

SU SERIES

0.5W TO 2W UNREGULATED

DANUBE

FEATURES

- DUAL IN LINE PACKAGE
- 0.5 TO 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
- 3 YEARS WARRANTY



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.
	Output : 3.3V +/-12% max.
Minimum Load	10% of Full Load
Short Circuit Protection	Momentary

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-25 °C to +71 °C
Case Temperature	+90 °C max.
Storage Temperature	-55 °C to +125 °C
Humidity	95% max.
Cooling	Free-Air Convection

INPUT SPECIFICATIONS

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

GENERAL SPECIFICATIONS

Efficiency	70%-83%
Isolation Voltage ⁴	1500VDC min.
Isolation Resistance	10 ⁹ ohms min.
Isolation Capacitance	80pF max.
Switching Frequency	50KHz min.
MTBF ⁵	>2,000,000 Hours
Weight	3.1g typ.
Case Material	Non-Conductive Plastic
Case Size	22.6mm*9.9mm*8.9mm
Radiated Emissions	EN55032 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 For 10 seconds.

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

● **SELECTION GUIDE(1)**
0.5W OUTPUT

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ⁶ CURRENT(mA)		EFF (%) ⁷	ISOLATION (VDC)	OUTPUT POWER (Watt)
				FULL LOAD	NO LOAD			
SUS-0505-1	5	5	100	135	20	74	1500	0.5W
SUS-0509-1	5	9	56	137	22	73	1500	0.5W
SUS-0512-1	5	12	42	138	23	72	1500	0.5W
SUS-0515-1	5	15	34	140	25	71	1500	0.5W
SUS-1205-1	12	5	100	55	14	76	1500	0.5W
SUS-1209-1	12	9	56	56	15	74	1500	0.5W
SUS-1212-1	12	12	42	58	15	72	1500	0.5W
SUS-1215-1	12	15	34	58	15	72	1500	0.5W
SUS-2405-1	24	5	100	29	8	72	1500	0.5W
SUS-2409-1	24	9	56	28	6	74	1500	0.5W
SUS-2412-1	24	12	42	28	7	74	1500	0.5W
SUS-2415-1	24	15	34	29	7	72	1500	0.5W
SUS-4805-1	48	5	100	14	4	74	1500	0.5W
SUS-4809-1	48	9	56	14	5	74	1500	0.5W
SUS-4812-1	48	12	42	14	6	74	1500	0.5W
SUS-4815-1	48	15	34	14	6	74	1500	0.5W

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

⁶ NOMINAL INPUT VOLTAGE.

⁷ NOMINAL INPUT VOLTAGE, FULL LOAD.

● SELECTION GUIDE(2)

1W OUTPUT

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ⁸ CURRENT(mA)		EFF (%) ⁹	ISOLATION (VDC)	OUTPUT POWER (Watt)
				FULL LOAD	NO LOAD			
SUS-0503.3-2	5	3.3	300	270	35	74	1500	1W
SUS-0505-2	5	5	200	277	36	72	1500	1W
SUS-0509-2	5	9	111	268	35	75	1500	1W
SUS-0512-2	5	12	84	260	35	77	1500	1W
SUS-0515-2	5	15	67	255	32	78	1500	1W
SUS-0521-2	5	21	48	255	32	78	1500	1W
SUS-0524-2	5	24	42	255	40	78	1500	1W
SUS-1203.3-2	12	3.3	300	117	17	71	1500	1W
SUS-1205-2	12	5	200	115	16	72	1500	1W
SUS-1209-2	12	9	111	107	14	78	1500	1W
SUS-1212-2	12	12	84	105	14	79	1500	1W
SUS-1215-2	12	15	67	103	13	81	1500	1W
SUS-1224-2	12	24	42	103	10	81	1500	1W
SUS-2403.3-2	24	3.3	300	58	10	72	1500	1W
SUS-2405-2	24	5	200	58	10	72	1500	1W
SUS-2409-2	24	9	111	54	10	77	1500	1W
SUS-2412-2	24	12	84	54	10	77	1500	1W
SUS-2415-2	24	15	67	54	10	77	1500	1W
SUS-2424-2	24	24	42	53	10	79	1500	1W
SUS-4803.3-2	48	3.3	300	28	8	74	1500	1W
SUS-4805-2	48	5	200	28	8	74	1500	1W
SUS-4809-2	48	9	111	28	7	74	1500	1W
SUS-4812-2	48	12	84	29	8	72	1500	1W
SUS-4815-2	48	15	67	26	7	75	1500	1W

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

⁸ NOMINAL INPUT VOLTAGE.

⁹ NOMINAL INPUT VOLTAGE, FULL LOAD.

● SELECTION GUIDE(3)

2W OUTPUT

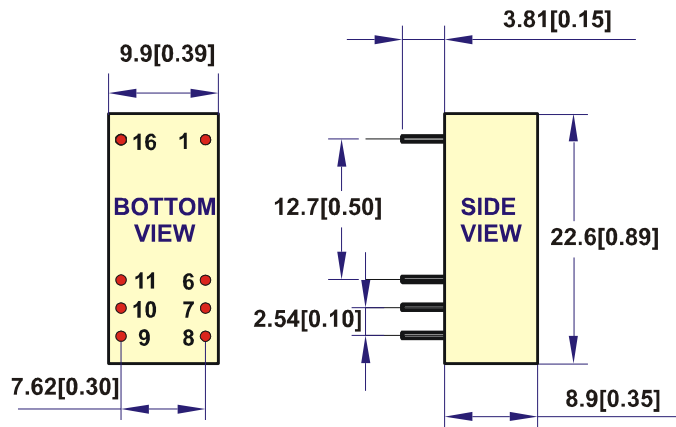
MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ¹⁰ CURRENT(mA)		EFF (%) ¹¹	ISOLATION (VDC)	OUTPUT POWER (Watt)
				FULL LOAD	NO LOAD			
SUS-0505-3	5	5	400	500	40	80	1500	2W
SUS-0509-3	5	9	222	506	40	79	1500	2W
SUS-0512-3	5	12	167	500	40	80	1500	2W
SUS-0515-3	5	15	133	488	40	82	1500	2W
SUS-1205-3	12	5	400	214	15	78	1500	2W
SUS-1209-3	12	9	222	214	15	78	1500	2W
SUS-1212-3	12	12	167	201	15	83	1500	2W
SUS-1215-3	12	15	133	196	15	85	1500	2W
SUS-2405-3	24	5	400	107	10	78	1500	2W
SUS-2409-3	24	9	222	107	10	78	1500	2W
SUS-2412-3	24	12	167	103	10	81	1500	2W
SUS-2415-3	24	15	133	100	10	83	1500	2W
SUS-4805-3	48	5	400	56	6	74	1500	2W
SUS-4809-3	48	9	222	54	6	77	1500	2W
SUS-4812-3	48	12	167	51	6	81	1500	2W
SUS-4815-3	48	15	133	51	6	81	1500	2W

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

¹⁰ NOMINAL INPUT VOLTAGE.

¹¹ NOMINAL INPUT VOLTAGE, FULL LOAD.

● MECHANICAL DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS



PIN	SINGLE
1 & 16	+Vin
6 & 11	-Vout
7 & 10	+Vout
8 & 9	-Vin

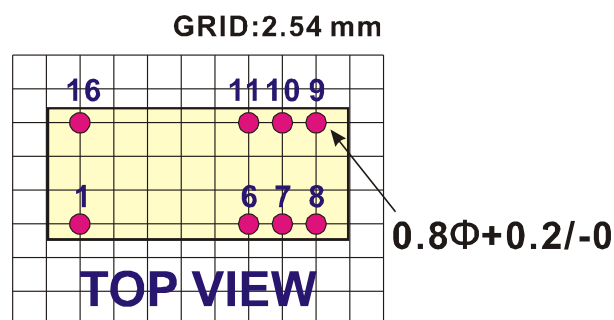
NOTE : All dimensions are in mm(Inches)

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

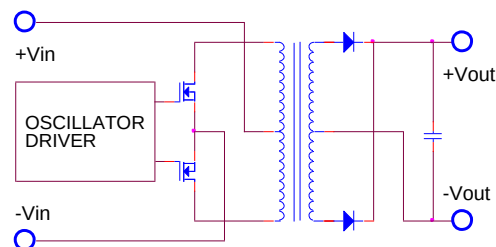
2. Pin is Tolerance .XX= ± 0.05 mm

3. Tolerance .X or .XX= ± 0.5 mm

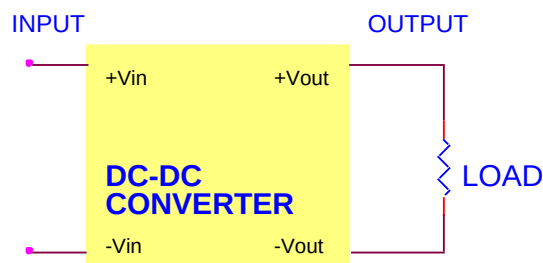
All dimensions are in mm[inches]



● SIMPLIFIED SCHEMATIC



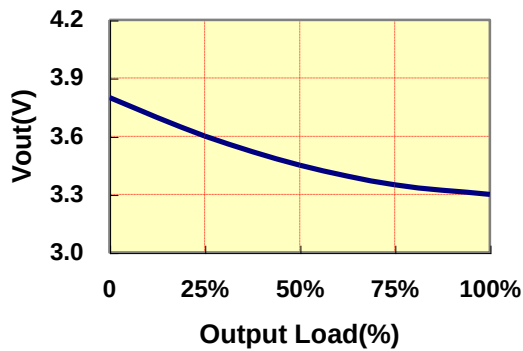
● TYPICAL APPLICATIONS



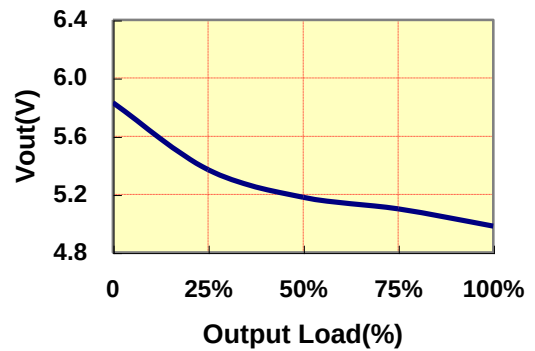
● TYPICAL PERFORMANCE CURVES

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

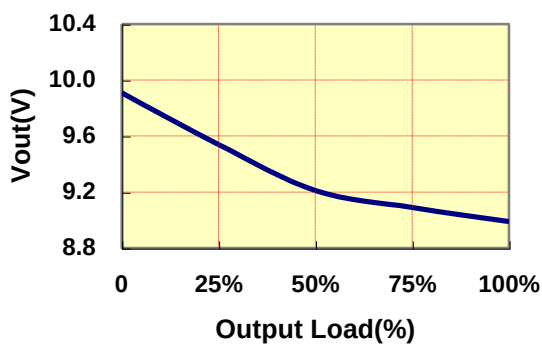
VOUT VS LOAD(3.3Vout Models)



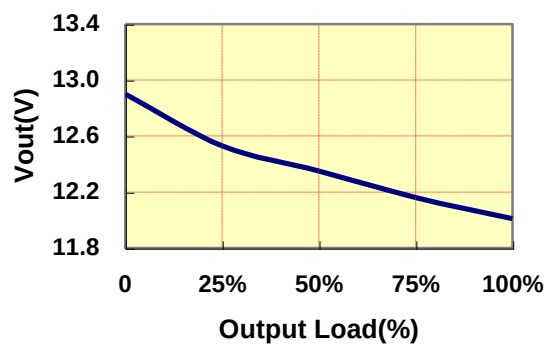
VOUT VS LOAD(5Vout Models)



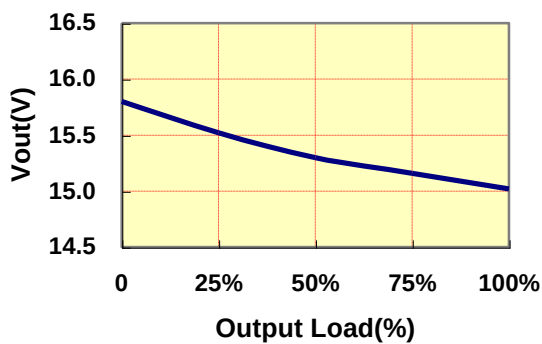
VOUT VS LOAD(9Vout Models)



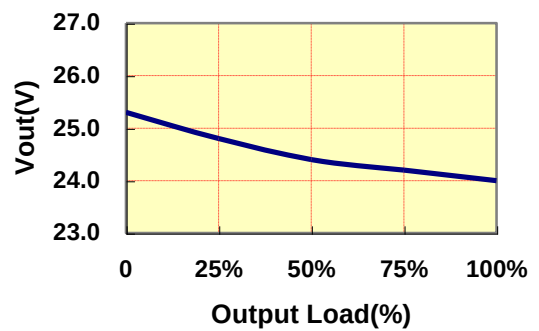
VOUT VS LOAD(12Vout Models)



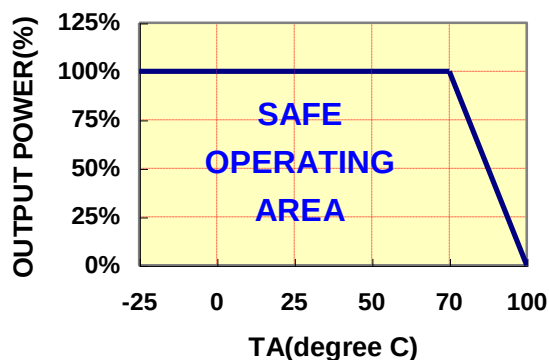
VOUT VS LOAD(15Vout Models)



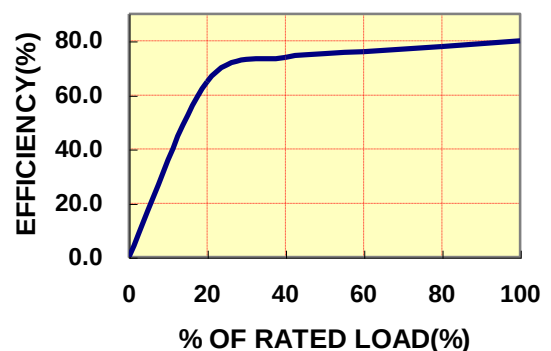
VOUT VS LOAD(24Vout Models)



DERATING CURVES



EFFICIENCY VS LOAD



● INPUT FUSE SELECTION GUIDE

4.5-5.5V	10.8-13.2V	21.6-26.4V	43.2-52.8V
INPUT VOLTAGE(VDC)	INPUT VOLTAGE(VDC)	INPUT VOLTAGE(VDC)	INPUT VOLTAGE(VDC)
800mA Slow-Blow Type	300mA Slow-Blow Type	160mA Slow-Blow Type	100mA Slow-Blow Type

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

SU 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 EN55032 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.

FOR MORE INFORMATION CALL:

Danube Enterprise Co., Ltd.

Tel: 886-7-3755163

Fax: 886-7-3755330

E-mail: danube@ms10.hinet.net

Home Page

<http://www.danube.com.tw>
