Size: 0.64in x 0.37in x 0.34in (16.3mm x 9.3mm x 8.6mm)

FEATURES

- Industrial SMD Package
- I/O Isolation 3000VDC
- Water-Washable Process Available
- Tape & Reel Package Available
- High Efficiency
- Qualifies for Lead-Free Reflow Solder Process According to IPC/JEDEC J-STD-020D.1
- Over Load and Short Circuit Protection
- UL/cUL 60950-1, IEC/EN 60950-1, UL/cUL 62368-1, and IEC/EN 62368-1 Pending Safety Approvals

DESCRIPTION

The DCMSPU01H series of DC DC converters offers 1 watt of output power in a compact 0.64" x 0.37" x 0.34" industrial SMD package. This series consists of both single and dual output models and 3.3VDC, 5VDC, or 12VDC input options. Other options are available for this series such as a water-washable process and a tape and reel package. Each model in this series has I/O isolation of 3000VDC, high efficiency, and over load and short circuit protection. This series qualifies for lead-free reflow solder process according to IPC/JEDEC J-STD-020D.1 and has UL/cUL 60950-1, IEC/EN 60950-1, UL/cUL 62368-1, and IEC/EN 62368-1 safety approvals. Please call factory for order details.

MODEL SELECTION TABLE

Single Output Models

Model Number(7)	Input Voltage Range	Output Voltage	Output Current		Input Current		Output Power	Load Regulation (Max.)	Efficiency (@Max Load)
			Min Load	Max Load	@No Load	@Max. Load			
DCMSPU01-033S033H	3.3VDC (2.97~3.63)	3.3VDC	6mA	300mA	45mA	390mA	1W	15%	77%
DCMSPU01-033S05H		5VDC	4mA	200mA		384mA		12%	79%
DCMSPU01-033S12H		12VDC	1.68mA	84mA		377mA		10%	81%
DCMSPU01-033S15H		15VDC	1.34mA	67mA		381mA		9%	80%
DCMSPU01-05S033H	5VDC (4.5~5.5)	3.3VDC	6mA	300mA	30mA	251mA	1W	12%	79%
DCMSPU01-05S05H		5VDC	4mA	200mA		244mA		11%	82%
DCMSPU01-05S12H		12VDC	1.68mA	84mA		240mA		7%	84%
DCMSPU01-05S15H		15VDC	1.34mA	67mA		236mA		7%	85%
DCMSPU01-12S033H	12VDC (10.8~13.2)	3.3VDC	6mA	300mA	17mA	106mA	1W	9%	78%
DCMSPU01-12S05H		5VDC	4mA	200mA		103mA		8%	81%
DCMSPU01-12S12H		12VDC	1.68mA	84mA		101mA		6%	83%
DCMSPU01-12S15H		15VDC	1.34mA	67mA		101mA		6%	83%

MODEL SELECTION TABLE

Single Output Models

Model Number(7)	Input Voltage Range	Output Voltage	Output Current		Input Current		Output Power	Load Regulation (Max.)	Efficiency (@Max Load)
			Min Load	Max Load	@No Load	@Max. Load			
DCMSPU01-033D05H	3.3VDC (2.97~3.63)	±5VDC	±2mA	±100mA	45mA	384mA	1W	12%	79%
DCMSPU01-033D12H		±12VDC	±0.84mA	±42mA		377mA		9%	81%
DCMSPU01-033D15H		±15VDC	±0.66mA	±33mA		375mA		9%	80%
DCMSPU01-05D05H	5VDC (4.5~5.5)	±5VDC	±2mA	±100mA	30mA	244mA	1W	11%	82%
DCMSPU01-05D12H		±12VDC	±0.84mA	±42mA		240mA		7%	84%
DCMSPU01-05D15H		±15VDC	±0.66mA	±33mA		236mA		7%	84%
DCMSPU01-12D05H	12VDC (10.8~13.2)	±5VDC	±2mA	±100mA	17mA	102mA	1W	7%	82%
DCMSPU01-12D12H		±12VDC	±0.84mA	±42mA		101mA		6%	83%
DCMSPU01-12D15H		±15VDC	±0.66mA	±33mA		99mA		6%	83%

SPECIFICATIONS

All specifications are based on 25°C, Nominal Input Voltage, Resistive Load and Rated Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
INPUT SPECIFICATIONS						
Input Voltage Range	3.3V Input Models		2.97	3.3	3.63	VDC
	5V Input Models		4.5	5	5.5	
	12V Input Models		10.8	12	13.2	
Input Surge Voltage (1 sec. max)	3.3V Input Models		-0.7		6	VDC
	5V Input Models		-0.7		9	
	12V Input Models		-0.7		18	
Input Filter			Internal Capacitor Type			
OUTPUT SPECIFICATIONS						
Output Voltage			See Table			
Voltage Accuracy					±3.0	%Vnom.
Line Regulation	For Vin Change of 1%			±1.2	±1.5	%
Load Regulation	Io=10% to 100%		See Table			
Voltage Balance	Dual Output, Balanced Loads			±0.1	±1.0	%
Output Power			See Table			
Output Current			See Table			
Maximum Capacitive Load	Single Output Models			220		µF
	Dual Output Models			100		
Ripple & Noise (20MHz bandwidth)	0-20MHz Bandwidth			65	100	mVp-p
Temperature Coefficient				±0.01	±0.02	%/ºC
PROTECTION						
Short Circuit Protection			Continuous, Automatic Recovery			
Over Load Protection	Normal Vin at 25ºC			160		%
ENVIRONMENTAL SPECIFICATIONS						
Operating Ambient Temperature	Natural Convection		-40		+85	ºC
Case Temperature					+95	ºC
Storage Temperature			50		+125	ºC
Humidity	Non-Condensing				95	%RH
Cooling			Natural Convection			
Lead-Free Reflow Solder Process			IPC/JEDEC J-STD-020D.1			
MTBF (Calculated)	MIL-HDBK-217F@25ºC, Ground Benign		3,657,000			Hours
Moisture Sensitivity Level (MSL)	IPC/JEDEC J-STD-020D.1		Level 2			
GENERAL SPECIFICATIONS						
Efficiency			See Table			
Switching Frequency			50	80	110	KHz
Isolation Voltage	60 Seconds		3000			VDC
Isolation Resistance	500VDC		10			GΩ
Isolation Capacitance	100KHz, 1V			20		pF
PHYSICAL SPECIFICATIONS						
Weight			0.067oz (1.9g)			
Dimensions (L x W x H)			0.67in x 0.37in x 0.34in (16.3mm x 9.3mm x 8.6mm)			
Case Material			Non-Conductive Black Plastic (flammability to UL 94V-0 rated)			
Pin Material			Phosphor Bronze			
SAFETY CHARACTERISTICS						
Safety Approvals (Pending)	UL/cUL 60950-1 recognition (UL certificate), IEC/EN 60950-1 (CB-report) UL/cUL 62368-1 recognition (UL certificate), IEC/EN 62368-1 (CB-report)					
EMI[4]	Conduction	EN55022, FCC part 15	Class A			
ESD	EN55024					
	ESD	EN61000-4-2 Air±8kV, Contact±6kV	A			
	Radiated Immunity	EN61000-4-3 10V/m	A			
	Fast Transient[5]	EN61000-4-4 ±2kV	A			
	Surge[5]	EN61000-4-5 ±1kV	A			
	Conducted Immunity	EN61000-4-6 10Vrms	A			
	PFMF	EN61000-4-8 3A/m	A			

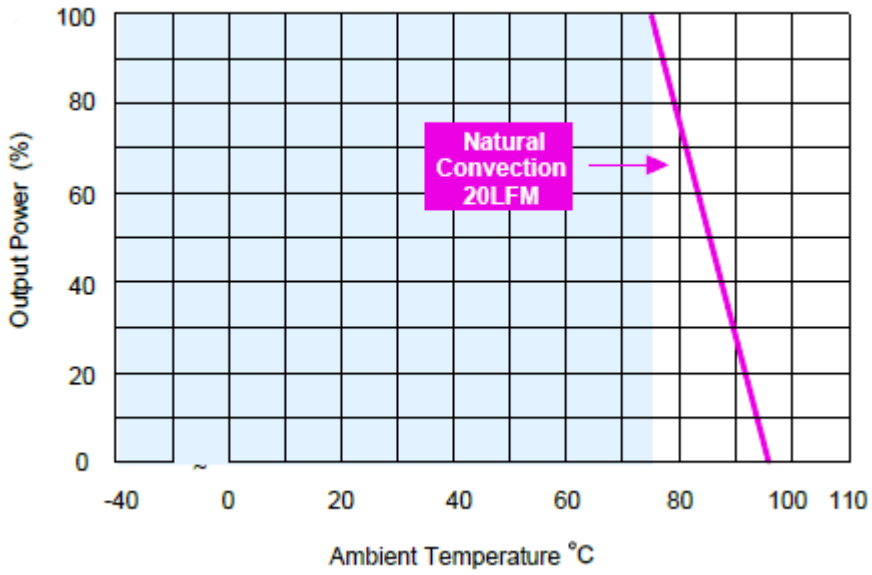
NOTES

1. These power converters require a minimum output loading to maintain specified regulation, operation under no-load conditions will not damage these modules; however they may not meet all specifications listed.
2. We recommend protecting the converter by a fast blow fuse in the input supply line.
3. Other inputs and output voltages may be available, please contact factory.
4. To meet EN55022 Class A, an external filter is necessary. Please contact factory.
5. To meet EN61000-4-4 & EN61000-4-5 an external capacitor across the input pins is required. Suggested capacitor: 1800µF/50V KY Al-E Cap.
6. Natural convection is about 20LFM but is not equal to still air (0 LFM).]
7. For Water-Washable process, add "W" to end of model number.

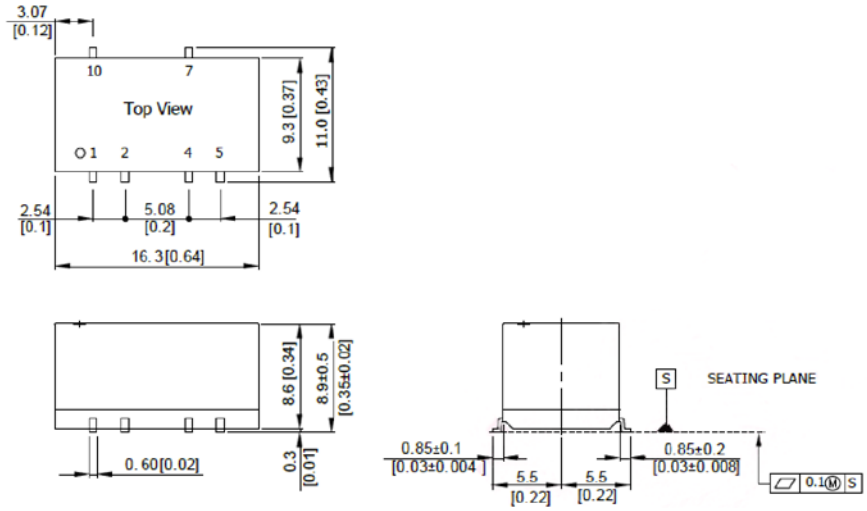
**Due to advances in technology, specifications subject to change without notice.*

DERATING CURVES

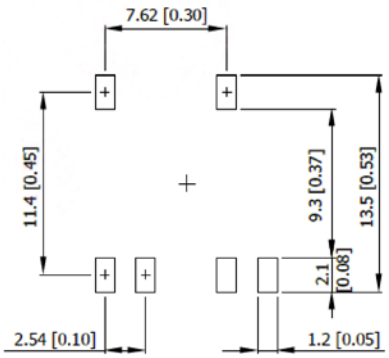
Power Derating Curve



MECHANICAL DRAWINGS



Connecting Pin Patterns



All dimensions in mm (inches)
Tolerance: x.x±0.5 (x.xx±0.02)
x.xx±0.25 (x.xxx±0.01)
Pin ±0.05 (±0.002)

Pin Connections

Pin	Single Output	Dual Output
1	-Vin	-Vin
2	+Vin	+Vin
3	No Pin	No Pin
4	-Vout	Common
5	No Pin	-Vout
6	No Pin	No Pin
7	+Vout	+Vout
8	No Pin	No Pin
9	No Pin	No Pin
10	NC	NC

NC: No Connection

COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001-2008 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

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