



## LPD10 SERIES

Single, dual and triple output

- **4:1 wide input voltage range**
- **16 models available including 3.3V outputs**
- **Input reflected ripple according to CEPT**
- **Continuous short circuit protection**
- **EN55022 conducted emissions level B**
- **Designed to meet EN60950 and IEC950**

The LPD10 series of DC/DC converters offer 10 Watts output power in a 2 x 2 inch package. 3.3V single outputs are available along with standard single, dual and triple outputs. All models feature short circuit protection as standard. The dual and triple output models of the LPD series provide undervoltage lockout. The LPD10 series complies with the rigorous EN55022 level B conducted emissions. The optimized thermal design and the copper case allow operation in ambient temperatures up to +70°C without derating or an additional heatsink.

[ 2 YEAR WARRANTY ]

## SPECIFICATION

All specifications are typical at nominal input, full load at 25°C unless otherwise stated

OUTPUT SPECIFICATIONS		
Line regulation	LL to HL, singles and duals LL to HL, triple output	±0.1% ±1.0%
Load regulation	Singles and duals: 10% to 100% FL Triples: 10% to 100% FL	±0.1% ±3.0%
Cross regulation (See Note 1)	Duals: asymmetrical load 10% to 100% FL Triples: asymmetrical load 10% to 100% FL	4.0% max. 5.0% max.
Voltage accuracy	Singles Duals	±2.0% ±3.0%
Minimum load	3.3V, 5V Single 12V, 15V Duals & triples, each output	50mA max. 20mA max. 10% FL
Overshoot	At start-up	3.0% max.
Ripple and noise	20MHz bandwidth	1.0% pk-pk, max. 20mV rms
Temperature coefficient		±0.02%/°C
Short circuit protection (See Note 2)	Hiccup mode	Continuous automatic recovery
INPUT SPECIFICATIONS		
Input voltage range	24VDC nominal, FL 48VDC nominal, FL	10 to 36VDC 20 to 72VDC
Input current		See table
Undervoltage lockout	Dual and triple outputs 24V nominal 48V nominal	9.5VDC max. 18.5VDC max.
Start-up time		200ms

EMC CHARACTERISTICS		
Conducted noise	EN55022, FCC part 15	Level B
Radiated noise	EN55022, FCC part 15	Level B
GENERAL SPECIFICATIONS		
Efficiency		See table
Isolation voltage	Input/output	500VDC
Isolation resistance	Input/output	10 <sup>8</sup> Ω
Isolation capacitance	Input/output	1nF
Switching frequency	Fixed	180 to 220kHz
Approvals and standards (pending)	Safety	VDE0805, EN60950, IEC950 UL1950, CSA C22.2 No. 950
Case material		Black coated, metal case
Material flammability		UL94V-0
Weight		65g (2.29oz)
MTBF	MIL-HDBK-217F	300,000 hours
ENVIRONMENTAL SPECIFICATIONS		
Thermal performance	Operating ambient (See derating curve) Non-operating amb. Case Derating Cooling	-10°C to +70°C -25°C to +95°C +95°C max. See derating curve Free air convection cooled
Relative humidity	Non-condensing	30% to 95%
Altitude	Operating Non operating	10,000 feet max. 40,000 feet max.
Vibration	5Hz to 500Hz	2.5G rms (approx.)

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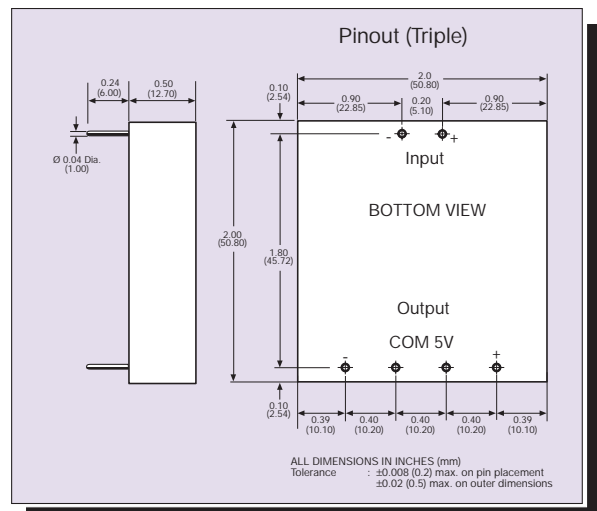
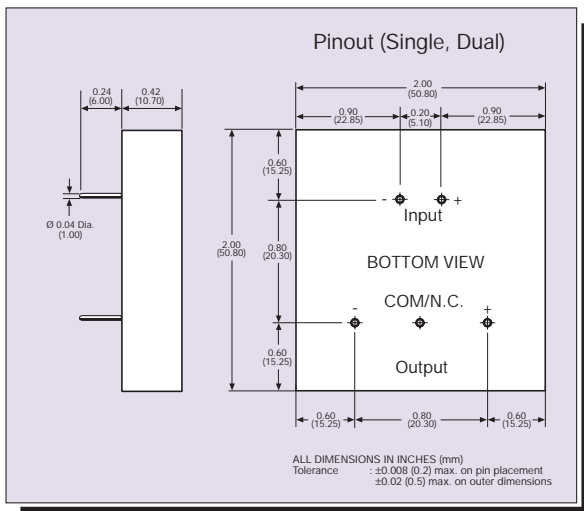
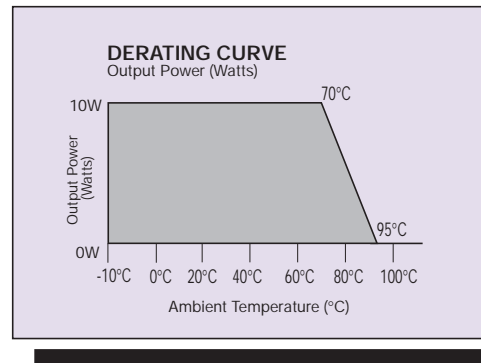
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# 10 Watt Wide input DC/DC converters

INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT	TYPICAL EFFICIENCY	REGULATION (TYP.)		MODEL NUMBER
					LINE	LOAD	
10-36VDC	3.3V	2000mA	381mA	72%	±0.1%	±0.2%	LPD10-24S3V3-C
10-36VDC	5.0V	2000mA	540mA	77%	±0.1%	±0.1%	LPD10-24S05-C
10-36VDC	12V	800mA	512mA	78%	±0.1%	±0.1%	LPD10-24S12-C
10-36VDC	15V	660mA	512mA	78%	±0.1%	±0.1%	LPD10-24S15-C
10-36VDC	±12V	±400mA	512mA	78%	±0.1%	±0.1%	LPD10-24D12-C
10-36VDC	±15V	±300mA	512mA	78%	±0.1%	±0.1%	LPD10-24D15-C
10-36VDC	5V/±12V	1000mA/±200mA	510mA	80%	±1.0%	±3.0%	LPD10-24T05-12
10-36VDC	5V/±15V	1000mA/±160mA	510mA	80%	±1.0%	±3.0%	LPD10-24T05-15
20-72VDC	3.3V	2000mA	190mA	72%	±0.1%	±0.1%	LPD10-48S3V3-C
20-72VDC	5.0V	2000mA	267mA	78%	±0.1%	±0.1%	LPD10-48S05-C
20-72VDC	12V	800mA	253mA	79%	±0.1%	±0.1%	LPD10-48S12-C
20-72VDC	15V	660mA	253mA	79%	±0.1%	±0.1%	LPD10-48S15-C
20-72VDC	±12V	±400mA	253mA	79%	±0.1%	±0.1%	LPD10-48D12-C
20-72VDC	±15V	±300mA	253mA	79%	±0.1%	±0.1%	LPD10-48D15-C
20-72VDC	5V/±12V	1000mA/±200mA	255mA	80%	±1.0%	±3.0%	LPD10-48T05-12
20-72VDC	5V/±15V	1000mA/±160mA	255mA	80%	±1.0%	±3.0%	LPD10-48T05-15

**Notes**

- Cross regulation:  
 Duals: output 1, full load, 4.0%; output 2, minimum load, 4.0%.  
 Triples: output 1, full load, 2.0%; output 2 vs. output 3, 2.0%;  
 Triples: outputs 2 and 3 vs. output 1, 5.0%.
- All 3V3 outputs, 1 minute max.



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