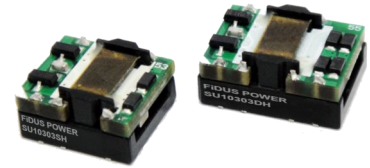


1 Watts

- Rated working voltage 250Vrms / 400VDC
- 4200VDC High Isolation
- Single (8 pin) and Dual output (10 pin)
- Operating Temperature -40 to 105°C
- 5 Year warranty



The SU1 series of low cost surface mount DC/DC converters come in both single and dual outputs in a 8 or 10 pin package respectively. Inputs are available in 3.3 & 5V versions and outputs from 3.3 to 5.5V single and dual. The units operate from -40 to +105°C and offer high isolation of 4200VDC with a high rated working voltage of 250Vrms/400VDC. All models have a FiDUS 5 year warranty.

Dimensions:

Single: 0.50 x 0.44 x 0.27" (12.7 x 11.18 x 6.85mm)
Dual: 0.60 x 0.44 x 0.27" (15.24 x 11.18 x 6.85mm)

Models & Ratings

Model Number ⁽¹⁾	Input Voltage	Output Voltage	Output Current	Input Current		Maximum Capacitive Load	Efficiency
				No Load	Full Load		
SU10303SH	3.3V	3.3V	303mA	50mA	416mA	220uF	73%
SU10305SH	3.3V	5V	200mA	50mA	404mA	220uF	75%
SU10503SH	5V	3.3V	303mA	40mA	274mA	220uF	73%
SU10505SH	5V	5V	200mA	40mA	264mA	220uF	76%
SU10303DH	3.3V	±3.3V	±151mA	50mA	404mA	±100uF	75%
SU10305DH	3.3V	±5V	±100mA	50mA	389mA	±100uF	78%
SU10503DH	5V	±3.3V	±151mA	40mA	267mA	±100uF	75%
SU10505DH	5V	±5V	±100mA	40mA	257mA	±100uF	78%

Notes

1. For parts on reel add -R to part number
2. Under no load conditions the unit may not meet all specifications
3. 3.3V input recommended fusing 1A slow blow fuse, 5V input recommended 0.5A slow blow fuse

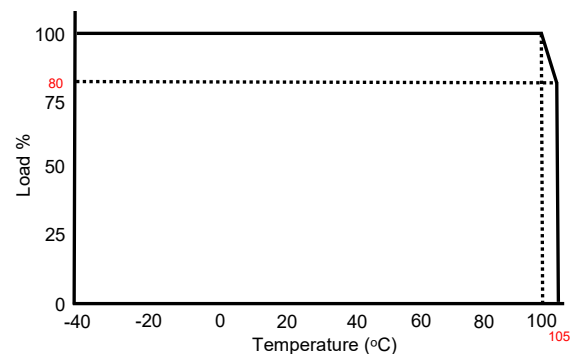
Input

Parameter	Rating
Input voltage range	See table
Working voltage	250Vrms / 400VDC
Input reflected ripple current	20mA pk-pk through 12uH inductor & 47uF ESR<1Ωat 100KHz
Input surge (1000mS max)	3.3V Models 5VDC Max. 5V Models 9VDC Max.
Input filter	Capacitor

Physical

Parameter	Rating
Case material	Non-conductive black plastic (UL94V-0)
Pin material	0.5mm C5191R-H Solder coated
Weight	Single 1.52g, Dual 1.8g
Dimensions	Single: 0.50 x 0.44 x 0.27" (12.7 x 11.18 x 6.85mm) Dual: 0.60 x 0.44 x 0.27" (15.24 x 11.18 x 6.85mm)
Reflow soldering temperature	Peak 245°C 10 sec max
Reflow solder process	IPC/JEDEC J-STD-020D.1
Vibration	MIL-STD-810F

Derating curve



Output

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Output voltage	3.3		5	VDC	±10% See Model & Ratings table
Set point accuracy					See envelope curve
Line regulation			±1.2	%/%Vin	
Load regulation	3.3 Vdc output models ±15 5 Vdc output models ±12			%	From 10% to 100% load change
Minimum load		0		%	Under no load conditions the unit may not meet all specifications
Ripple & Noise	150		±150	mV pk-pk	Measured with 20MHz bandwidth, may be larger at low loads
Short circuit protection					Continuous with automatic recovery 0.5sec
Maximum capacitive load					See Model and Ratings table

General

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	73		78	%	See Model & Ratings table
Isolation	4200			VDC	Input to output 60sec
Isolation resistance	1000			M Ohm	
Isolation capacitance			25	pF	
Switching frequency	50		80	KHz	
Power density			16.6	W/ln ³	
MTBF		>7		MHrs	As per MIL-HDBK-217F, 25°C GB

Environmental

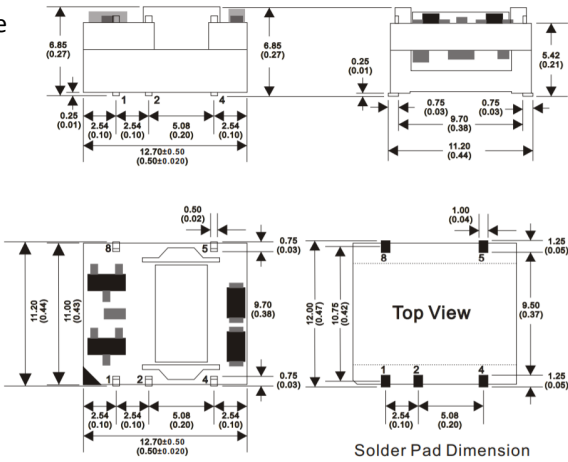
Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating temperature	-40		105	°C	Derate linearly from 100% load at 100°C to 80% load at 105°C.
Storage temperature	-55		125	°C	
Cooling					Convection cooled 30-65LFM
Humidity			95	% RH	Non-condensing
Moisture sensitivity level (MSL)	IPC/JEDEC J-STD-020D.1 LEVEL 1				
Temperature coefficient			±0.03	%/°C	

EMC

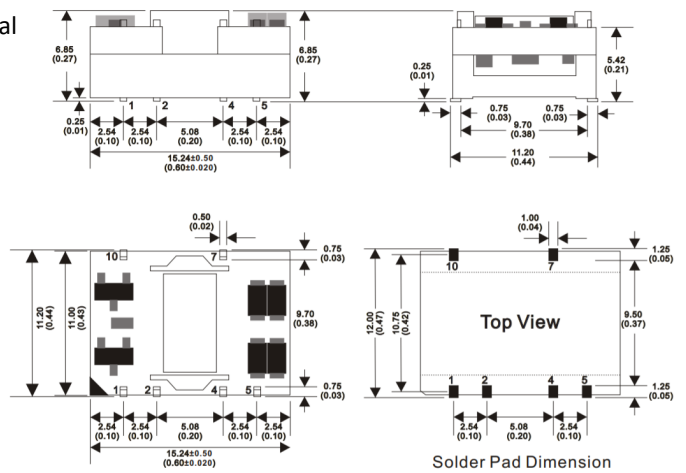
	Standard	Test level	Criteria	Notes & Conditions
Conducted	EN55032	B	-	See application note
Radiated	EN55032	B	-	
ESD	IEC 61000-4-2	3	A	8kV air discharge, 6kV contact discharge
RS	IEC 61000-4-3	3	A	80~1000 MHz, 10V/m, 80% AM (1kHz)
EFT	IEC 61000-4-4	3	A	Power line : 2kV. See application note
Surge	IEC 61000-4-5	2	A	1.2/50 µs Open Circuit Voltage, 8/20 µs Short Circuit Current, DC Port, Line to line : 1.0kV. See application note
CS	IEC 61000-4-6	3	A	0.15 ~ 80 MHz, 10Vrms, 80% AM (1kHz)
PFFM	IEC 61000-4-8	1	A	50Hz, 1A/m

Mechanical Details

Single



Dual



Pin Connections		
Pin	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
4	-Vout	Com
5	+Vout	-Vout
7	-	+Vout
8	N.C	-
10	-	N.C

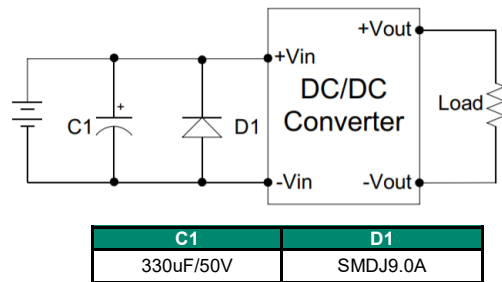
Notes

1. All dimensions shown in millimetres (inches)
2. Tolerance (unless marked) ± 0.25 (± 0.001)

Application notes

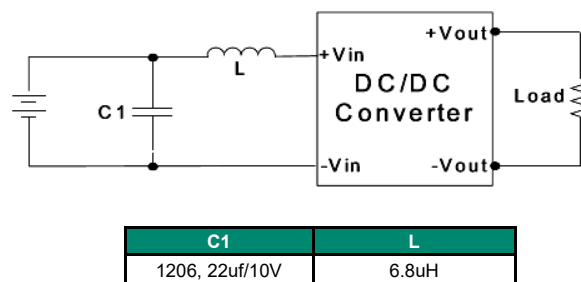
Surge Filter

The input surge and EFT filter components can be fitted to help meet conducted immunity requirements for the system. They should be mounted as close as possible to the module. Lead lengths should be minimized and where possible avoid running input and output tracks under the module as part of good design practice for best EMC performance. If the module is embedded in a system running from an AC/DC converter, this will have its own additional immunity protection and EMI filtering that will impact the overall system EMI performance.



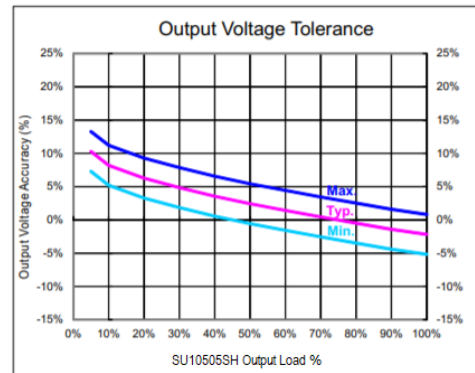
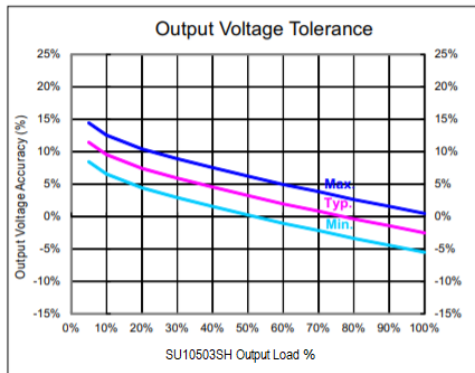
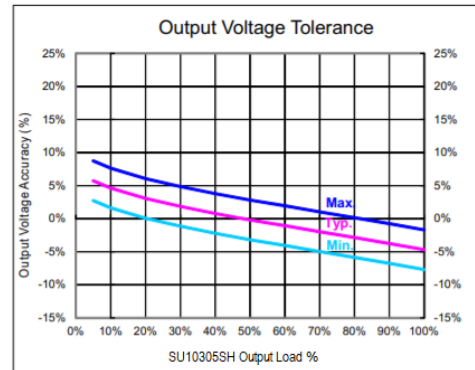
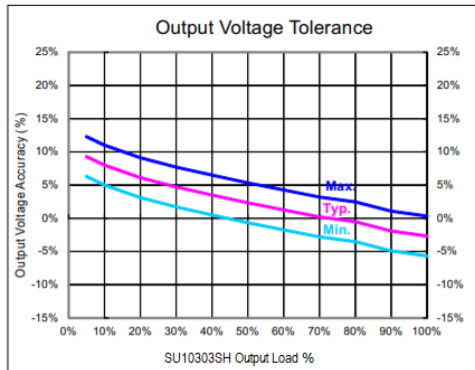
EMI Filter

The input filter components can be fitted to help meet conducted emission requirements for the system. They should be mounted as close as possible to the module. Lead lengths should be minimized and where possible avoid running input and output tracks under the module as part of good design practice for best EMC performance. If the module is embedded in a system running from an AC/DC converter, this will have its own additional immunity protection and EMI filtering that will impact the overall system EMI performance.



Tolerance Envelope Curve

Single



Dual

