



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 3rd 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			@Max. Load
	VDC	VDC	mA	mA(typ.)	mA (typ.)	mA(typ.)	μF	%
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			220#	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				470
DT10D2412A		±12	±417	516			220#	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				470
DT10D4812A		±12	±417	258			220#	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 _{P-P}
	Other Output Models	---	100	150	mV _{P-P}
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 _{PK}
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 rd 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

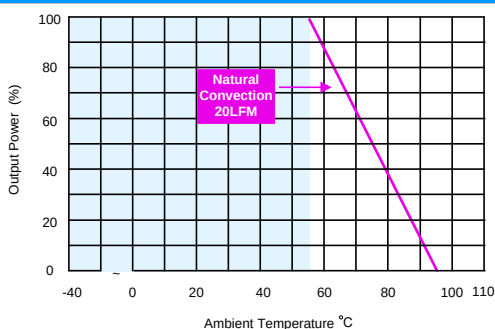
Input Fuse

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

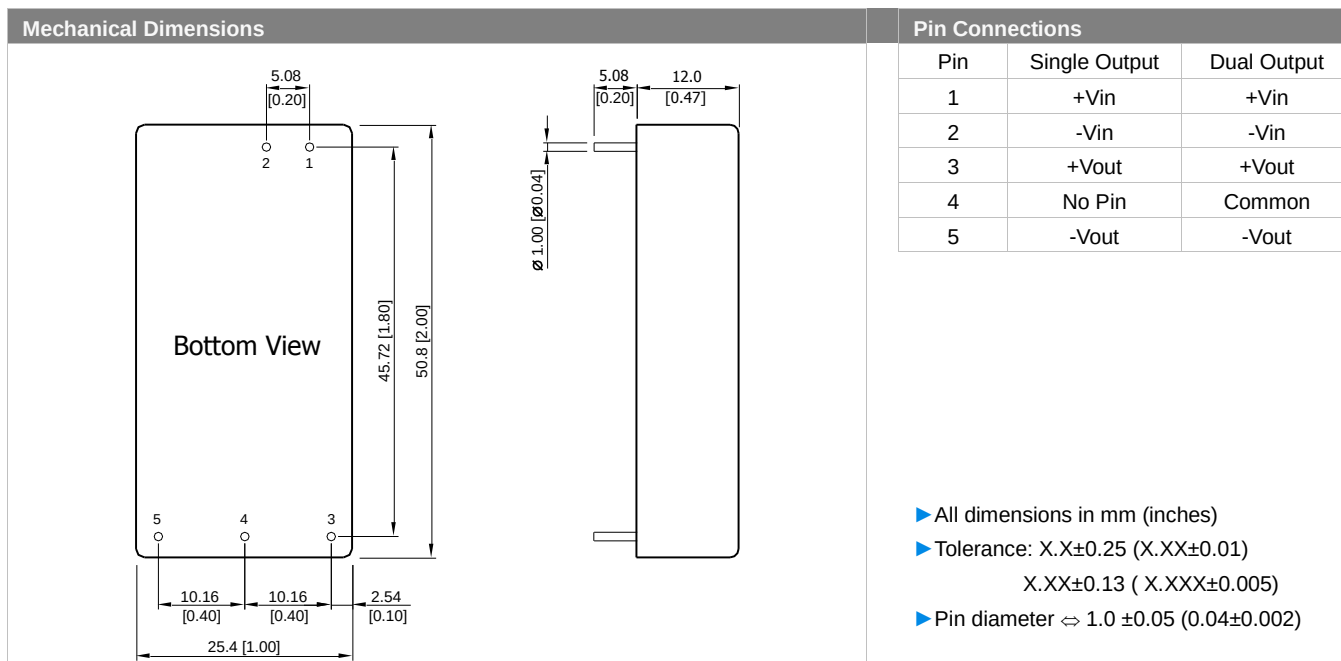
Power Derating Curve



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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