

PU-2W SERIES

2W UNREGULATED



FEATURES

- SINGLE IN LINE PACKAGE
- 2W UNREGULATED OUTPUT POWER
- 100% BURN IN
- HIGH EFFICIENCY
- INTERNAL SMD TECHNOLOGY
- LOW COST
- NO HEATSINK REQUIRED
- UL 94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- RoHS COMPLIANT



OUTPUT SPECIFICATIONS

Voltage Set-point Accuracy	+/-2% max
Temperature Coefficient	+/-0.05%/°C
Ripple & Noise(20MHz BW) ¹	100mVp-p max
Line Regulation ²	+/-1.2% max
Load Regulation ³	+/-8% max
Minimum Load	10% of Full Load
Short Circuit Protection	Momentary

INPUT SPECIFICATIONS

Input Voltage Range	+/-10% max
Input Filter	Capacitor Type
Protection	Fuse Recommended

GENERAL SPECIFICATIONS

Efficiency	70%-85%	
Isolation Voltage ⁴	1500 VDC min	Standard Models
	3000 VDC min	Suffix "D" Models
Isolation Resistance	10 ⁹ ohms min	
Isolation Capacitance	80pF max	
Switching Frequency	100KHz min	
MTBF ⁵	>1,800,000 Hours	
Weight	2.3g Typ	

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40 °C to +71 °C	Case Material	Non-Conductive Plastic
Storage Temperature	-55 °C to +125 °C	Case Size	19.6mm*7.1mm*10.2mm
Humidity	95% max	Conducted Emissions	EN55022 Class A
Cooling	Free-Air Convection	Radiated Emissions	EN55022 Class B

ALL SPECIFICATIONS TYPICAL AT NOMINAL LINE, FULL LOAD AND 25°C UNLESS OTHERWISE NOTED.

¹ Measured with 1uF ceramic capacitor connect to the output pins.

² Line Regulation is for a 1.0% change in input Voltage.

³ Load Regulation is for output load current change from 20% to 100%.

⁴ 1500VDC for 10 seconds, 3000VDC for 3 seconds.

⁵ MIL-HDBK-217F @25 °C , Ground Benign.

● SELECTION GUIDE(1) 2W OUTPUT

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ⁶ CURRENT(mA)		EFF (%) ⁷	ISOLATION (VDC)	PACKAGE
				FULL LOAD	NO LOAD			
PUS-03.305-2W	3.3	5	400	782	65	78	1500	C
PUS-03.324-2W	3.3	24	84	782	65	78	1500	C
PUS-0503.3-2W	5	3.3	500	452	60	73	1500	C
PUS-0505-2W	5	5	400	520	60	77	1500	C
PUS-0509-2W	5	9	222	506	60	79	1500	C
PUS-0512-2W	5	12	167	500	60	80	1500	C
PUS-0515-2W	5	15	133	488	60	82	1500	C
PUD-03.315-2W	3.3	+/-15	+/-67	740	65	82	1500	C
PUD-0505-2W	5	+/-5	+/-200	488	60	82	1500	C
PUD-0512-2W	5	+/-12	+/-84	500	60	80	1500	C
PUD-0515-2W	5	+/-15	+/-67	488	60	82	1500	C
PUD-0524-2W	5	+/-24	+/-42	504	60	79	1500	C
PUS-1203.3-2W	12	3.3	500	185	15	74	1500	C
PUS-1205-2W	12	5	400	214	15	78	1500	C
PUS-1209-2W	12	9	222	214	15	78	1500	C
PUS-1212-2W	12	12	167	200	15	83	1500	C
PUS-1215-2W	12	15	133	196	15	85	1500	C
PUD-1205-2W	12	+/-5	+/-200	214	15	78	1500	C
PUD-1212-2W	12	+/-12	+/-84	200	17	83	1500	C
PUD-1215-2W	12	+/-15	+/-67	196	15	85	1500	C
PUS-2403.3-2W	24	3.3	500	92	15	74	1500	C
PUS-2405-2W	24	5	400	107	15	78	1500	C
PUS-2409-2W	24	9	222	107	15	78	1500	C
PUS-2412-2W	24	12	167	104	15	80	1500	C
PUS-2415-2W	24	15	133	101	15	83	1500	C
PUD-2405-2W	24	+/-5	+/-200	107	15	78	1500	C
PUD-2412-2W	24	+/-12	+/-84	103	15	81	1500	C
PUD-2415-2W	24	+/-15	+/-67	103	15	81	1500	C

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: PUS-**-2W(2W SINGLE OUTPUT)**

PUD-**-2W(2W DUAL OUTPUT)**

⁶ NOMINAL INPUT VOLTAGE.

⁷ NOMINAL INPUT VOLTAGE, FULL LOAD.

● SELECTION GUIDE(2) 2W OUTPUT

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ⁸ CURRENT(mA)		EFF (%) ⁹	ISOLATION (VDC)	PACKAGE
				FULL LOAD	NO LOAD			
PUS-0503.3D-2W	5	3.3	500	452	60	73	3000	D
PUS-0505D-2W	5	5	400	520	60	77	3000	D
PUS-0509D-2W	5	9	222	510	60	78	3000	D
PUS-0512D-2W	5	12	167	500	60	80	3000	D
PUS-0515D-2W	5	15	133	492	60	81	3000	D
PUD-0505D-2W	5	+/-5	+/-200	520	60	77	3000	D
PUD-0509D-2W	5	+/-9	+/-111	512	60	78	3000	D
PUD-0512D-2W	5	+/-12	+/-84	500	60	80	3000	D
PUD-0515D-2W	5	+/-15	+/-67	488	60	82	3000	D
PUS-1203.3D-2W	12	3.3	500	185	15	74	3000	D
PUS-1205D-2W	12	5	400	210	15	79	3000	D
PUS-1209D-2W	12	9	222	210	15	79	3000	D
PUS-1212D-2W	12	12	167	205	15	81	3000	D
PUS-1215D-2W	12	15	133	200	15	83	3000	D
PUD-1205D-2W	12	+/-5	+/-200	214	15	78	3000	D
PUD-1212D-2W	12	+/-12	+/-84	203	15	82	3000	D
PUD-1215D-2W	12	+/-15	+/-67	200	15	83	3000	D
PUD-1218D-2W	12	+/-18	+/-55	199	20	83	3000	D
PUS-2403.3D-2W	24	3.3	500	92	15	74	3000	D
PUS-2405D-2W	24	5	400	108	15	77	3000	D
PUS-2409D-2W	24	9	222	108	15	77	3000	D
PUS-2412D-2W	24	12	167	104	15	80	3000	D
PUS-2415D-2W	24	15	133	102	15	82	3000	D
PUD-2405D-2W	24	+/-5	+/-200	107	15	78	3000	D
PUD-2412D-2W	24	+/-12	+/-84	103	15	81	3000	D
PUD-2415D-2W	24	+/-15	+/-67	102	15	82	3000	D

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: **PUS-****D-2W(2W SINGLE OUTPUT)**

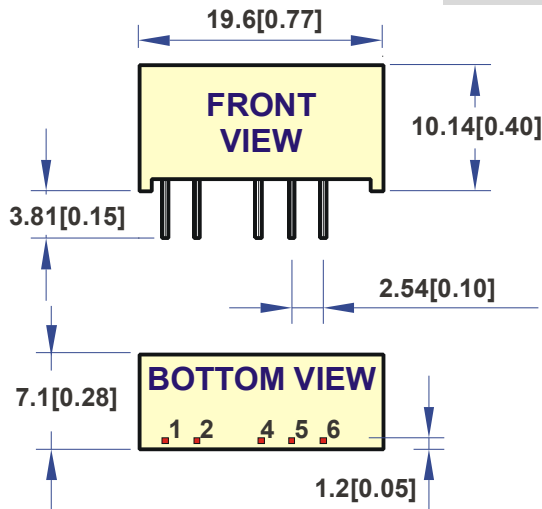
PUD-**D-2W(2W DUAL OUTPUT)**

⁸ NOMINAL INPUT VOLTAGE.

⁹ NOMINAL INPUT VOLTAGE, FULL LOAD.

● MECHANICAL DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS

PACKAGE "C"



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

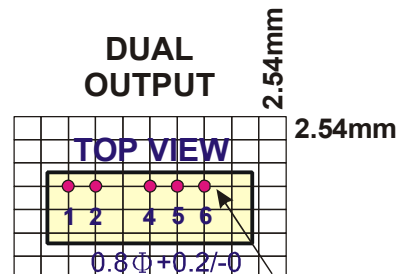
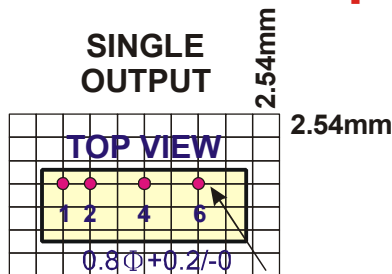
NOTE : All Dimensions In mm(Inches)

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

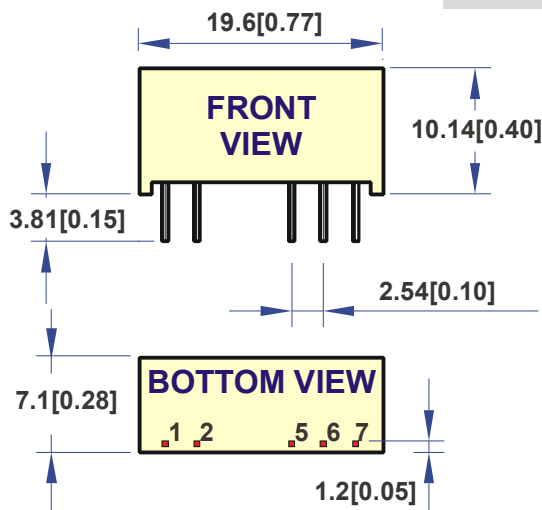
2. Pin is Tolerance .XX= ± 0.05 mm

3. Tolerance .X or .XX= ± 0.5 mm

All dimensions are in mm[inches]



PACKAGE "D"



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

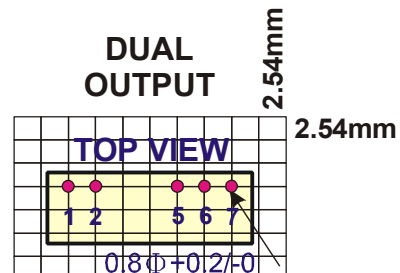
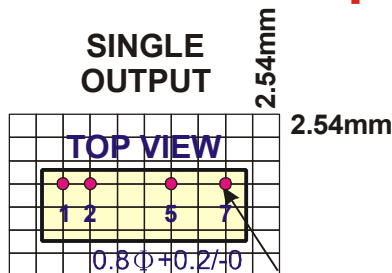
NOTE : All Dimensions In mm(Inches)

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

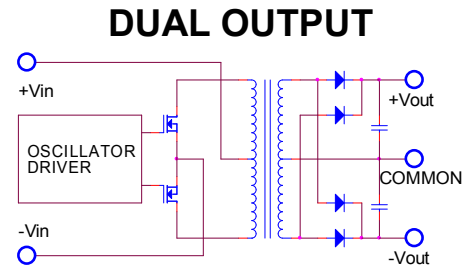
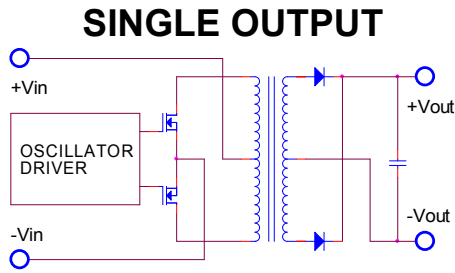
2. Pin is Tolerance .XX= ± 0.05 mm

3. Tolerance .X or .XX= ± 0.5 mm

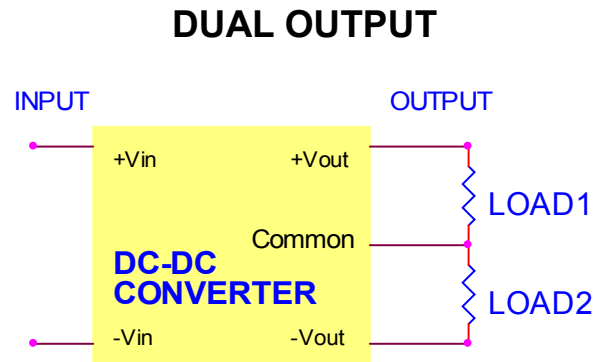
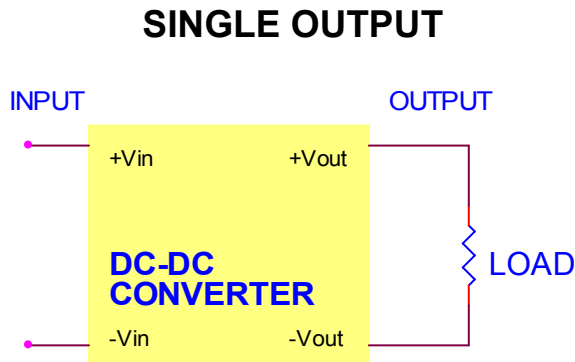
All dimensions are in mm[inches]



● SIMPLIFIED SCHEMATIC



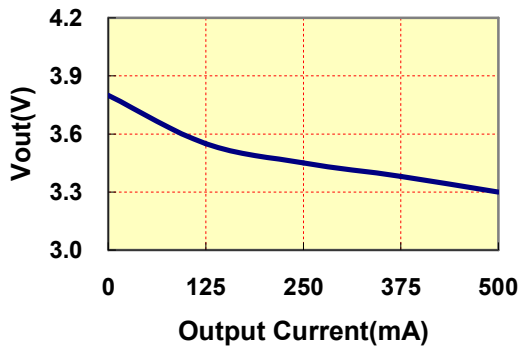
● TYPICAL APPLICATIONS



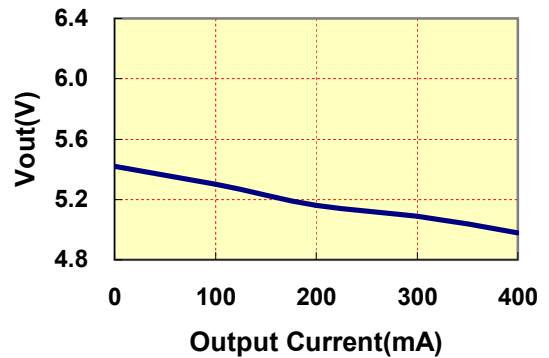
● TYPICAL PERFORMANCE CURVES

Specifications typical at $T_A=25^{\circ}\text{C}$, nominal input voltage, rated output current unless otherwise specified.

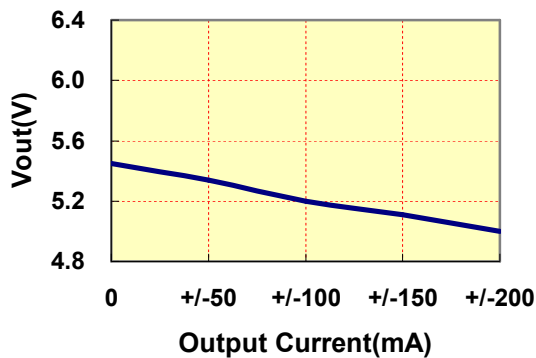
VOUT VS LOAD(3.3Vout Models)



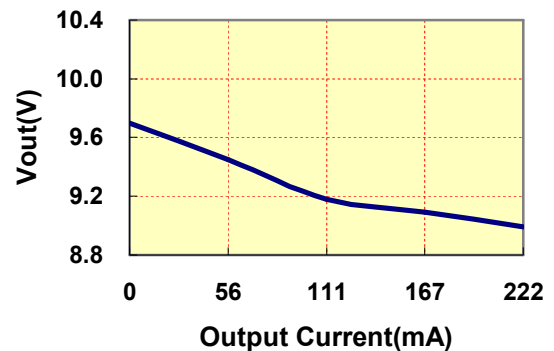
VOUT VS LOAD(5Vout Models)

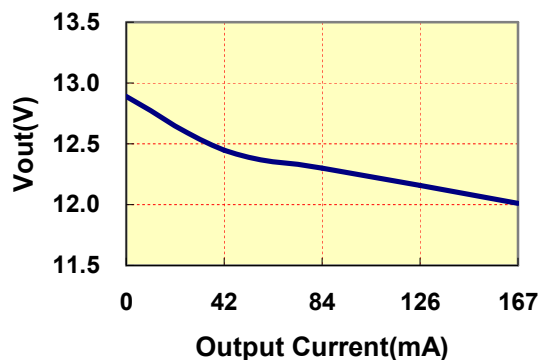
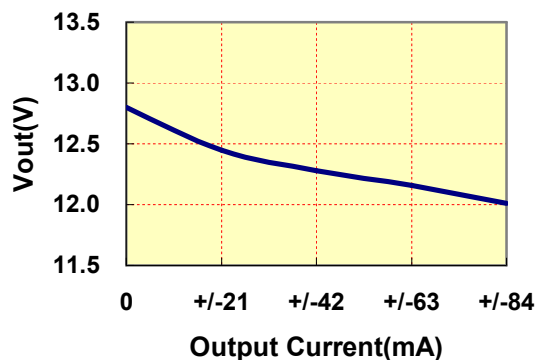
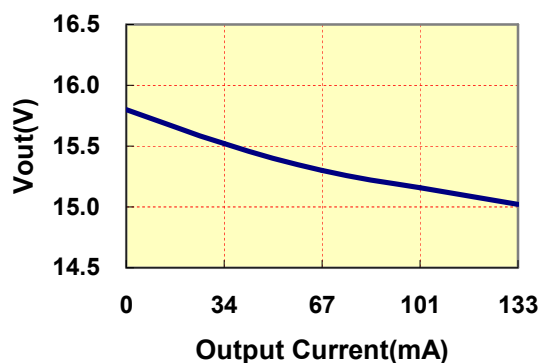
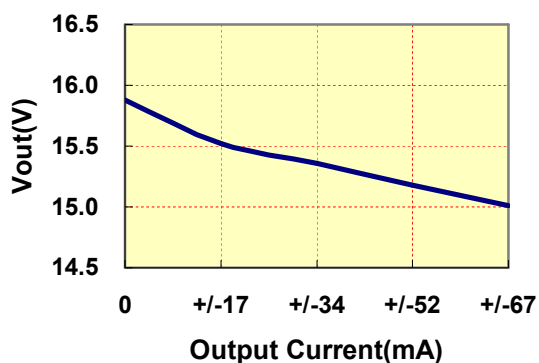
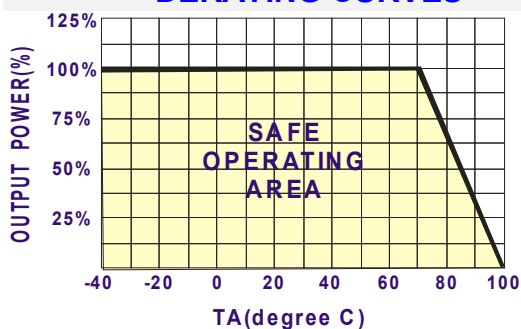
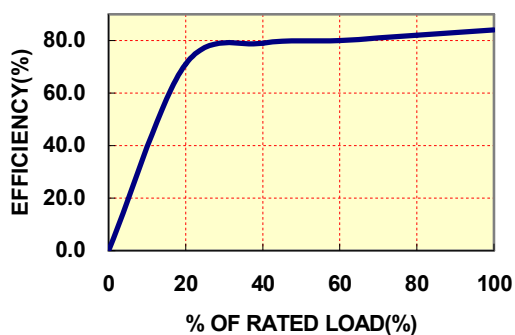


VOUT VS LOAD(+/- 5Vout Models)



VOUT VS LOAD(9Vout Models)



VOUT VS LOAD(12Vout Models)**VOUT VS LOAD(+/- 12Vout Models)****VOUT VS LOAD(15Vout Models)****VOUT VS LOAD(+/- 15Vout Models)****DERATING CURVES****EFFICIENCY VS LOAD**

● INPUT FUSE SELECTION GUIDE

2.97-3.63V	4.5-5.5V	10.8-13.2V	21.6-26.4V
INPUT VOLTAGE (VDC)	INPUT VOLTAGE (VDC)	INPUT VOLTAGE (VDC)	INPUT VOLTAGE (VDC)
1200mA Slow-Blow Type	800mA Slow-Blow Type	300mA Slow-Blow Type	170mA Slow-Blow Type

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

PU-2W SERIES APPLICATION NOTES:

EXTERNAL CAPACITANCE REQUIREMENTS:

Output filtering is required for operation. A minimum of 10uF is needed. Output capacitance may be increased for additional filtering, not to exceed 220uF.

To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5ohm from DC to 250KHz is required.

We Can Offer EMC-Filter According To EN55011/22 Class B.

Negative Outputs:

A negative output voltage may be obtained by connecting the +OUT to circuit ground and connecting -OUT as the negative output.