

FEATURES

- Efficiency up to 75%
- SIP Package with Industry Standard Pinout
- High Isolation Volage 6000 VDC
- Lead free ,RoHs Complian
- Industrial & Medical Safety Approval
- Operating Temperature range - 25°C to +85°C
- Low isolation Capacitance
- >2 MHours MTBF
- 3 Years Product Warranty



The PI01S/D series are miniature, SIP Package, isolated 1W DC/DC converters with 6,000VDC isolation. It allows a wide operating temperature range of -25°C to $+85^{\circ}\text{C}$. With high isolation, PI01S/D is suitable for all kinds of medical device application. These high 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 uF	Efficiency (typ.)
			Max.	Min.	@Max. Load	@No Load			@Max. Load
			mA	mA	mA(typ.)	mA(typ.)			%
PI01S0505A	5 (4.5 ~ 5.5)	5	200	4	303	55	10	680	66
PI01S0512A		12	80	2	291		8		66
PI01S0515A		15	65	1	295		8		66
PI01D0505A		± 5	± 100	± 2	303		10	220*	66
PI01D0512A		± 12	± 40	± 1	267		8		72
PI01D0515A		± 15	± 35	± 1	287		8		73
PI01S1205A		12 (10.8 ~ 13.2)	5	200	4		126	30	10
PI01S1212A	12		80	2	121	8	66		
PI01S1215A	15		65	1	123	8	66		
PI01D1205A	± 5		± 100	± 2	126	10	220*		66
PI01D1212A	± 12		± 40	± 1	108	8			74
PI01D1215A	± 15		± 35	± 1	117	8			75

* 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	
Input Surge Voltage (1 sec. max.)	5V Input Models	-0.7	---	9	VDC
	12V Input Models	-0.7	---	29	
Reverse Polarity Input Current	All Models	---	---	0.3	A
Input Filter		LC Filter			
Internal Power Dissipation		---	---	650	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)		---	100	150	mV _{P-P}
Ripple & Noise (20MHz)	Over Line, Load & Temp.	---	---	200	mV _{P-P}
Ripple & Noise (20MHz)		---	---	15	mV _{rms}

Temperature Coefficient		---	±0.01	±0.02	%/°C
Short Circuit Protection	0.5 Second Max.				

Isolation and Safety Standards

Parameter	Conditions	Min.	Typ.	Max.	Unit
I/O Isolation Voltage (rated)	60 Seconds	3000	---	---	VACrms
I/O Isolation Test Voltage	Flash tested for 1 Second	4500	---	---	V _{PK}
I/O Isolation Resistance	500 VDC	10	---	---	GΩ
I/O Isolation Capacitance	100KHz, 1V	---	15	20	pF
Safety Standards	cUL/UL60950-1, CSA C22.2 No. 60950-1-03				
	UL60601-1, CSA C22.2 No.601-1				
	IEC/EN 60950-1, IEC/EN 60601-1				
Approvals	IEC60950-1 CB report, cUL/UL 60950-1 certificate UL60601-1 UL certificate				

General Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Unit
Switching Frequency		50	80	100	KHz
MTBF (calculated)	MIL-HDBK-217F@25°C, Ground Benign	2,000,000	---	---	Hours

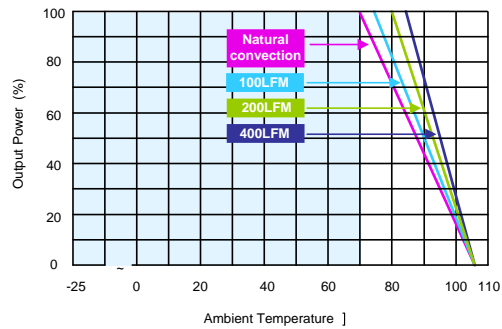
Recommended Input Fuse

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

Environmental Specifications

Parameter	Conditions	Min.	Max.	Unit
Operating Temperature Range (with Derating)	Ambient	-25	+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

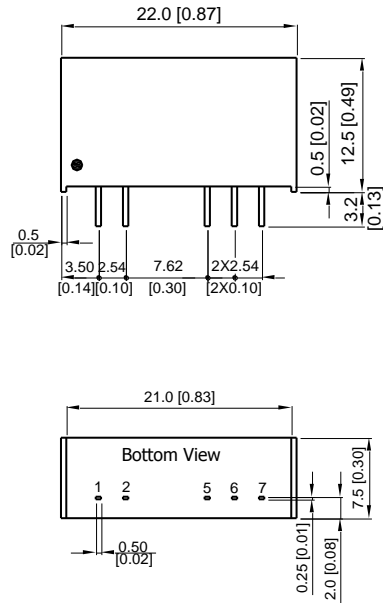


Notes

- 1 Specifications typical at $T_a=+25^{\circ}\text{C}$, 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

▶ All dimensions in mm (inches)

▶ Tolerance: X.X±0.25 (X.XX±0.01)

X.XX±0.13 (X.XXX±0.005)

▶ Pins ±0.05 (±0.002)

Physical Outline

Case Size : 22.0x7.5x12.5mm (0.87x0.30x0.49 Inches)

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

Weight : 3.9g



Part Numbering System						
P	I	01	S	05	12	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.

Information furnished by Delta is believed to be accurate and reliable. However, no responsibility is assumed by Delta for its use, nor for any infringements of patents or other rights of third parties, which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Delta. Delta reserves the right to revise these specifications at any time, without notice.