

### FEATURES

- Efficiency up to 81%
- SIP Package with Industry Standard Pinout
- Package Dimension:  
5V&12V Models:  
19.5 x 10.2 x 6.1 mm (0.77"x 0.4"x 0.24")  
15V&24V Models:  
19.5 x 10.2 x 7.1 mm (0.77"x 0.4"x 0.28")
- High Isolation Voltage 3000 VDC
- Operating Temperature Range -40°C to +85°C
- Single and Dual Outputs
- >2 MHours MTBF
- 3 Years Product Warranty



The PD01S/D series are miniature, SIP Package, isolated 1W DC/DC converters with 3,000VDC isolation. It offers short circuit protection and allows a wide operating temperature range of -40°C to +85°C. These isolated DC/DC converters are the latest offering from a world leader in power systems technology and manufacturing — Delta Electronics, Inc

### Model List

Model Number	Input Voltage (Range) VDC	Output Voltage VDC	Output Current		Input Current		Load Regulation % (max.)	Max. capacitive Load	Efficiency (typ.) @Max. Load
			Max.	Min.	@Max. Load	@No Load			
			mA	mA	mA(typ.)	mA(typ.)			VDC
PD01S0503A	5 (4.5 ~ 5.5)	3.3	260	5	235	30	10	220	73
PD01S0505A		5	200	4	281		10		71
PD01S0509A		9	110	2	260		8		76
PD01S0512A		12	84	1.5	258		7	78	
PD01S0515A		15	67	1	258		7	78	
PD01D0505A		±5	±100	±2	278		10	100*	72
PD01D0509A		±9	±56	±1	262		8		77
PD01D0512A		±12	±42	±0.8	258		7		78
PD01D0515A		±15	±34	±0.7	258		7		79
PD01S1203A		12 (10.8 ~ 13.2)	3.3	260	5		96	12	8
PD01S1205A	5		200	4	114	8	73		
PD01S1209A	9		110	2	106	5	78		
PD01S1212A	12		84	1.5	105	5	80		
PD01S1215A	15		67	1	104	5	80		
PD01D1205A	±5		±100	±2	113	8	100*		74
PD01D1209A	±9		±56	±1	106	5			79
PD01D1212A	±12		±42	±0.8	104	5			81
PD01D1215A	±15		±34	±0.7	105	5			81
PD01S2403A	24 (21.6 ~ 26.4)		3.3	260	5	49	7		8
PD01S2405A		5	200	4	59	8		71	
PD01S2409A		9	110	2	54	5		76	
PD01S2412A		12	84	1.5	54	5		78	
PD01S2415A		15	67	1	53	5		79	
PD01D2405A		±5	±100	±2	58	8		100*	72
PD01D2409A		±9	±56	±1	55	5			76
PD01D2412A		±12	±42	±0.8	53	5			79
PD01D2415A		±15	±34	±0.7	53	5			80

\* For each output



## Input Characteristics

Parameter	Model	Min.	Typ.	Max.	Unit
Input Voltage Range	5V Input Models	4.5	5	5.5	VDC
	12V Input Models	10.8	12	13.2	
	24V Input Models	21.6	24	26.4	
Input Surge Voltage (1 sec. max.)	5V Input Models	-0.7	---	9	VDC
	12V Input Models	-0.7	---	18	
	24V Input Models	-0.7	---	30	
Reverse Polarity Input Current	All Models	---	---	0.3	A
Input Filter		Internal Capacitor			
Internal Power Dissipation		---	---	450	mW

## Output Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy		---	±1.0	±3.0	%
Output Voltage Balance	Dual Output, Balanced Loads	---	±0.1	±1.0	%
Line Regulation	For Vin Change of 1%	---	±1.2	±1.5	%
Load Regulation	Io=20% to 100%	See Model Selection Guide			
Ripple & Noise (20MHz)		---	65	100	mV <sub>P-P</sub>
Ripple & Noise (20MHz)	Over Line, Load & Temp.	---	---	150	mV <sub>P-P</sub>
Ripple & Noise (20MHz)		---	---	15	mV <sub>rms</sub>
Temperature Coefficient		---	±0.01	±0.02	%/°C
Short Circuit Protection	0.5 Second Max.				

## General Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Unit
I/O Isolation Voltage (rated)	60 Seconds	3000	---	---	VDC
I/O Isolation Resistance	500 VDC	10	---	---	GΩ
I/O Isolation Capacitance	100KHz, 1V	---	60	100	pF
Switching Frequency		70	100	120	KHz
MTBF (calculated)	MIL-HDBK-217F@25°C, Ground Benign	2,000,000	-----	-----	Hours

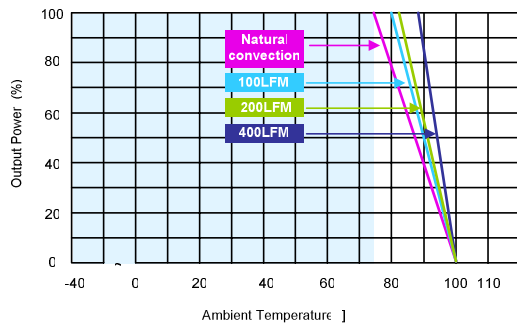
## Recommended Outside Input Fuse

5V Input Models	12V Input Models	24V Input Models
500mA Slow-Blow Type	200mA Slow-Blow Type	100mA Slow-Blow Type

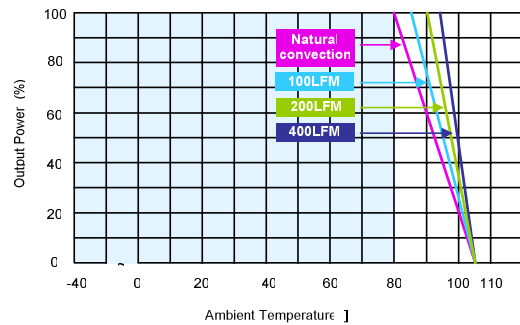
## Environmental Specifications

Parameter	Conditions	Min.	Max.	Unit
Operating Temperature Range (with Derating)	Ambient	-40	+85	°C
Case Temperature		---	+90	°C
Storage Temperature Range		-50	+125	°C
Humidity (non condensing)		---	95	% rel. H
Cooling	Free-Air convection			
Lead Temperature (1.5mm from case for 10Sec.)		---	260	°C

## Power Derating Curve



(3.3V, 5V & ±5V)



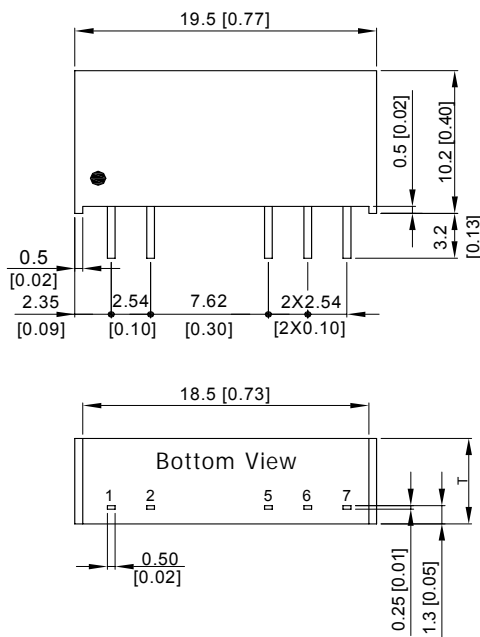
(all other output)

## Notes

- 1 Specifications typical at Ta=+25°C, resistive load, nominal input voltage and rated output current unless otherwise noted.
- 2 Ripple & Noise measurement bandwidth is 0-20MHz.
- 3 These power converters require a minimum output loading to maintain specified regulation, operation under no-load conditions will not damage these modules; however they may not meet all specifications listed.
- 4 All DC/DC converters should be externally fused at the front end for protection.
- 5 Specifications subject to change without notice.

## Mechanical Drawing

### Mechanical Dimensions



### Pin Connections

Pin	Single Output	Dual Output
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	No Pin	Common
7	+Vout	+Vout

5V&12V Input :

T: 6.1mm(0.24 inch)

15V&24V Input:

T: 7.1mm(0.28 inch)

- ▶ All dimensions in mm (inches)
- ▶ Tolerance: X.X±0.25 (X.XX±0.01)  
X.XXX±0.13 (X.XXX±0.005)
- ▶ Pins ±0.05(±0.002)

## Physical Outline

Case Size (5V&12V Input) : 19.5x6.1x10.2mm (0.77x0.24x0.40 Inches)

Case Size(15V&24V Input) : 19.5x7.1x10.2mm (0.77x0.28x0.40 Inches)

Case Material : Non-Conductive Black Plastic (flammability to UL 94V-0 rated)

Weight (5V&12V Input) : 2.2g

Weight (15V&24V Input) : 2.6g



Part Numbering System						
P	D	01	S	05	05	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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