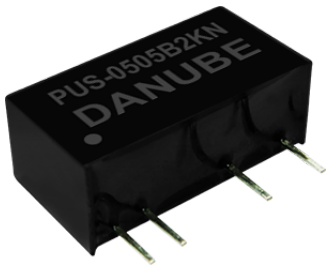
PU-2N SERIES

2W DC-DC Unregulated Converter



■ FEATURES

- Industrial standard SIP-7 package
- Operating temperature range -40°C ~ +105°C
- Low no load input current
- Continuous short circuit protection
- Isolation voltage 1500VDC or 3000VDC
- Efficiency up to 87%
- 3 years warranty

■ APPLICATIONS

- Automation equipment
- Power supplies
- Industrial PC
- Data communications
- Distributed power system

■ DESCRIPTION

PU-2N series is an unregulated 2 Watt DC/DC converter in standard SIP-7 plastic package, with ±10% input voltage range. It features isolated voltage of 3000VDC, extremely low no load current, wide working temperature range from -40~ +105°C, and suits all kinds of systems like industrial control, automation field, and so on.

■ MODEL ENCODING

PU	S	-	05	05	A	2	K	N
Series Name	Output Quantity		Input Voltage	Output Voltage	Package	Wattage	Function	New Series
	S : Single D : Dual		05 : 4.5~5.5V 12 : 10.8~13.2V 24 : 21.6~26.4V	03.3 : 3.3V 05 : 5V；±5V 09 : 9V；±9V 12 : 12V；±12V 15 : 15V；±15V 24 : 24V	A B		Blank : 1500VDC Isolation K : 3000VDC Isolation	:

■ MODEL SELECTION TABLE(2W OUTPUT POWER)

MODEL NUMBER	INPUT				OUTPUT		EFF. (%)	CAPACITOR LOAD (Max.)
	VOLTAGE (VDC)		CURRENT (mA)		VOLTAGE (VDC)	CURRENT (mA)		
	NOMINAL	RANGE	NO LOAD	FULL LOAD				
PUS-0503.3A2N	5	4.5~5.5	20	500	3.3	600	80	470uF
PUS-0505A2N	5	4.5~5.5	20	470	5	400	85	470uF
PUS-0509A2N	5	4.5~5.5	20	470	9	222	85	220uF
PUS-0512A2N	5	4.5~5.5	20	470	12	167	85	220uF
PUS-0515A2N	5	4.5~5.5	20	465	15	133	86	220uF
PUS-0524A2N	5	4.5~5.5	20	465	24	84	86	100uF
PUD-0505A2N	5	4.5~5.5	20	470	±5	±200	85	220uF
PUD-0509A2N	5	4.5~5.5	20	470	±9	±111	85	100uF
PUD-0512A2N	5	4.5~5.5	20	470	±12	±84	85	100uF
PUD-0515A2N	5	4.5~5.5	20	465	±15	±67	86	100uF
PUS-1203.3A2N	12	10.8-13.2	10	208	3.3	600	80	470uF
PUS-1205A2N	12	10.8-13.2	10	192	5	400	87	470uF
PUS-1209A2N	12	10.8-13.2	10	192	9	222	87	220uF
PUS-1212A2N	12	10.8-13.2	10	192	12	167	87	220uF
PUS-1215A2N	12	10.8-13.2	10	192	15	133	87	220uF
PUS-1224A2N	12	10.8-13.2	10	192	24	84	87	100uF
PUD-1205A2N	12	10.8-13.2	10	192	±5	±200	87	220uF
PUD-1209A2N	12	10.8-13.2	10	192	±9	±111	87	100uF
PUD-1212A2N	12	10.8-13.2	10	192	±12	±84	87	100uF
PUD-1215A2N	12	10.8-13.2	10	192	±15	±67	87	100uF
PUS-2403.3A2N	24	21.6-26.4	7	104	3.3	600	80	470uF
PUS-2405A2N	24	21.6-26.4	7	98	5	400	85	470uF
PUS-2409A2N	24	21.6-26.4	7	98	9	222	85	220uF
PUS-2412A2N	24	21.6-26.4	7	98	12	167	85	220uF
PUS-2415A2N	24	21.6-26.4	7	98	15	133	85	220uF
PUS-2424A2N	24	21.6-26.4	7	98	24	84	85	100uF
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PUD-2409A2N	24	21.6-26.4	7	98	±9	±111	85	100uF
PUD-2412A2N	24	21.6-26.4	7	98	±12	±84	85	100uF
PUD-2415A2N	24	21.6-26.4	7	98	±15	±67	85	100uF

Note: Efficiency and input current are measured at nominal input voltage and full load.
Other input to output voltages may be available. Please contact factory.

■ MODEL SELECTION TABLE(2W OUTPUT POWER)

MODEL NUMBER	INPUT				OUTPUT		EFF. (%)	CAPACITOR LOAD (Max.)
	VOLTAGE (VDC)		CURRENT (mA)		VOLTAGE (VDC)	CURRENT (mA)		
	NOMINAL	RANGE	NO LOAD	FULL LOAD				
PUS-0503.3B2KN	5	4.5~5.5	20	500	3.3	600	80	470uF
PUS-0505B2KN	5	4.5~5.5	20	470	5	400	85	470uF
PUS-0509B2KN	5	4.5~5.5	20	470	9	222	85	220uF
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PUS-1224B2KN	12	10.8-13.2	10	192	24	84	87	100uF
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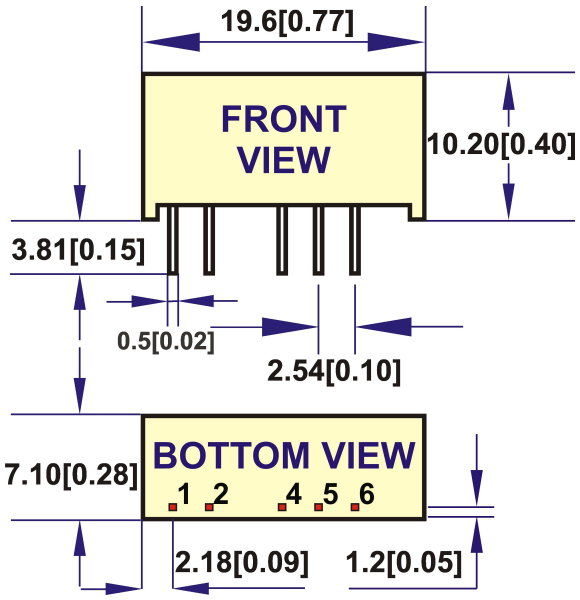
Note: Efficiency and input current are measured at nominal input voltage and full load.
Other input to output voltages may be available. Please contact factory.

■ SPECIFICATION

INPUT	Voltage Range	5 : 4.5~5.5V ; 12 : 10.8~13.2V ; 24 : 21.6~26.4V		
	Surge Voltage(100ms max.)	5Vin models : 9Vdc ; 12Vin models : 18Vdc ; 24Vin models : 30Vdc		
	Filter	Internal capacitor		
	Protection	Fuse recommended (see page 8)		
OUTPUT	Voltage Accuracy	±3% max.		
	Rated Power	2W		
	Ripple & Noise[1]	100mVp-p max.		
	Line Regulation[2]	±1.2% (other output) , (for 1% input variation) ±1.5% (3.3Vdc output) , (for 1% input variation)		
	Load Regulation[3]	15%		
	Switching Frequency	200KHz min.		
	Minimum Load	10% of full load		
PROTECTION	Short Circuit	Continuous , automatic recovery		
ENVIRONMENT	Cooling	Free-air convection		
	Working Temperature	-40~ +105°C (refer to “Derating Curve”)		
	Case Temperature	+115°C max.		
	Working Humidity	5% ~ 95% RH non-condensing		
	Storage Temp., Humidity	-55 ~ +125°C, 10 ~ 95% RH non-condensing		
	Temperature Coefficient	±0.05% / °C		
	Soldering Temperature	1.5mm from case of 3~5 sec./265°C(max.)		
	Vibration	10~500Hz, 2G 10min./1cycle, period for 60 min. each along X, Y, Z axes		
SAFETY & EMC	Isolation Voltage[4]	I/P-O/P : 1500VDC or 3000VDC		
	Isolation Resistance	I/P-O/P : 1000M Ohms / 500VDC / 25°C / 70% RH		
	Isolation Capacitance	50pF typ.		
	EMC Emission	**Parameter**	**Standard**	**Test Level / Note**
		Conducted	EN55032(CISPR32)	N/A
		Radiated	EN55032(CISPR32)	Class B
	EMC Immunity	**Parameter**	**Standard**	**Test Level / Note**
		ESD	BS IEC 61000-4-2	Air 8KV
		Radiated Susceptibility	BS IEC 61000-4-3	3V/m
		EFT/Burst	BS IEC 61000-4-4	0.5KV/5KHz
		Surge	BS IEC 61000-4-5	0.5KV/Line-Line
		Conducted	BS IEC 61000-4-6	3Vrms
		Magnetic field immunity	BS IEC 61000-4-8	1A/m
OTHERS	MTBF[5]	>2,000,000Hours		
	Weight	2.3g typ.		
	Dimension(L*W*H)	19.6mm*7.1mm*10.2mm		
	Case Material	Non-conductive plastic		
NOTE	[1] Ripple & noise are measured at 20MHz with 1uF ceramic capacitor connect to the output pins. [2] High line to low line at rated load. [3] Load regulation is for output load current change from 10% to 100%. [4] 1500VDC for 10 seconds, 3000VDC for 3 seconds. [5] MIL-HDBK-217F @25 °C, Ground Benign. *All specifications are measured at Ta=25°C, humidity < 75%, nominal input voltage, and rated output load unless otherwise specified.			

■ MECHANICAL SPECIFICATION

PACKAGE "A"



PIN CONNECTION		
PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
4	-Vout	-Vout
5	NP	Common
6	+Vout	+Vout

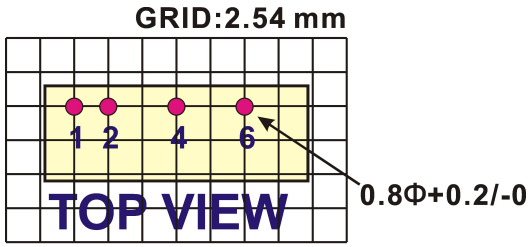
NP : No pin

All dimensions are in mm[Inches]

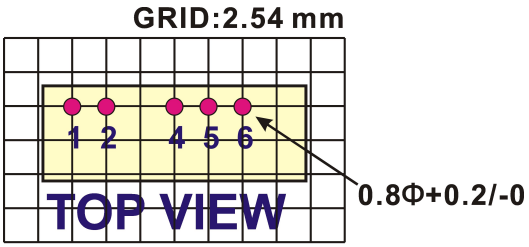
Pin size is 0.50x0.30mm[0.02"x0.01"]

Pin tolerance .XX= ±0.05mm

Tolerance .X or .XX= ±0.5mm

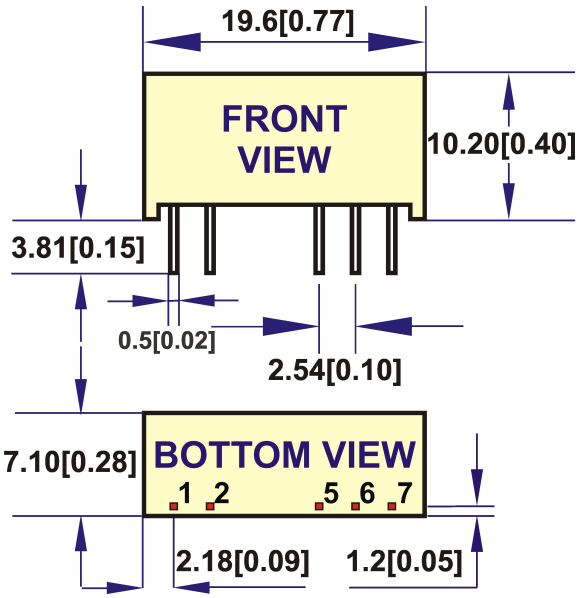


SINGLE OUTPUT



DUAL OUTPUT

PACKAGE "B"



PIN CONNECTION		
PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	NP	Common
7	+Vout	+Vout

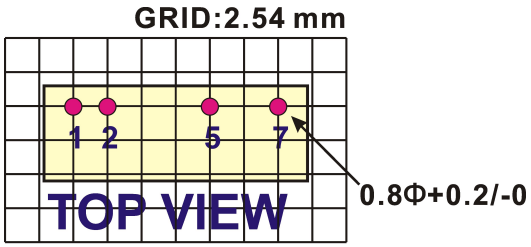
NP : No pin

All dimensions are in mm[Inches]

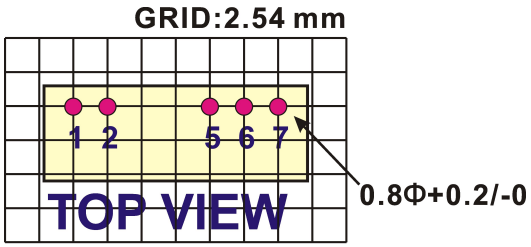
Pin size is 0.50x0.30mm[0.02"x0.01"]

Pin tolerance .XX= ±0.05mm

Tolerance .X or .XX= ±0.5mm



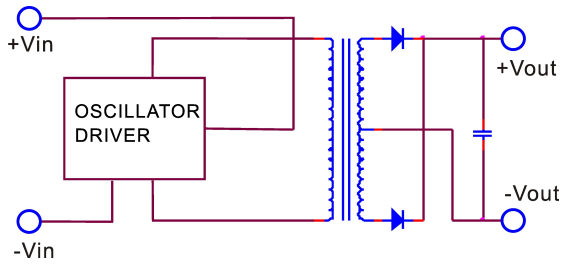
SINGLE OUTPUT



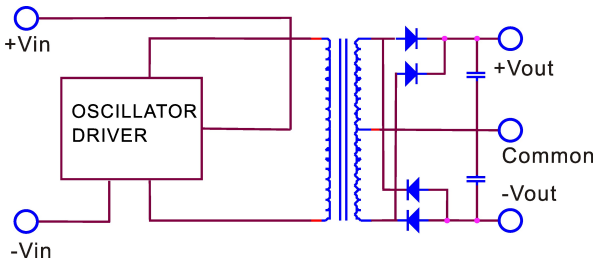
DUAL OUTPUT

SIMPLIFIED SCHEMATIC

Single output

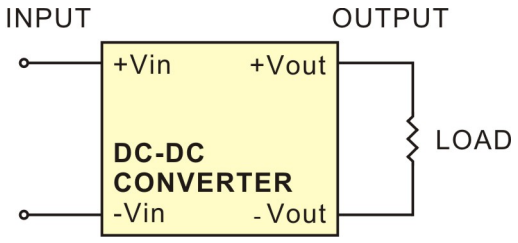


Dual output

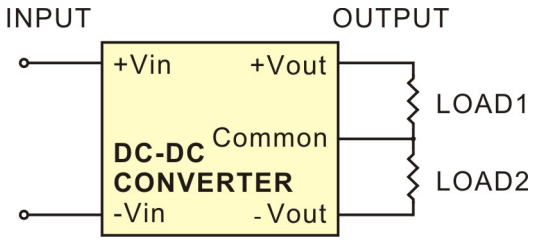


TYPICAL APPLICATIONS

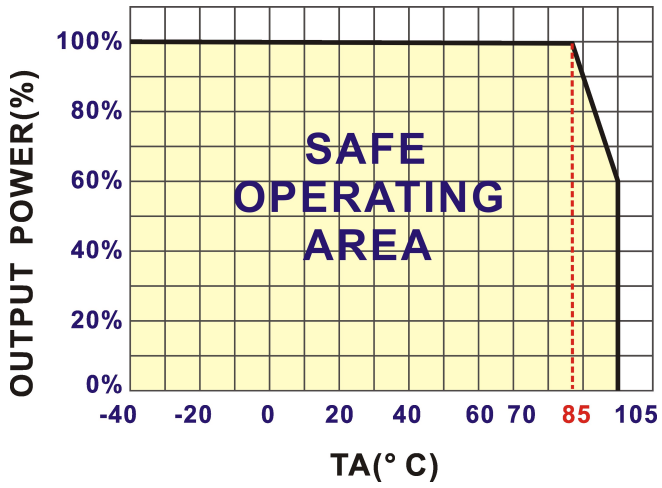
Single output



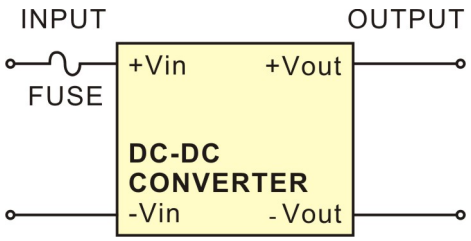
Dual output



DERATING CURVE



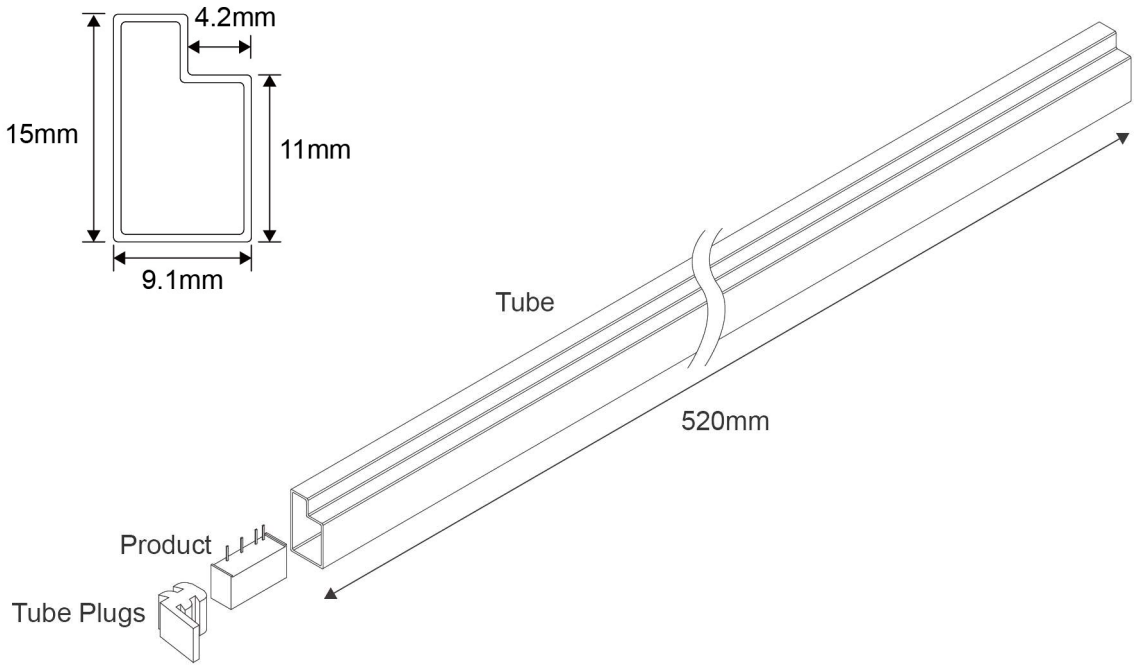
■ INPUT FUSE SELECTION GUIDE



MODEL NUMBER	INPUT VOLTAGE(VDC)	FUSE
PUX-05XXA2/B2	4.5~5.5V	1000mA Slow-Blow Type
PUX-12XXA2/B2	10.8~13.2V	500mA Slow-Blow Type
PUX-24XXA2/B2	21.6~26.4V	300mA Slow-Blow Type

Note: Certain applications may require the installation of external fuse in front of the input.

■ PACKAGING INFORMATION



Packaging Quantity: 25 pcs converter per tube

Danube **DANUBE ENTERPRISE CO., LTD.**
Tel: 886-7-3755165 **Fax:** 886-7-3755330
E-mail: danube@ms10.hinet.net