



### FEATURES

- ◆ Efficiency up to 82%
- ◆ I/O Isolation 4200VAC with Reinforced Insulation, rated for 300VAC Working Voltage
- ◆ Medical Safety to UL/CSA/EN/IEC 60601-1 3<sup>rd</sup> Edition
- ◆ 2 MOOP rated
- ◆ Wide 2:1 Input Voltage Range
- ◆ Fully regulated Output Voltage
- ◆ Low Leakage Current
- ◆ Operating Temp. Range -40°C to +75 °C
- ◆ Input Filter meets EN 55022, class A and FCC, level A
- ◆ Overload Protection
- ◆ 2"x 1" Plastic Package
- ◆ 3 Years Product Warranty

The DT10S/D series is a new range of high performance DC/DC converter modules with a reinforced insulation system. The I/O-isolation voltage is specified for 4200VACrms. The product comes in a compact 2"x1" industry standard package. All 15 models features wide 2:1 input voltage range and fully regulated output voltage. The DT10S/D DC/DC converters offer an economical solution for demanding applications in industrial and medical instrumentation requesting a certified supplementary or reinforced insulation system to comply with industrial or latest medical safety standards.

### Model List

Model Number	Input Voltage (Range)	Output Voltage	Output Current		Input Current		Reflected Ripple Current	Max. capacitive Load	Efficiency (typ.)
			Max.	@Max. Load	@No Load				
			VDC	VDC	mA	mA(typ.)			mA (typ.)
DT10S1205A	12 (9 ~ 18)	5	1600	877	30	100	1000	76	
DT10S12051A		5.1	1600	907				75	
DT10S1212A		12	835	1044				80	
DT10D1212A		±12	±417	1042				80	
DT10D1215A		±15	±333	1028				81	
DT10S2405A	24 (18 ~ 36)	5	2000	541	20	50	1000	77	
DT10S24051A		5.1	2000	559				76	
DT10S2412A		12	835	516				81	
DT10D2412A		±12	±417	516				81	
DT10D2415A		±15	±333	508				82	
DT10S4805A	48 (36 ~ 75)	5	2000	271	10	25	1000	77	
DT10S48051A		5.1	2000	280				76	
DT10S4812A		12	835	258				81	
DT10D4812A		±12	±417	258				81	
DT10D4815A		±15	±333	254				82	

# For each output



## Input Specifications

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	7	8	9	
	24V Input Models	13	15	18	
	48V Input Models	30	33	36	
Under Voltage Shutdown	12V Input Models	---	---	8.5	
	24V Input Models	---	---	16	
	48V Input Models	---	---	34	
Short Circuit Input Power	All Models	---	---	3000	mW
Internal Power Dissipation		---	---	4000	mW
Conducted EMI		Compliance to EN 55022, class A and FCC part 15, class A			

## Output Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
Output Voltage Setting Accuracy	At 50% Load and Nominal Vin	---	---	±1.0	%Vnom.
Output Voltage Balance	Dual Output, Balanced Loads	---	±0.5	±2.0	%
Line Regulation	Vin=Min. to Max.	---	±0.3	±0.5	%
Load Regulation	Io=15% to 100%	---	±0.5	±1.0	%
	Io=5% to 100%	---	±0.6	±1.2	%
Ripple & Noise (20MHz)	5V & 5.1V Output Models	---	75	100	mV <sub>P-P</sub>
	Other Output Models	---	100	150	mV <sub>P-P</sub>
Min.Load	No minimum Load Requirement				
Over Load Protection		120	150	---	%
Transient Recovery Time	25% Load Step Change	---	300	600	µsec
Transient Response Deviation		---	±3	±5	%
Temperature Coefficient		---	±0.02	±0.05	%/°C
Short Circuit Protection	Continuous				

## Isolation, Safety Standards

Parameter	Conditions	Min.	Typ.	Max.	Unit
I/O Isolation Voltage (reinforced)	60 Seconds	4200	---	---	VACrms
I/O Isolation Test Voltage	Flash tested for 1 Second	6000	---	---	V <sub>PK</sub>
Leakage Current	240VAC, 60Hz	---	---	10	µA
I/O Isolation Resistance	500 VDC	10	---	---	GΩ
I/O Isolation Capacitance	100KHz, 1V	---	60	80	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 3 <sup>rd</sup> Edition, 2 MOOP				
Approvals(Pending)	IEC60950-1 CB report, cUL/UL 60950-1 certificate				
	UL60601-1 UL certificate				

## General Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
Switching Frequency		120	150	180	KHz
MTBF(calculated)	MIL-HDBK-217F@25°C, Ground Benign	1,000,000	---	---	Hours

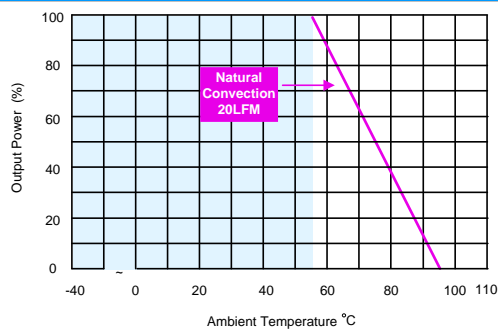
## Input Fuse

12V Input Models	24V Input Models	48V Input Models
3000mA Slow-Blow Type	1500mA Slow-Blow Type	750mA Slow-Blow Type

## Environmental Specifications

Parameter	Conditions	Min.	Max.	Unit
Operating Ambient Temperature Range (See Power Derating Curve)	Natural Convection	-40	+75	°C
Case Temperature		---	+95	°C
Storage Temperature Range		-50	+125	°C
Humidity (non condensing)		---	95	% rel. H
Altitude		---	4000	m
Cooling	Free-Air convection			
Lead Temperature (1.5mm from case for 10Sec.)		---	260	°C

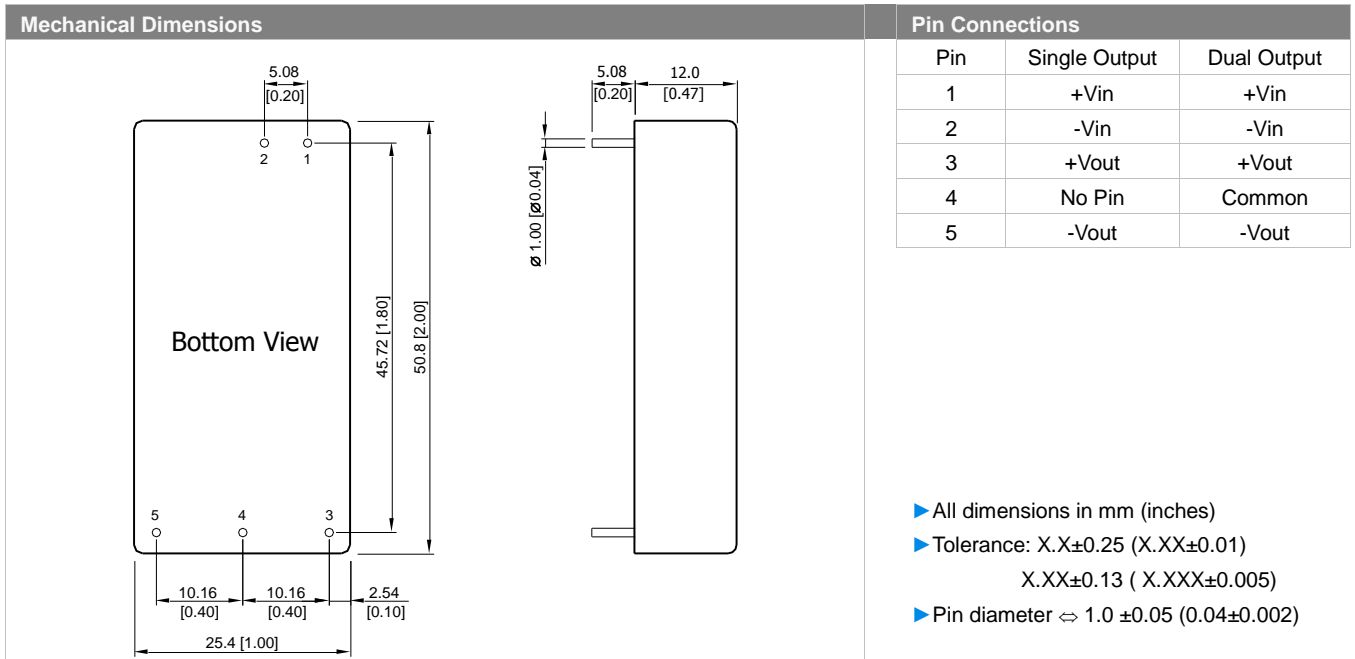
## Power Derating Curve



## Notes

- 1 Specifications typical at Ta=+25°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 0-20MHz.
- 4 All DC/DC converters should be externally fused at the front end for protection.
- 5 Other input and output voltage may be available, please contact factory.
- 6 That "natural convection" is about 20LFM but is not equal to still air (0 LFM).
- 7 Specifications are subject to change without notice.

## Mechanical Drawing



## Physical Outline

Case Size	: 50.8x25.4x12.0mm (2.0x1.0x0.47 inches)
Case Material	: Non-Conductive Black Plastic (flammability to UL 94V-0 rated)
Pin Material	: Copper Alloy with Gold Plate Over Nickel Subplate
Weight	: 24.5g



Part Numbering System						
D	T	10	S	12	05	A
Form factor	Family series	Watt	Number of Outputs	Input Voltage	Output Voltage	Option Code
D - DIP	A-Z	10 - 10W	S - Single	12 - 12V	05 - 5V	A - Std. Functions
P - SIP			D - Dual	24 - 24V	051 - 5.1V	
S - SMD				48 - 48V	12 - 12V	
					15 - 15V	

#### 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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