PL01S/D Series

1W DC/DC CONVERTER, SIP-Package, Wide 2:1 Input Range

FEATURES

- Efficiency up to 80%
- Wide 2:1 Input Range
- Fully regulated Outputs
- Operating Temperature Range -40°C to +85°C
- Low Ripple and Noise
- Isolation Voltage 1500VDC
- Short-circuit Protection
- Lead free, RoHs Compliant
- 3 Years Product Warranty

Security Lab Medical Metro Data Center Telecom Industrial Network

The PL01S/D series are miniature, SIP Package, isolated 1W DC/DC converters with 1,500VDC isolation. It offers continuous 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)	Output Voltage	Output Current	Input Current		Max. capacitive Load	Reflected Ripple current	Efficiency (typ.)
			Max.	@Max. Load	@No Load			@Max. Load
	VDC	VDC	mA	mA(typ.)	mA(typ.)	µF	mA (typ.)	%
PL01S0505A	5 (4.5 ~ 9)	5	200	263	40	1680	80	76
PL01S0512A		12	83	259		820		77
PL01S0515A		15	67	254		680		79
PL01D0512A		±12	±42	262		470*		77
PL01D0515A		±15	±33	254		330*		78
PL01S1205A	12 (9 ~ 18)	5	200	108	20	1680	40	77
PL01S1212A		12	83	108		820		77
PL01S1215A		15	67	105		680		80
PL01D1212A		±12	±42	106		470*		79
PL01D1215A		±15	±33	106		330*		78
PL01S2405A	24 (18 ~ 36)	5	200	54	10	1680	30	77
PL01S2412A		12	83	52		820		80
PL01S2415A		15	67	52		680		80
PL01D2412A		±12	±42	53		470*		80
PL01D2415A		±15	±33	52		330*		80
PL01S4805A	48 (36 ~ 75)	5	200	27	7	1680	20	77
PL01S4812A		12	83	27		820		78
PL01S4815A		15	67	27		680		78
PL01D4812A		±12	±42	27		470*		79
PL01D4815A		±15	±33	26		3308		79

* For each output

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Input Characteristics

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 Characteristics

Parameter	Conditions		Min.	Typ.	Max.	Unit
Output Voltage Setting Accuracy	At 50% Load and Nominal Vin		---	---	±1.0	%Vnom.
Line Regulation	Vin=Min. to Max.		---	---	±0.2	%
Load Regulation	No Load to Full Load	Single Output Models	---	---	±1.0	%
		Dual Output Models	---	---	±1.0	%
	10% to 90% Load	Single Output Models	---	---	±0.5	%
		Dual Output Models	---	---	±0.8	%
Min.Load	No minimum Load Requirement					
Ripple & Noise (20MHz)			---	50	---	mV_{P-P}
Transient Recovery Time	25% Load Step Change		---	250	---	µsec
Temperature Coefficient			---	---	±0.02	%/℃
Short Circuit Protection	Continuous					

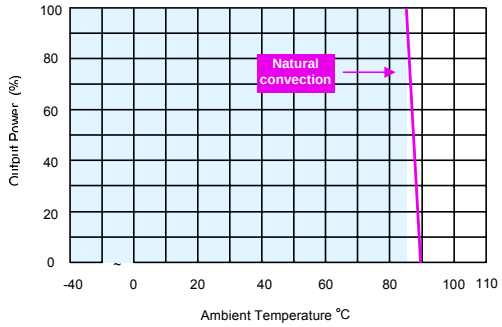
General Characteristics

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		---	250	---	KHz
MTBF(calculated)	MIL-HDBK-217F@25℃, Ground Benign	2,800,000	---	---	Hours

Environmental Characteristics

Parameter	Conditions	Min.	Max.	Unit
Operating Ambient Temperature Range (See Power Derating Curve)	Natural Convection	-40	+85	℃
Case Temperature		---	+105	℃
Storage Temperature		-55	+125	℃
Humidity (non condensing)		---	95	% rel. H
Lead Temperature (1.5mm from case for 10Sec.)		---	260	℃

Power Derating Curve

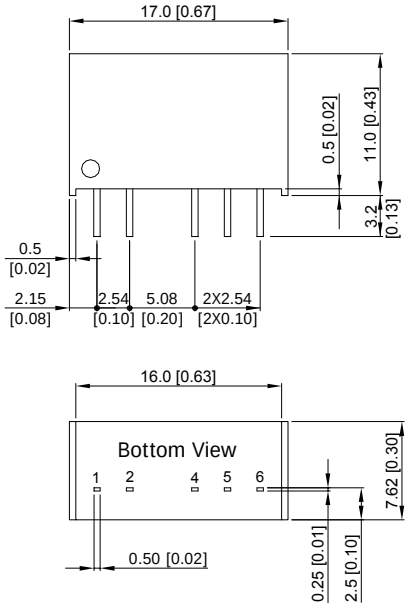


Notes

1 Specifications typical at Ta=+25℃, resistive load, nominal input voltage, rated output current unless otherwise noted.
2 Ripple & Noise measurement bandwidth is 0-20 MHz.
3 All DC/DC converters should be externally fused at the front end for protection.
4 That “natural convection” is about 20LFM but is not equal to still air (0 LFM).
5 Specifications subject to change without notice.

Mechanical Drawing

Mechanical Dimensions



Pin Connections

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

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

Physical Outline

Case Size	:	17.0x7.62x11.0mm (0.67x0.30x0.43 inches)
Case Material	:	Non-Conductive Black Plastic (flammability to UL 94V-0 rated)
Pin Material	:	Alloy 42
Weight	:	12.9g

Part Numbering System

P	L	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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