

1KV Isolated 1W dual separated output DIP8 DC/DC Converter



FEATURES

- ◆ 8 Pin DIP Package
- ◆ Low ripple and noise
- ◆ High efficiency up to 82%
- ◆ Input / Output Isolation 1000VDC
- ◆ Pin compatible with multiple manufactures
- ◆ Operating temperature -40°C to + 85°C
- ◆ Short circuit protection(automatic recovery)
- ◆ No external component required
- ◆ MTBF>1,000,000 hours
- ◆ RoHS Compliance

MODEL SELECTION

D^①05^②0505^③X^④MD^⑤

- ① Product Series
- ② Input Voltage
- ③ Output Voltage
- ④ Fixed Input
- ⑤ MINI DIP8 Package

APPLICATIONS

The D-XMD series are specially designed for applications where a group of polar power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) where the voltage of the input power supply is fixed (voltage variation $\leq \pm 10\%$);
- 2) where isolation is necessary between input and output (isolation voltage $\leq 1000\text{VDC}$);
- 3) where the regulation of the output voltage and the output ripple noise are not demanded.



SELECTION GUIDE

Model	INPUT VOLTAGE (V)	OUTPUT VOLTAGE (V)	OUTPUT CURRENT MAX	ISOIATION (VDC)	MAX CAPACITIVE Load	EFFICIEN CY (%)
D050303XMD	4.5-5.5	3.3 / 3.3	150 / 150	1000	220	63
D050505XMD	4.5-5.5	5 / 5	100 / 100	1000	220	72
D050707XMD	4.5-5.5	7.2 / 7.2	70 / 70	1000	220	75
D050909XMD	4.5-5.5	9 / 9	55 / 55	1000	220	78
D051212XMD	4.5-5.5	12 / 12	42 / 42	1000	220	80
D051515XMD	4.5-5.5	15 / 15	34 / 34	1000	220	80
D051818XMD	4.5-5.5	18 / 18	28 / 28	1000	220	78
D052424XMD	4.5-5.5	24 / 24	21 / 21	1000	220	78
D120303XMD	10.8-13.2	3.3 / 3.3	150 / 150	1000	220	70
D120505XMD	10.8-13.2	5 / 5	100 / 100	1000	220	72
D120707XMD	10.8-13.2	7.2 / 7.2	70 / 70	1000	220	71
D120909XMD	10.8-13.2	9 / 9	55 / 55	1000	220	76
D121212XMD	10.8-13.2	12 / 12	42 / 42	1000	220	80
D121515XMD	10.8-13.2	15 / 15	34 / 34	1000	220	80
D121818XMD	10.8-13.2	18 / 18	28 / 28	1000	220	76
D122424XMD	10.8-13.2	24 / 24	21 / 21	1000	220	78
D240303XMD	21.6-26.4	3.3 / 3.3	150 / 150	1000	220	76
D240505XMD	21.6-26.4	5 / 5	100 / 100	1000	220	72
D240707XMD	21.6-26.4	7.2 / 7.2	70 / 70	1000	220	73
D240909XMD	21.6-26.4	9 / 9	55 / 55	1000	220	77
D241212XMD	21.6-26.4	12 / 12	42 / 42	1000	220	82
D241515XMD	21.6-26.4	15 / 15	34 / 34	1000	220	82
D241818XMD	21.6-26.4	18 / 18	28 / 28	1000	220	75
D242424XMD	21.6-26.4	24 / 24	21 / 21	1000	220	80

add Suffix "P" for Continuous Short Circuit Protection, e.g. B0505XMDP

Input Specifications				
Parameters	Nominal	Typical	Maximum	Units
Voltage range	5	4.5-5.5		VDC
	12	10.8-13.2		VDC
	24	21.6-26.4		VDC
Filter	Capacitor			
Turn on Transient process time			25	ms
Start up time		200		ms
Absolute Maximum Rating	5 Vin	0-7		VDC
	12 Vin	0-15		VDC
	24 Vin	0-28		VDC
Peak Input Voltage time		100		ms

Isolation Specifications				
Parameters	Nominal	Typical	Rated	Units
Tested I/O voltage	3 sec		1000 all models	VDC
Resistance		> 1000		MOhm
Capacitance		60		pF

Output Specifications				
Parameters	Nominal	Typical	Maximum	Units
Maximum		±3		%
Short Circuit protection	Momentary (1 sec)			
Line voltage regulation (Single)	For 1% change of Vin	±1.2		%
Line voltage regulation (Dual)	For 1% change of Vin	±1.2		%
Load voltage regulation (Single)	Load 20 – 100%	±10		%
Load voltage regulation (Single) 3.3V output model	Load 20 – 100%	±20		%
Load voltage regulation (Dual)	Load 20 – 100%	±10		%
Load voltage regulation (Dual) 3.3V output model	Load 20 – 100%	±20		%
Temperature coefficient		±0.02		%/°C
Ripple & Noise	At 20MHz Bandwidth	100		mV p-p
Rising time		50		ms

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	80		KHz
Operating temperature	Full Load without Derating	-40 to+85		°C
Storage temperature		-55 to +125		°C
Max Case temperature			90	°C
Cooling	Free air convection			
Humidity			90	%
Case material	Non-conductive black plastic			
Weight		1.8		g
Dimensions (L x W x H)	0.50 x 0.40 x 0.27 inches		12.70 x 10.16 x 6.85 mm	
MTBF	>1 191 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)			

NOTE: All specifications in this data sheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified

Safety Specifications	
Parameters	
Agency approvals	CE
Standards	EN55022 (Radiated Emissions) class B
	EN55024 (Noise Immunity), IEC61000-4-2(ESD) IEC61000-4-3 (Radiated Immunity)

Dimensions

Top View: 12.70 (0.50) mm width, 10.16 (0.40) mm height. Pin 1 to 4 spacing: 7.62 (0.30) mm. Pin 5 to 8 spacing: 7.62 (0.30) mm. Pin 1 to 5 spacing: 0.50 (0.02) mm. Pin 4 to 8 spacing: 2.54 (0.10) mm.

Bottom View: Shows pin layout with labels 1, 4, 5, 6, 7, 8.

Side View: Total height 6.85 (0.27) mm. Pin height 3.05 (0.12) mm. Pin pitch 2.54 (0.10) mm. Pin width 0.50 (0.02) mm.

Note:
Unit: mm[inch]
Pin section tolerances: $\pm 0.10\text{mm} [\pm 0.004\text{inch}]$
General tolerances: $\pm 0.25\text{mm} [\pm 0.010\text{inch}]$

TUBE OUTLINE DIMENSIONS

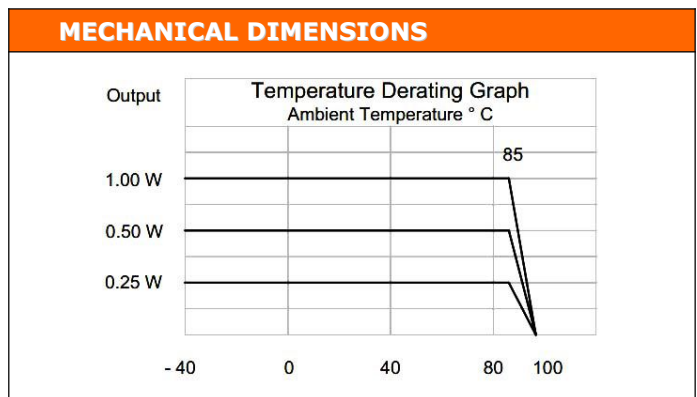
Top width: 12.50 [0.492] mm
Bottom width: 3.50 [0.138] mm
Left height: 10.50 [0.413] mm
Right height: 16.50 [0.650] mm

Unit :mm[inch]
General tolerances: $\pm 0.50\text{mm} [\pm 0.020\text{inch}]$
L=530mm[20.866inch] Devices per tube: 40pcs
L=220mm[8.661 inch] Devices per tube: 16pcs

RECOMMENDED FOOTPRINT

Grid: 2.54*2.54mm
Hole diameter: $\varnothing 1.00 [0.059]$

Note: grid 2.54*2.54mm



PIN CONNECTIONS

PIN	D-XMD
1	- V Input
4	+ V Input
5	+ V1 Output
6	- V1 Output
7	+ V2 Output
8	- V2 Output

RoHS COMPLIANT INFORMATION

This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300° C for 10 seconds.
The pin termination finish on the SIP package type is Tin Plate, Hot Dipped over Matte Tin with Nickel Preplate. The DIP types are Matte Tin over Nickel Preplate. Both types in this series are backward compatible with Sn/Pb soldering systems.

REACH COMPLIANT INFORMATION

This series has proven that this product does not contain harmful chemicals, it also has harmful chemical substances through the registration, inspection and approval.