PF01S Sries

1W DC/DC CONVERTER, SIP-Package, High Isolation



FEATURES

- Efficiency up to 88%
- SIP Package with Industry Standard Pinout
- Semi-regulated Output Voltage
- High Isolation Voltage 3000VDC
- UL/IEC/EN 60950-1 Safety
- Operating Temperature Range –40°C to +85°C
- Lead free, RoHs Compliant
- >2 MHours MTBF
- CSA / NRTL60950-1 safety approval
- 3 Years Product Warranty



The PF01S 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 products provide a typical load regulation of 3.5% to 5.5% depending on each model. The PF01S/D DC/DC converters are a compromise between a fully regulated converter and a non-regulated converter . These isolated DCDC 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		Load Regulation	Reflected Ripple	Max. capacitive Load	Efficiency (typ.)
			Max.	Min.	@Max. Load	@No Load				@Max.Load
	VDC	VDC	mA	mA	mA(typ.)	mA(typ.)	% (max.)	mA(typ.)	uF	%
PF01S0505A	5 (4.5 ~ 5.5)	5	200	4	238	30	6.2	11	220	84
PF01S0509A		9	110	2	229		5.5			86.5
PF01S0512A		12	84	1.5	231		5.5			87
PF01S0515A		15	67	1	230		5			87.5
PF01S1205A	12 (10.8 ~ 13.2)	5	200	4	99	12	5	5	220	84
PF01S1209A		9	110	2	96		3.3			86
PF01S1212A		12	84	1.5	95		3.6			88
PF01S1215A		15	67	1	95		2.9			88
PF01S2405A	24 (21.6 ~ 26.4)	5	200	4	50	11	5	4.7	220	84
PF01S2409A		9	110	2	48		3.5			86.5
PF01S2412A		12	84	1.5	48		3.5			87.5
PF01S2415A		15	67	1	48		3			87.5

E-mail: DCDC@delta.com.tw
http://www.delta.com.tw/dcdc

Input Characteristics

Parameter	Model	Min.	Typ.	Max.	Unit
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	
Input Voltage Range	5V Input Models	4.5	5	5.5	
	12V Input Models	10.8	12	13.2	
	24V Input Models	21.6	24	26.4	
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
Line Regulation	For Vin Change of 1%	---	±1.05	±1.2	%
Load Regulation	Io=20% to 100%	See Model Selection Guide			
Ripple & Noise (20MHz)		---	30	60	mV_{P-P}
Temperature Coefficient		---	±0.01	±0.02	%/℃
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 Test Voltage	Flash tested for 1 Second	3300	---	---	V_{PK}
I/O Isolation Resistance	1000 VDC	10	---	---	GΩ
I/O Isolation Capacitance	100KHz, 1V	30	60	120	pF
Switching Frequency		50	100	120	KHz
MTBF (calculated)	MIL-HDBK-217F@25℃, Ground Benign	2,000,000	---	---	Hours
Safety Approvals	CSA 60950-1 recognition,IEC/EN 60950-1(CB-scheme)				

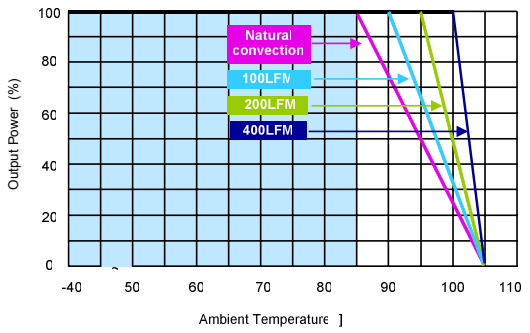
Recommended Outside Input Fuse

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

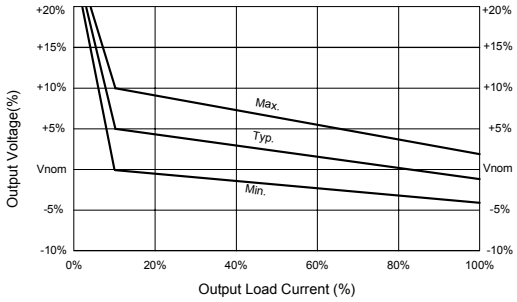
Environmental Specifications

Parameter	Conditions	Min.	Max.	Unit
Operating Temperature Range (without Derating)	Ambient	-40	+85	℃
Case Temperature		---	+95	℃
Storage Temperature Range		-50	+125	℃
Humidity (non condensing)		---	95	% rel. H
Cooling	Free-Air convection			
Lead Temperature (1.5mm from case for 10Sec.)		---	260	℃

Power Derating Curve



Output Voltage Tolerance

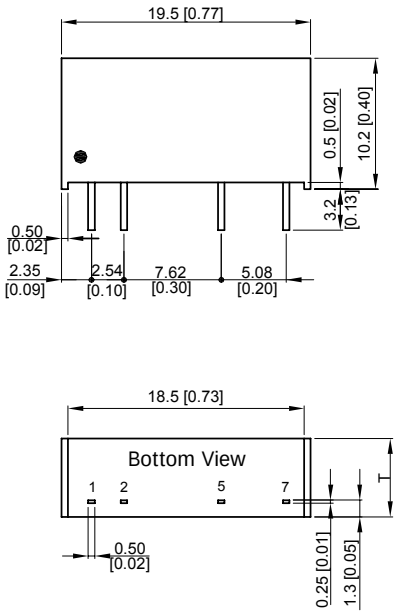


Notes

1 Specifications typical at Ta=+25℃, 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	Function
1	+Vin
2	-Vin
5	-Vout
7	+Vout

5V & 12V Input Models:
T=6.1[0.24]
24V Input Models:
T=7.1[0.28]

►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 (5&12V Input)	:	19.5x6.1x10.2mm (0.77x0.24x0.40 Inches)
Case Size (24V Input)	:	19.5x7.1x10.2mm (0.77x0.28x0.40 Inches)
Case Material	:	Non-Conductive Black Plastic (flammability to UL 94V-0 rated)
Weight (5&12V Input)	:	2.2g
Weight (24V Input)	:	2.6g

Part Numbering System

P	F	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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