

FXXXXXS-1WR3

Medical  
electric  
equipmentPower  
Factor  
Correction

World wide

Safety  
Approvals

EMI

Inrush  
current  
limiting

OCP

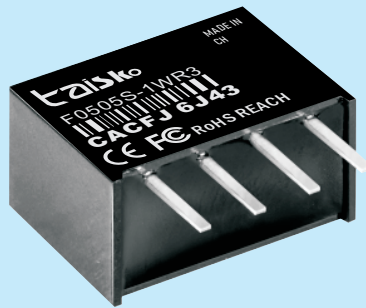


OVP

Remote  
ON/OFFParallel  
Operation

1U

# F-series



## Feature

DC-DC converters  
Ideal for semiconductor,  
analytical, medical,  
and detector applications  
Accuracy, reliability and stability  
are critical for high voltage DC-DC  
applications. manufacturers, with  
over 20 years of experience providing  
accurate and reliable compact solutions.  
applications – allowing us to maximize  
functionality in a compact environment

## Safety agency approval

ENI 55032:2015/A1:2020  
EN IEC 62368-1:2020+A11:2020  
IEC 62321-1:2013 IEC 62321-2:2021 IEC 62321-3-1:2013,

## Up to 5-year warranty (Refer to Instruction Manual)

## CE FCC marking

Low Voltage Directive  
RoHS Directive

## ROHS REACH marking

Electrical Equipment Safety Regulations  
RoHS Regulations

## EMI

- PCA300F, PCA600F  
Complies with FCC-B, CISPR32-B, EN55011-B, EN55032-B, VCCI-B
- PCA1000F, PCA1500F  
Complies with FCC-A, CISPR32-A, EN55011-A, EN55032-A, VCCI-A

## EMS Compliance : EN61204-3, EN61000-6-2

IEC60601-1-2 (2014), EN60601-1-2 (2015)

EN61000-4-2  
EN61000-4-3  
EN61000-4-4  
EN61000-4-5  
EN61000-4-6  
EN61000-4-8  
EN61000-4-11

DC-DC module power supply/3000V isolation

Fixed voltage input/Non regulated single output/1W

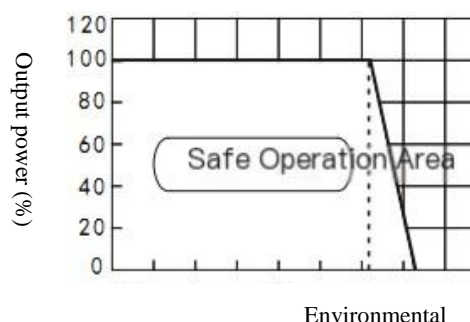
## Module Selection Guide

PRODUCT MODEL	input		output			conversion
	nominal voltage	Voltage range ( V )	rated voltage ( V )	minimum current	Maximum current	efficiency ( % )
F0503S-1WR3	5	4.5-5.5	3	31	303	76
F0505S-1WR3			5	20	200	81
F0509S-1WR3			9	12	111	82
F0512S-1WR3			15	7	67	81
F0515S-1WR3			12	9	83	81
F0524S-1WR3			24	5	42	80
F1203S-1WR3	12	10.8-13.2	3	31	303	76
F1205S-1WR3			5	20	200	79
F1209S-1WR3			9	12	111	80
F1212S-1WR3			12	9	83	82
F1215S-1WR3			15	7	67	82
F1224S-1WR3			24	5	42	77
F2403S-1WR3	24	21.6-26.4	3	31	303	76
F2405S-1WR3			5	20	200	78
F2409S-1WR3			9	12	111	79
F2412S-1WR3			12	9	83	80
F2415S-1WR3			15	7	67	80
F2424S-1WR3			24	5	42	76
F*****S-1WR3	** Can be customized according to actual needs **					

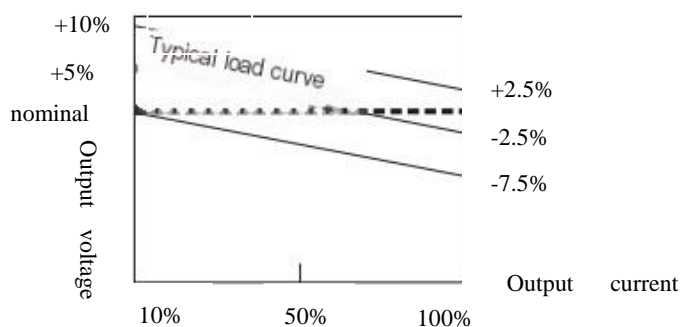
General characteristics		
switching frequency	100KHz	100% load, input nominal voltage
Output short-circuit duration	1 second	There is also a sustainable short-circuit protection function, with the letter "R" after the model number
The shell heats up during product operation	15°C(Typ.)	25°C(Max)
temperature coefficient	0.03%/°C	100% full load
Pin soldering temperature resistance	300°C	Welding time ≤ 3 seconds
Isolation voltage (input and output)	3000VDC	Test time 1 minute, leakage current less than 1mA
insulation resistance	1000MΩ	Insulation voltage 500V
operation temperature	-40~+85°C	Ambient Temperature
storage temperature	-55~+125°C	
Storage Humidity	<95%	No condensation
Cooling method	Natural air cooling	
weight	2.8g	standard
Input characteristics		
Voltage range	≤±10%	
filtering	Ceramic capacitor	
No-load power consumption	10% rated power (typical value)	
output characteristic		
project	numerical value	Test conditions
Linear voltage regulation rate	±1.2(Max)	Input voltage changes by 1%
Load regulation rate	≤±12%(Typ); ±15%(Max)	10% to 100% load
Accuracy of output voltage	Refer to the error envelope curve graph	
RIPPLE AND NOISE	≤75mVp-p (Typ); 100mVp-p (Max )	20MHz bandwidth
Unless otherwise specified, all other parameter testing conditions are: nominal input voltage, pure resistive load, and 25 °C room temperature environment		

Typical characteristic curve

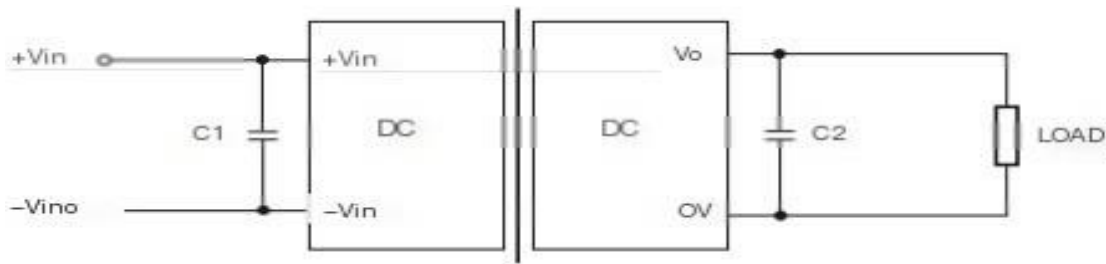
**temperature profile**



**Error envelope curve graph**



### Recommended Basic Application Circuits:



### precautions

1. Output load requirements: Try to avoid using the module without load as much as possible. When the actual power consumption of the load is less than 10% of the module's rated output power or there is a no-load phenomenon, it is recommended to use it at the output end

External false load or selection of modules with lower rated power, the false load (resistance) can be calculated at 5-10% of the module's rated power,

Resistance value= $U^2/(10\% \times 1W)$ ;

2 Overload protection: Under normal working conditions, the output circuit of this product has no protection function against overload situations. The simplest method is to connect a self recovery fuse in series at the input end, or add a circuit breaker outside the circuit;

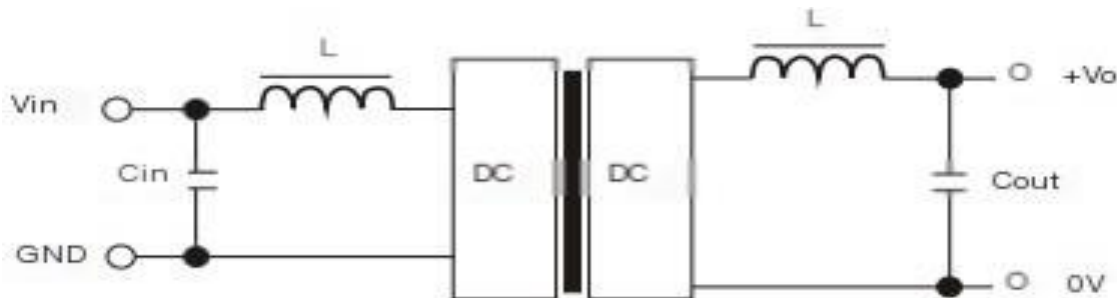
3 The capacitance value of the external capacitor connected to the output terminal should not be too large, otherwise it may cause overcurrent or poor startup during module startup. The specific selection should be based on the capacitive load value table

4 For situations with high requirements for ripple noise, an external LC filter should be connected, as shown in Figure 1. It is recommended that Cout use ceramic capacitors or high-frequency low impedance electrolytic capacitors, as using tantalum capacitors may cause module damage.

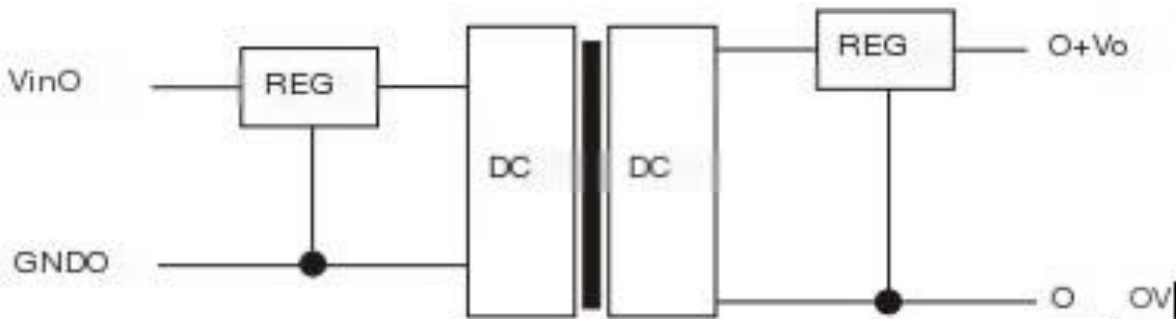
5 The simplest device for output voltage stabilization, overvoltage, and overcurrent protection is to connect a linear regulator with overheat protection in series at its input or output terminals, as shown in Figure 2:

### Capacityload

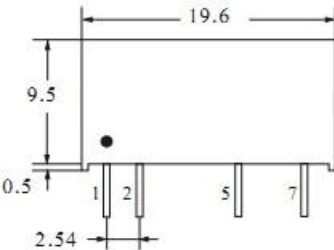
Input voltage (VDC)	External capacitor (uF)	Output voltage (VDC)	External capacitor (uF)
3.3 or 5	4.7	3.3 or 5	10
12 or 15	2.2	9	4.7
24 or 48	1	12	2.2
		15 or 24	1



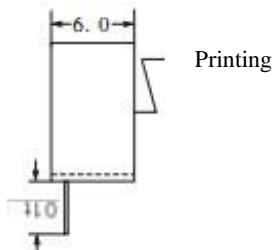
(Figure 1)



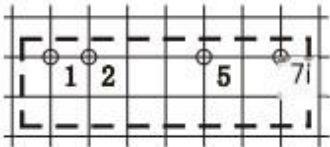
(Figure 2)



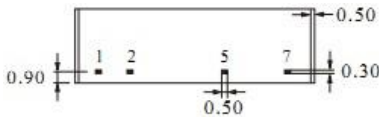
front view



side view



Top view, grid spacing  
2.54mm



bottom view

(Unit: mm Tolerance:  $\pm 0.25$ )

F****S-1WR3				
Pin	1	2	5	7
definition	+Vin	-Vin	0V	+Vo
describe	Enter positive	Input negative	Output location	output