SDT01F series

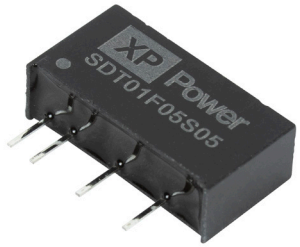
XP Power

1W

DC-DC converters

The SDT01F series of single and dual output 1W DC-DC converters are an ideal solution for isolating voltage rails in a distributed power supply architecture such as analog, digital, data and relay circuits.

The SDT01F offers high efficiency, ITE safety approvals, short circuit protection and a wide operating temperature range in a compact SIP7 design, allowing easy integration into industrial, instrumentation and technology applications.



Features

- Single & dual unregulated outputs 3.3V to 15VDC
- ±10% input range
- Nominal inputs 3.3V to 24VDC input range
- Compact SIP7 package
- 1.5kVDC isolation
- UL62368-1 & IEC62368-1 safety approvals
- Continuous short circuit protection
- -40°C to +105°C operating temperature
- 3 year warranty

Applications

Industrial

Instrumentation

Technology

Dimensions

19.65 x 10.2 x 6.0 mm (0.77" x 0.4" x 0.24")

More resources

Click the link or scan the code

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Models & ratings

Model number	Input voltage	Output voltage	Output current	Maximum capacitive load	Efficiency[1]
SDT01F03S3V3	3.3V (3.0-3.6V)	3.3V	303mA	1000uF	75%
SDT01F03S05		5.0V	200mA	1000uF	78%
SDT01F03S09		9.0V	112mA	470uF	78%
SDT01F03S12		12.0V	84mA	220uF	77%
SDT01F03S15		15.0V	67mA	220uF	78%
SDT01F03D3V3		±3.3V	±152mA	±330uF	77%
SDT01F03D05		±5V	±100mA	±330uF	78%
SDT01F03D09		±9V	±56mA	±220uF	79%
SDT01F03D12		±12V	±42mA	±100uF	80%
SDT01F03D15		±15V	±34mA	±100uF	74%

Continued on page 2

Notes:

1. Typical value at nominal input voltage and full load.

SDT01F series

Models & ratings

Model number	Input voltage	Output voltage	Output current	Maximum capacitive load	Efficiency[1]
SDT01F05S3V3	5V (4.5-5.5V)	3.3V	303mA	1000uF	74%
SDT01F05S05		5.0V	200mA	1000uF	79%
SDT01F05S09		9.0V	112mA	470uF	79%
SDT01F05S12		12.0V	84mA	220uF	78%
SDT01F05S15		15.0V	67mA	220uF	78%
SDT01F05D3V3		±3.3V	±152mA	±330uF	75%
SDT01F05D05		±5V	±100mA	±330uF	77%
SDT01F05D09		±9V	±56mA	±220uF	80%
SDT01F05D12		±12V	±42mA	±100uF	80%
SDT01F05D15		±15V	±34mA	±100uF	80%
SDT01F12S3V3	12V (10.8-13.2V)	3.3V	303mA	1000uF	79%
SDT01F12S05		5.0V	200mA	1000uF	82%
SDT01F12S09		9.0V	112mA	470uF	84%
SDT01F12S12		12.0V	84mA	220uF	80%
SDT01F12S15		15.0V	67mA	220uF	81%
SDT01F12D3V3		±3.3V	±152mA	±330uF	80%
SDT01F12D05		±5V	±100mA	±330uF	76%
SDT01F12D09		±9V	±56mA	±220uF	84%
SDT01F12D12		±12V	±42mA	±100uF	80%
SDT01F12D15		±15V	±34mA	±100uF	81%
SDT01F24S3V3	24V (21.6-26.4)	3.3V	303mA	1000uF	78%
SDT01F24S05		5.0V	200mA	1000uF	79%
SDT01F24S09		9.0V	112mA	470uF	81%
SDT01F24S12		12.0V	84mA	220uF	79%
SDT01F24S15		15.0V	67mA	220uF	80%
SDT01F24D3V3		±3.3V	±152mA	±330uF	76%
SDT01F24D05		±5V	±100mA	±330uF	80%
SDT01F24D09		±9V	±56mA	±220uF	83%
SDT01F24D12		±12V	±42mA	±100uF	80%
SDT01F24D15		±15V	±34mA	±100uF	81%

Notes:

1. Typical value at nominal input voltage and full load.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage	3.0		26.4	VDC	See models and ratings table
Input filter	Integrated capacitor				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	3V3		30	VDC	See models and ratings table
Initial set accuracy	-5		+5		Nominal input and full load
Minimum load					No minimum load required
Line regulation		±1.2	±1.4	%	Per 1% change of input value
Load regulation			15/10	%	3.3V & 5V / 9V, 12V & 15V output from 10% to full load
Ripple and noise			100	mV pk-pk	Measured with 20MHz bandwidth and 0.1µF ceramic capacitor at nominal input 25°C
Short circuit protection	Continuous, with auto recovery				
Maximum capacitive load	See Models and Ratings table				
Temperature coefficient		±0.02		%/°C	Full load

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	See Models and Ratings table.				
Isolation: input to output	1500			VDC	
Switching frequency	50			kHz	Full load
Isolation resistance	10^9			Ω	Input to output
Isolation capacitance		20/80		pF	Single/Dual. Input to output
Power density				W/in^3	
Mean time between failure		17		Mhrs	MIL-HDBK-217F, 25°C GB.
Weight		2.6 (0.006)		g(lb)	
Recommended solder profile	IPC/JEDEC J-STD-020D.1				
MSL	Level 1				
Case material	Black plastic, flame retardant UL94V-0				
Pin material	Phosphor bronze				
Water wash	Non-soaking water wash with de-ionised water. Dry thoroughly.				
Potting material	Epoxy UL94V-0 rated				

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-40		+105	°C	See derating graphs.
Storage temperature	-55		+125	°C	
Case temperature			+120	°C	
Operating humidity			95	%RH	Non-condensing
Cooling	Natural convection				

Safety approvals

Safety agency	Standard	Notes & conditions
UL/IEC	UL62368-1 / IEC6236-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

EMC: Emissions

Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032	Class B	See application notes
Radiated	EN55032	Class B	See application notes

EMC: Immunity

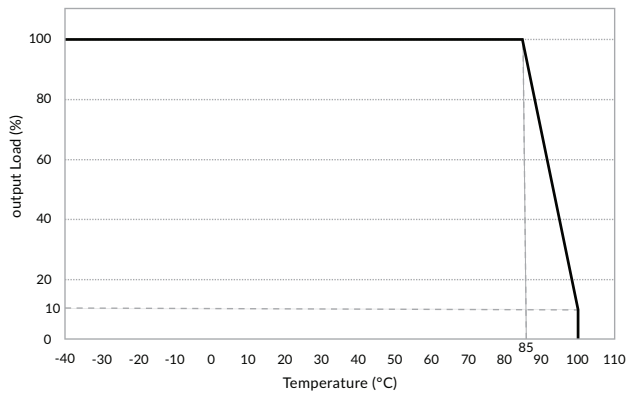
Phenomenon	Standard	Test level	Criteria	Notes & conditions
Immunity	EN55035			
ESD	EN61000-4-2	3	A	±6kV contact, ±8kV air discharge
Radiated	EN61000-4-3	3V/m	A	
EFT/burst	EN61000-4-4	2	A	±1kV (Line to line)
Surges	EN61000-4-5	1	A	±0.5kV (Line to line)
Conducted	EN61000-4-6	3V	A	
Magnetic field	EN61000-4-8	1A/m	A	

Application notes

Derating curves (nominal input voltage)

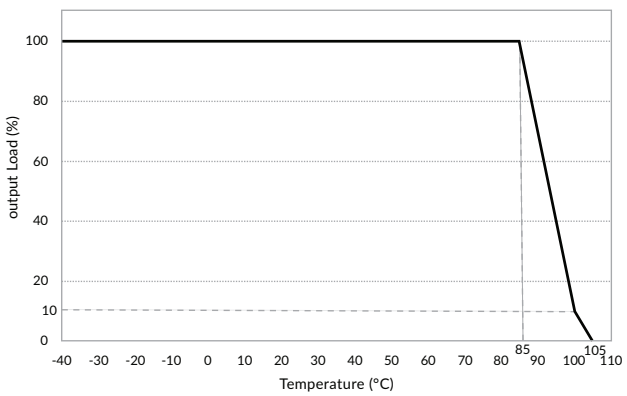
Temperature Derating Curve

3.3Vdc input



Temperature Derating Curve

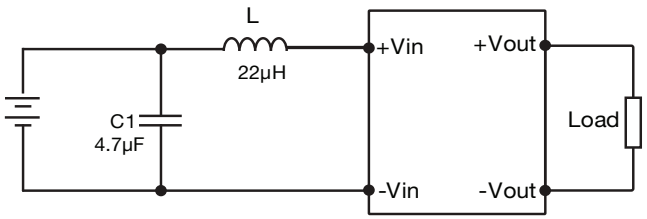
Other input values



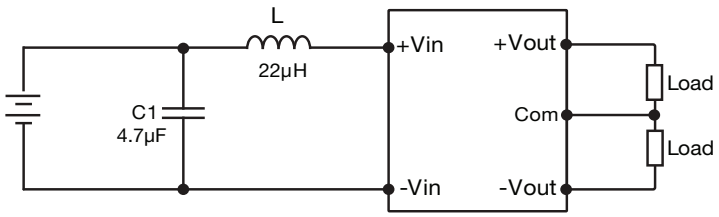
Application notes

EMI (Class A) filter

Single



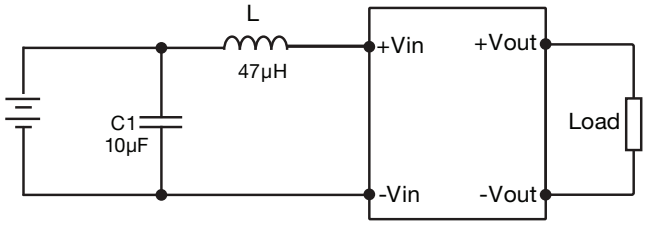
Dual



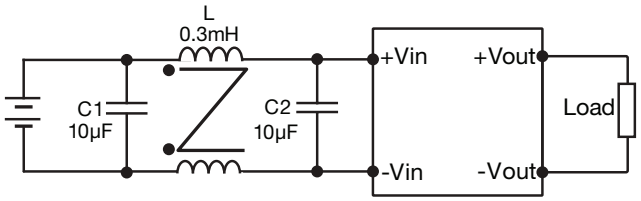
EMI (Class B) filter

Single

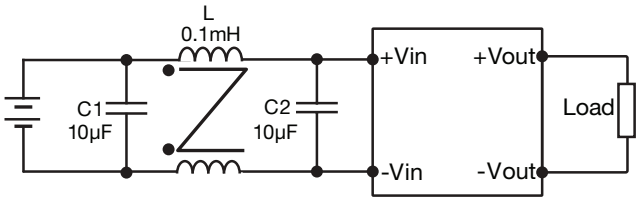
3.3VDC & 5VDC input



12VDC input (all outputs) & 24VDC input (5Vout)

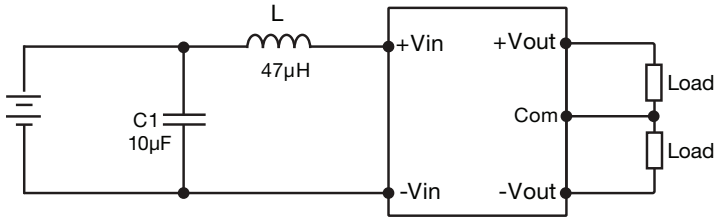


24VDC input (Other outputs)

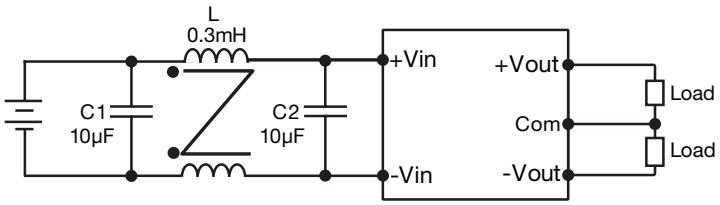


Dual

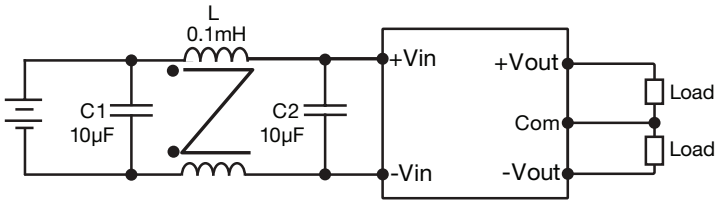
3.3VDC & 5VDC input



12VDC input (all outputs) & 24VDC input (5Vout)

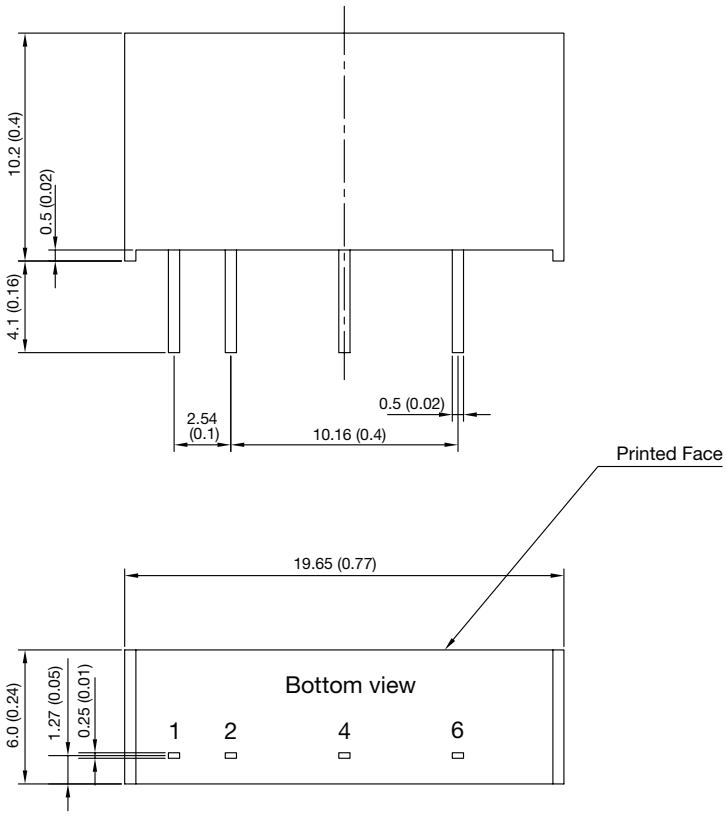


24VDC input (Other outputs)

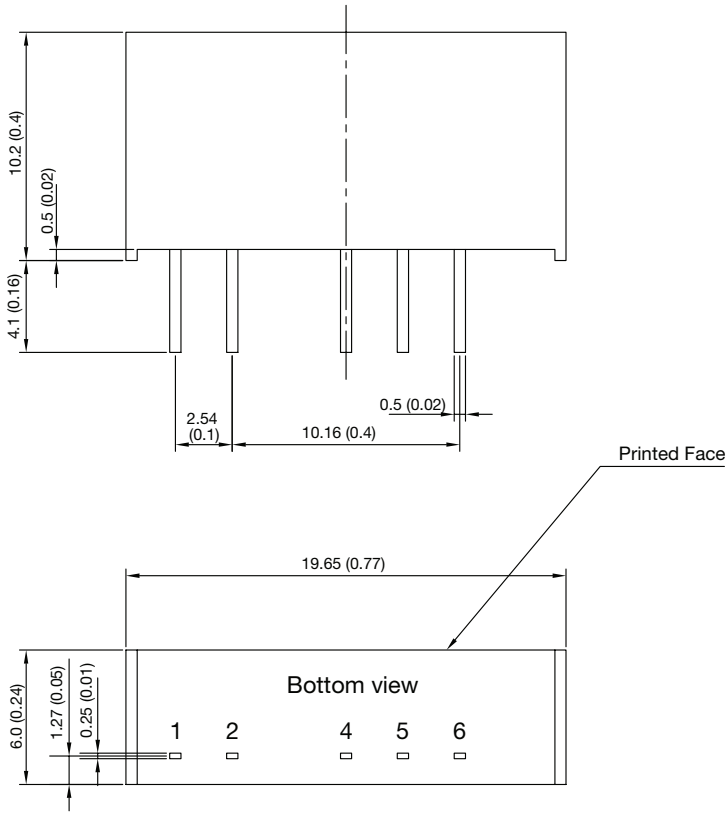


Mechanical details

Single



Dual



Pin connections		
Pin	**Single**	**Dual**
1	+Vin	+Vin
2	-Vin	-Vin
3	No pin	No pin
4	-Vout	-Vout
5	No pin	Com
6	+Vout	+Vout

Notes:

1. All dimensions are in mm (inches)
2. Weight: 2.6g (0.006lbs)
3. Pin diameter tolerance: ±0.1 (±0.004)
4. Pin pitch tolerance: ±0.25 (±0.01)
5. Case tolerance: ±0.5 (±0.02)