alloy case
	Sealed material		Heat organic silicone filled and sealed
	Dimension	mm	74*74*32
	Weight	g	300

### 3. Dimension



#### 4. Use Attention

1. In strict accordance with the polarity to connect, input positive is Red (+), negative is Black (-), reverse connect will damage the converter, output positive is Yellow (+), negative is Black (-), reverse connect will damage the using facility.
2. In order to ensure the converter can get high efficiency output voltage and power, please make sure the sufficient input current and voltage supply.
3. If the multi-output application, please balance each of the load, please don't tie the entire load together.
4. If the load long time work over 80% of rated power, need to lock the converter tightly with extend metal for heat dissipation, if the load power under or equal 80%, shall be more reliable and safe.
5. The converter is Non-isolated one, if you look for the converter input voltage higher than output 40V, please select the isolated converter.
6. The converter can't use to charge battery

#### 5. Customer services

Warranty is 2 year, free maintenance service will be offered when there is quality problem since the date of purchase.

If maintenance or adjustment is needed within guarantee period and in the scope of our warranty, please contact our service center

The expense will be absorbed by customer side if any of the following situations happens:

1. Fault was due to maintenance or adjustment without checking or permission of our factory.
2. Fault was caused by manmade, or disassemble by customer side or use of overload, or other natural disasters within the warranty period.
3. Converter was burnt because of incorrect usage of power supply or too high current.

All products have been checked and packaged with ESD bag in good condition before dispatch, in case the item was damaged, please feedback us within 30 days of receipt, we will provide the free replacement, no refunds are offered.

Please contact us through email : [services@charger-connector.com](mailto:services@charger-connector.com) , we will response you within 24-48 hours.

##### **OEM:**

1. LOGO and Label can be customized, please offer us the model number and logo original file.
2. Parameters and functions can be customized, please offer the details
4. Package can be customized, please provide us the original file.

##### **Payment Terms :**

T/T in advance, PayPal, Alipay

##### **Lead Time:**

1. Customized samples will be delivered from our factory within 20 working days.
2. General orders will be delivered from our factory within 3~7 working days.
3. Big orders(over 10Kpcs) will be delivered from our factory within 10~25 working days