

FEATURES

- Efficiency up to 81%
- Overload Protection
- Fully Regulated Output Voltage
- Operating Temperature Range -40°C to +85°C
- Wide 4:1 Input Range
- Isolation Voltage 1600 VDC
- Remote On/Off Control
- Lead free, RoHs compliant
- UL/cUL/IEC/EN 60950-1 Safety Approval(pending)
- 3 Years Product Warranty



The PJ03S/D series are miniature, SIP-8 package, isolated 3W DC/DC converters with 1,600VDC isolation. The PJ03S/D series features fully regulated output and wide 4:1 input voltage ranges. It offers over load 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 Selection Guide

Model Number	Input Voltage (Range)	Output Voltage	Output Current		Input Current		Max. capacitive Load	Efficiency (typ.)
			Max.	Min.	@Max. Load	@No Load		@Max. Load
	VDC	VDC	mA	mA	mA(typ.)	mA(typ.)	μF	%
PJ03S1203A	12 (4.5 ~ 18)	3.3	700	175	260	60	1760	74
PJ03S1205A		5	600	150	320		1000	78
PJ03S1212A		12	250	63	313		170	80
PJ03S1215A		15	200	50	313		110	80
PJ03D1205A		±5	±300	±75	313		470*	80
PJ03D1212A		±12	±125	±31	313		1008*	80
PJ03D1215A		±15	±100	±25	313		47 *	80
PJ03S2403A		24 (9 ~ 36)	3.3	700	175		128	25
PJ03S2405A	5		600	150	156	1000	80	
PJ03S2412A	12		250	63	154	170	81	
PJ03S2415A	15		200	50	154	110	81	
PJ03D2405A	±5		±300	±75	158	470 *	79	
PJ03D2412A	±12		±125	±31	156	100 *	80	
PJ03D2415A	±15		±100	±25	154	47 *	81	
PJ03S4803A	48 (18 ~ 75)		3.3	700	175	65	15	
PJ03S4805A		5	600	150	79	1000		79
PJ03S4812A		12	250	63	79	170		79
PJ03S4815A		15	200	50	79	110		79
PJ03D4805A		±5	±300	±75	79	470*		79
PJ03D4812A		±12	±125	±31	79	100 *		79
PJ03D4815A		±15	±100	±25	78	47 *		80

* For each output



Input Characteristics

Parameter	Model	Min.	Typ.	Max.	Unit
Input Surge Voltage (1 sec. max.)	12V Input Models	-0.7	---	25	VDC
	24V Input Models	-0.7	---	50	
	48V Input Models	-0.7	---	100	
Start-Up Threshold Voltage	12V Input Models	3	4	4.5	
	24V Input Models	4.5	6	9	
	48V Input Models	8.5	12	18	
Under Voltage Shutdown	12V Input Models	---	3.5	4	
	24V Input Models	---	---	8	
	48V Input Models	---	---	16	
Reverse Polarity Input Current	All Models	---	---	1	A
Short Circuit Input Power		---	---	2500	mW
Internal Filter Type		Capacitor type			
Internal Power Dissipation		---	---	2600	mW

Output Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Unit
Output Voltage Setting Accuracy	At 50% Load and Nominal Vin	---	---	±1.0	%Vom.
Output Voltage Balance	Dual Output, Balanced Loads	---	±0.5	±2.0	%
Line Regulation	Vin=Min. to Max.	---	±0.3	±0.5	%
Load Regulation	Io=25% to 100%	---	±0.5	±1.0	%
Ripple & Noise (20MHz)	0-20 MHz Bandwidth	---	50	75	mV _{p-p}
Transient Recovery Time	25% Load Step Change	---	300	500	µsec
Transient Response Deviation		---	±3	±5	%
Temperature Coefficient		---	---	±0.02	%/°C
Short Circuit Protection	Continuous				

General Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Unit
I/O Isolation Voltage (rated)	60 Seconds	1600	---	---	VDC
I/O Isolation Resistance	500 VDC	1000	---	---	MΩ
I/O Isolation Capacitance	100KHz, 1V	---	200	---	pF
Switching Frequency		---	350	---	KHz
MTBF (calculated)	MIL-HDBK-217F@25°C, Ground Benign	800,000	---	---	Hours
Safety Approvals(pending)	UL/cUL 60950-1 recognition (CSA certificate), IEC/EN 60950-1(CB-scheme)				

Recommended Input Fuse

12V Input Models	24V Input Models	48V Input Models
1500mA Slow-Blow Type	700mA Slow-Blow Type	350mA Slow-Blow Type

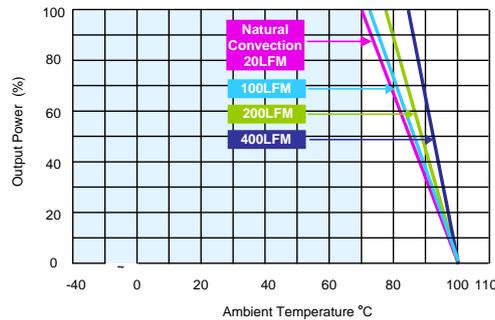
Remote On/Off Control

Parameter	Conditions	Min.	Typ.	Max.	Unit
Converter On	Under 0.6 VDC or Open Circuit, drops down to 0VDC by 2mV/°C				
Converter Off		2.7	---	15	VDC
Device Standby Input Current		---	1	2.5	mA
Control Input Current (on)	Vin = 0V	---	---	1	mA
Control Input Current (off)	Vin = 5.0V	---	---	1	mA
Control Common	Referenced to Negative Input				

Environmental Characteristics

Parameter	Conditions	Min.	Max.	Unit
Operating Ambient Temperature Range (See Power Derating Curve)	Natural Convection	-40	+85	°C
Case Temperature		---	105	°C
Storage Temperature Range		-55	+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

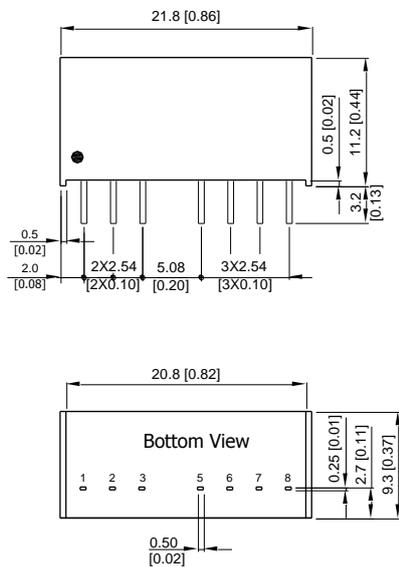


Notes

- 1 Specifications typical at $T_a=+25^{\circ}\text{C}$, resistive load, nominal input voltage and rated output current unless otherwise noted.
- 2 Transient recovery time is measured to within 1% error band for a step change in output load of 75% to 100%.
- 3 Ripple & Noise measurement bandwidth is 0-20 MHz measured with a $1\mu\text{F}$ M/C.
- 4 These power converters require a minimum output loading to maintain specified regulation, operation under no-load conditions will modules; however, they may not meet all specifications listed.
- 5 All DC/DC converters should be externally fused at the front end for protection.
- 6 We recommend to protect the converter by a slow blow fuse in the input supply line.
- 7 That "natural convection" is about 20LFM but is not equal to still air (0 LFM).
- 8 Specifications are subject to change without notice.

Mechanical Drawing

Mechanical Dimensions



Pin Connections

Pin	Single Output	Dual Output
1	-Vin	-Vin
2	+Vin	+Vin
3	Remote	Remote
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

NC: No Connection

- ▶ 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 ± 0.1 (± 0.004)

Physical Outline

Case Size	: 21.8x9.3x11.2 mm (0.86x0.37x0.44 inches)
Case Material	: Non-Conductive Black Plastic (flammability to UL 94V-0 rated)
Pin Material	: Alloy 42
Weight	: 4.8g



Part Numbering System

P	J	03	S	48	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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