



### FEATURES

- Ultra compact SMD Package
- Wide 2:1 Input Range
- Fully regulated Outputs
- Low Ripple and Noise
- Operating Temp. Range -40°C to +85°C
- I/O-isolation Voltage 1500VDC
- Continuous Short-circuit Protection
- Remote On/Off Control
- Qualified for Lead-free Reflow Process
- UL/cUL/IEC/EN 60950-1 Safety Approval (pending)
- 3 Years Product Warranty



The SK01S/D series is a family of compact 1W dc/dc-converters with wide 2:1 input voltage ranges and tightly regulated output voltages.

They work with high efficiency over the full load range and come with a remote On/Off control input.

High efficiency to 82% allows operating temperatures up to +75°C without power derating. The very small footprint of these converters make them an ideal solution for many space critical applications in communication equipment, instrumentation and many other battery operated applications.

### Model List

Model Number	Input Voltage (Range) VDC	Output Voltage VDC	Output Current Max. mA	Input Current		Max. capacitive Load µF	Reflected Ripple current mA (typ.)	Efficiency (typ.) @Max. Load %
				@Max. Load mA(typ.)	@No Load mA(typ.)			
SK01S0505A	5 (4.5 ~ 9)	5	200	256	40	1680	80	78
SK01S0512A		12	83	252		820		79
SK01S0515A		15	67	248		680		81
SK01D0512A		±12	±42	255		470#		79
SK01D0515A		±15	±33	248		330#		80
SK01S1205A	12 (9 ~ 18)	5	200	105	20	1680	40	79
SK01S1212A		12	83	105		820		79
SK01S1215A		15	67	102		680		82
SK01D1212A		±12	±42	104		470#		81
SK01D1215A		±15	±33	103		330#		80
SK01S2405A	24 (18 ~ 36)	5	200	53	10	1680	30	79
SK01S2412A		12	83	51		820		82
SK01S2415A		15	67	51		680		82
SK01D2412A		±12	±42	51		470#		82
SK01D2415A		±15	±33	50		330#		82
SK01S4805A	48 (36 ~ 75)	5	200	26	7	1680	20	79
SK01S4812A		12	83	26		820		80
SK01S4815A		15	67	26		680		80
SK01D4812A		±12	±42	26		470#		81
SK01D4815A		±15	±33	25		330#		81

# For each output



## Input Specifications

Parameter	Model	Min.	Typ.	Max.	Unit
Input Surge Voltage (1 sec. max.)	5V Input Models	-0.7	---	15	VDC
	12V Input Models	-0.7	---	25	
	24V Input Models	-0.7	---	50	
	48V Input Models	-0.7	---	100	
Start-Up Threshold Voltage	5V Input Models	---	---	4.5	
	12V Input Models	---	---	9	
	24V Input Models	---	---	18	
	48V Input Models	---	---	36	
Internal Filter Type	All Models	Capacitor			

## Output Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit	
Output Voltage Setting Accuracy	At 50% Load and Nominal Vin	---	---	±1.0	%Vnom.	
Output Voltage Balance	Dual Output, Balanced Loads	---	---	±1.0	%	
Line Regulation	Vin=Min. to Max.	---	---	±0.2	%	
Load Regulation	Min. Load to Full Load	Single Output	---	---	±1.0	%
		Dual Output	---	---	±1.0	%
	Io=10% to 90%	Single Output	---	---	±0.5	%
		Dual Output	---	---	±0.8	%
Min.Load	No minimum Load Requirement					
Ripple & Noise	0-20 MHz Bandwidth	---	---	75	mV <sub>P-P</sub>	
Transient Recovery Time	25% Load Step Change	---	250	---	µsec	
Temperature Coefficient		---	---	±0.02	%/°C	
Short Circuit Protection	Continuous					

## General Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
I/O Isolation Voltage (rated)	60 Seconds	1500	---	---	VDC
I/O Isolation Resistance	500 VDC	1000	---	---	MΩ
I/O Isolation Capacitance	100KHz, 1V	---	---	50	pF
Switching Frequency		---	220	---	KHz
MTBF(calculated)	MIL-HDBK-217F@25°C, Ground Benign	2,800,000	---	---	Hours
Moisture Sensitivity Level (MSL)	IPC/JEDEC J-STD-020D.1	Level 2			
Safety Approvals(pending)	CSA 60950-1 recognition, IEC/EN 60950-1(CB-scheme)				

## Input Fuse (recommended)

5V Input Models	12V Input Models	24V Input Models	48V Input Models
500mA Slow-Blow Type	250mA Slow-Blow Type	120mA Slow-Blow Type	60mA Slow-Blow Type

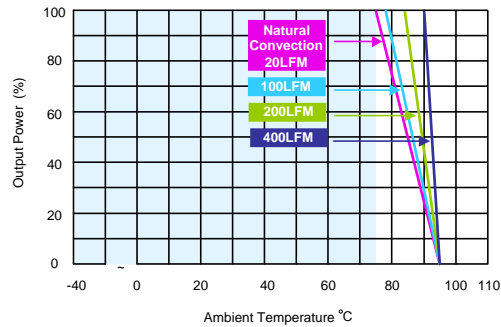
## Remote On/Off Control

Parameter	Conditions	Min.	Typ.	Max.	Unit
Converter On	Open or high impedance				
Converter Off	2~4mA current applied via 1Kohm resistor				
Standby Input Current	Supply Off & Nominal Vin	---	2.5	---	mA

## Environmental Specifications

Parameter	Conditions	Min.	Max.	Unit
Operating Ambient Temperature Range (See Power Derating Curve)	Natural Convection	-40	+85	°C
Case Temperature		---	+95	°C
Storage Temperature		-55	+125	°C
Humidity (non condensing)		---	95	% rel. H
Lead Temperature (1.5mm from case for 10Sec.)		---	260	°C

## Power Derating Curve

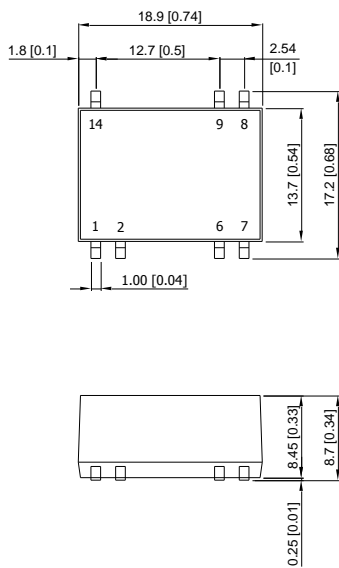


## Notes

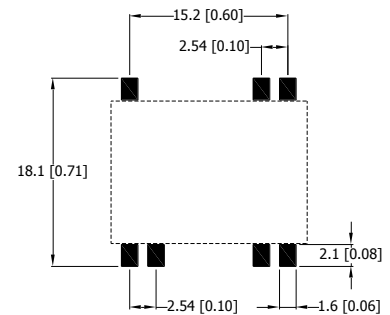
- 1 Specifications typical at  $T_a=+25^{\circ}\text{C}$ , resistive load, nominal input voltage, rated output current unless otherwise noted.
- 2 We recommend to protect the converter by a slow blow fuse in the input supply line.
- 3 Other input and output voltage may be available, please contact factory.
- 4 That "natural convection" is about 20LFM but is not equal to still air (0 LFM).
- 5 Specifications are subject to change without notice.

## Package Specifications

### Mechanical Dimensions



### Connecting Pin Patterns



- ▶ All dimensions in mm (inches)
- ▶ Tolerance:  $X.X \pm 0.5$  ( $X.XX \pm 0.02$ )  
 $X.XX \pm 0.25$  ( $X.XXX \pm 0.01$ )
- ▶ Pins  $\pm 0.05$  ( $\pm 0.002$ )

### Pin Connections

Pin	Single Output	Dual Output
1	-Vin	-Vin
2	Remote On/Off	Remote On/Off
6	NC	Common
7	NC	-Vout
8	+Vout	+Vout
9	-Vout	Common
14	+Vin	+Vin

NC: No Connection

### Physical Characteristics

Case Size	: 18.9x13.7x8.45mm (0.74x0.54x0.33 inches)
Case Material	: Non-Conductive Black Plastic (flammability to UL 94V-0 rated)
Pin Material	: Phosphor bronze
Weight	: 4.5g



Part Numbering System						
S	K	01	S	05	03	A
Form factor	Family series	Watt	Number of Outputs	Input Voltage	Output Voltage	Option Code
D-DIP	A-Z	01:1W	S - Single	03:3.3V	03:3.3V	A - Std. Functions
P-SIP		02:2W	D- Dual	05: 5V	05: 5V	
S-SMD		03:3W		12:12V	12:12V	
		04:4W		24: 24V	15: 15V	
		06:6W		48:48V	24: 24V	

### WARRANTY

Delta offers a three(3) years limited warranty. Complete warranty information is listed on our web site or is available upon request from Delta.

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