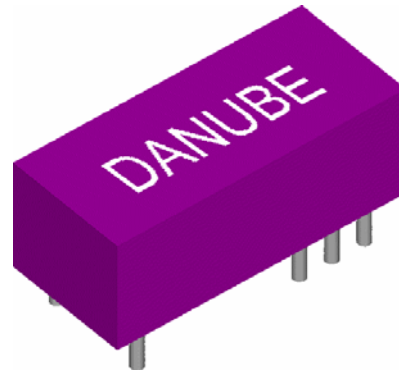


# DC-DC Converter UNIT

SU Series (0,5W TO 1W UNREGULATED DC-DC CONVERTER)

## FEATURES

- 1000VDC ISOLATION
- EFFICIENCY UP TO 83%
- INTERNAL SMD TECHNOLOGY
- LOW COST
- NO HEATSINK REQUIRED
- UP TO 1W UNREGULATED OUTPUT POWER
- DUAL IN LINE PACKAGE
- 100% BURNED IN
- MTBF > 2,000,000 HOURS



### ● OUTPUT SPECIFICATIONS

Voltage Setpoint Accuracy	+/-2% max
Temperature Coefficient	+/-0.03%/°C
Ripple & Noise (20MHz BW)	100mVp-p max
Line Regulation <sup>1</sup>	+/-1.2% max
Load Regulation <sup>2</sup>	+/-8% max
Short Circuit Protection	Momentary

### ● ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-25 °C to +71 °C
Storage Temperature	-55 °C to +125 °C
Cooling	Free-Air Convection

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

### ● INPUT SPECIFICATIONS

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

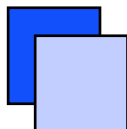
### ● GENERAL SPECIFICATIONS

Efficiency	70%-83%
Isolation Voltage <sup>3</sup>	1000 VDC min
Isolation Resistance	10 <sup>9</sup> ohms min
Switching Frequency	50 KHz min
Isolation Capacitance	80pF max
MTBF	2,000,000 Hours
Weight	3.1g Typ
Case Material	Non-Conductive Plastic
Case Size	22.6mm*9.9mm*8.4mm

<sup>1</sup> Line Regulation is for a 1.0% change in input Voltage.

<sup>2</sup> Load Regulation is for output load current change from 20% to 100%.

<sup>3</sup> For 60 seconds

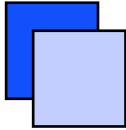


# DC-DC Converter UNIT

SU Series (0,5W TO 1W UNREGULATED DC-DC CONVERTER)

## ● SELECTION GUIDE 0.5W-1W OUTPUT

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT CURRENT(mA)		EFF (%)	ISOLATION (VDC)	OUTPUT POWER (Watt)
				FULL LOAD	NO LOAD			
SUS-0505-1	5	5	100	135	11	74	1000	0.5W
SUS-0509-1	5	9	56	133	14	75	1000	0.5W
SUS-0512-1	5	12	42	127	14	79	1000	0.5W
SUS-0515-1	5	15	34	130	15	77	1000	0.5W
SUS-1205-1	12	5	100	55	6	76	1000	0.5W
SUS-1209-1	12	9	56	52	5	80	1000	0.5W
SUS-1212-1	12	12	42	50	5	83	1000	0.5W
SUS-1215-1	12	15	34	50	5	83	1000	0.5W
SUS-2405-1	24	5	100	28	3	74	1000	0.5W
SUS-2409-1	24	9	56	25	3	83	1000	0.5W
SUS-2412-1	24	12	42	25	3	83	1000	0.5W
SUS-2415-1	24	15	34	25	3	83	1000	0.5W
SUS-4805-1	48	5	100	14	2	74	1000	0.5W
SUS-4809-1	48	9	56	13	2	80	1000	0.5W
SUS-4812-1	48	12	42	13	2	80	1000	0.5W
SUS-4815-1	48	15	34	13	2	80	1000	0.5W
SUS-0505-2	5	5	200	274	21	73	1000	1W
SUS-0509-2	5	9	111	268	20	75	1000	1W
SUS-0512-2	5	12	84	255	20	78	1000	1W
SUS-0515-2	5	15	67	253	20	79	1000	1W
SUS-1205-2	12	5	200	112	11	74	1000	1W
SUS-1209-2	12	9	111	105	10	79	1000	1W
SUS-1212-2	12	12	84	102	10	82	1000	1W
SUS-1215-2	12	15	67	102	10	82	1000	1W
SUS-2405-2	24	5	200	58	10	72	1000	1W
SUS-2409-2	24	9	111	52	6	80	1000	1W
SUS-2412-2	24	12	84	50	5	83	1000	1W
SUS-2415-2	24	15	67	50	5	83	1000	1W
SUS-4805-2	48	5	200	28	3	74	1000	1W
SUS-4809-2	48	9	111	27	3	77	1000	1W
SUS-4812-2	48	12	84	25	3	83	1000	1W
SUS-4815-2	48	15	67	25	2	83	1000	1W



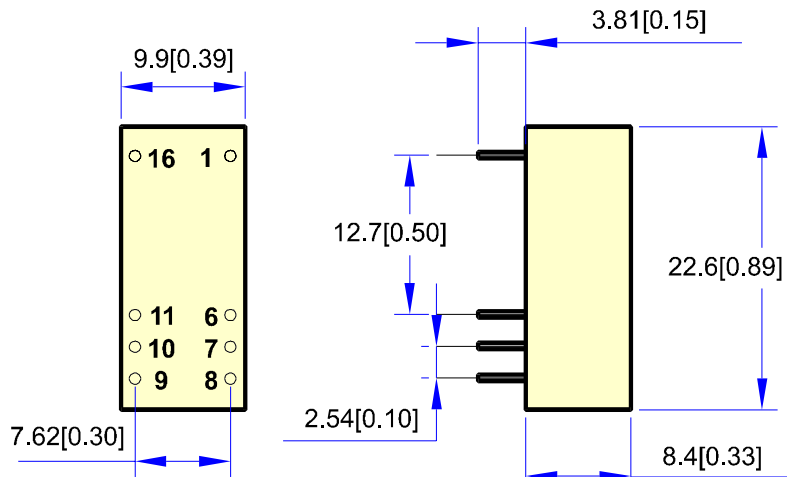
# DC-DC Converter UNIT

SU Series (0,5W TO 1W UNREGULATED DC-DC CONVERTER)

## MECHANICAL DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS

### BOTTOM VIEW

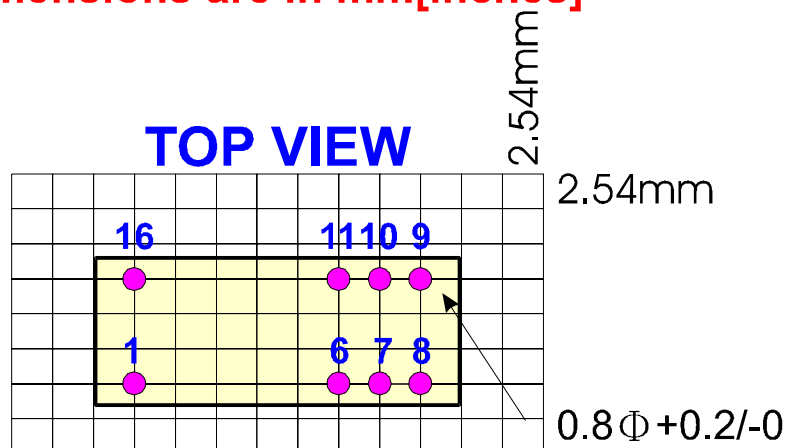
### SIDE VIEW



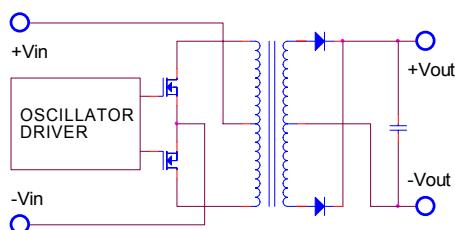
PIN	SINGLE
1 & 16	+Vin
6 & 11	-Vout
7 & 10	+Vout
8 & 9	-Vin

All dimensions are in mm[inches]

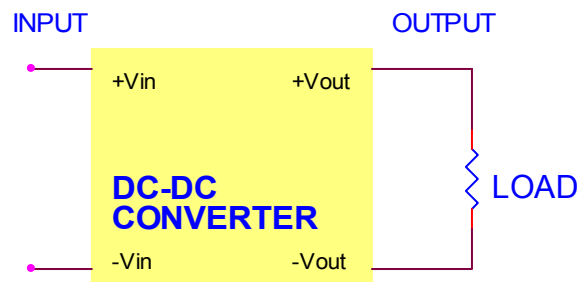
### TOP VIEW



## SIMPLIFIED SCHEMATIC



## TYPICAL APPLICATIONS





# DC-DC Converter UNIT

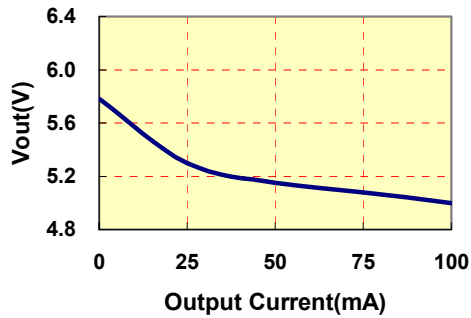
SU Series (0,5W TO 1W UNREGULATED DC-DC CONVERTER)

## ● TYPICAL PERFORMANCE CUREVES

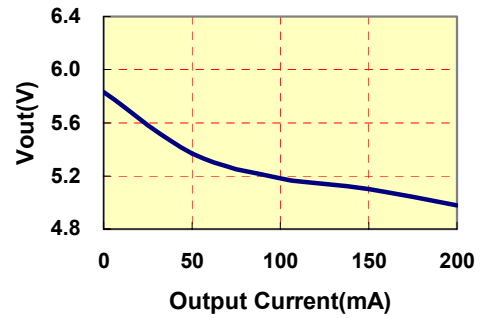
Specifications typical at  $t_a=25^{\circ}\text{C}$ , nominal input voltage , rated output current unless otherwise specified.

### VOUT VS LOAD(5Vout Models)

**OUTPUT POWER:0.5W**

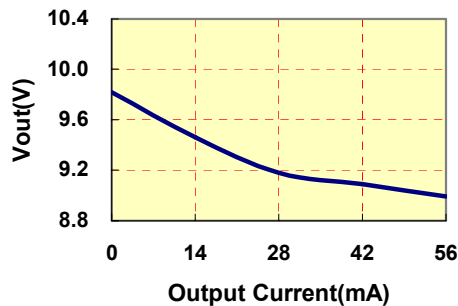


**OUTPUT POWER:1W**

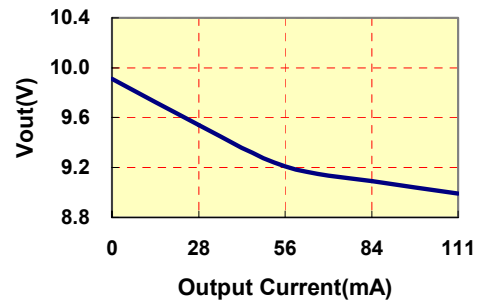


### VOUT VS LOAD(9Vout Models)

**OUTPUT POWER:0.5W**

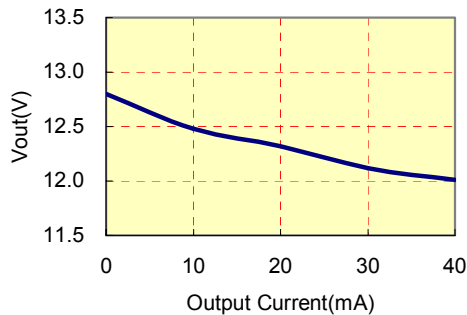


**OUTPUT POWER:1W**

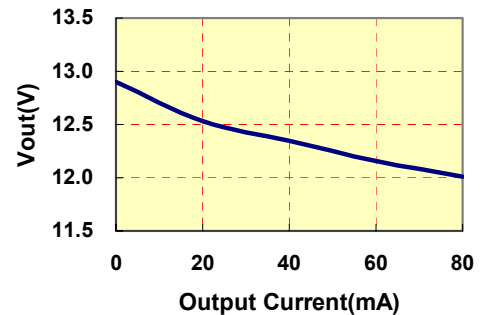


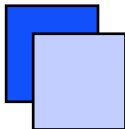
### VOUT VS LOAD(12Vout Models)

**OUTPUT POWER:0.5W**



**OUTPUT POWER:1W**



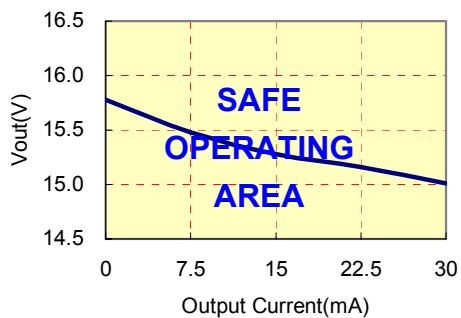


# DC-DC Converter UNIT

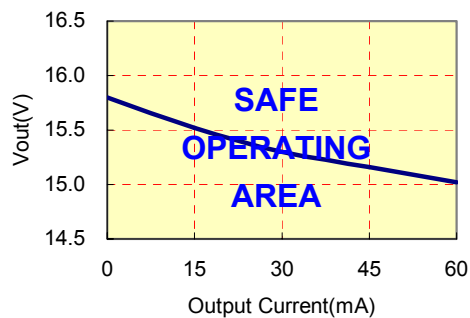
SU Series (0,5W TO 1W UNREGULATED DC-DC CONVERTER)

## VOUT VS LOAD(15Vout Models)

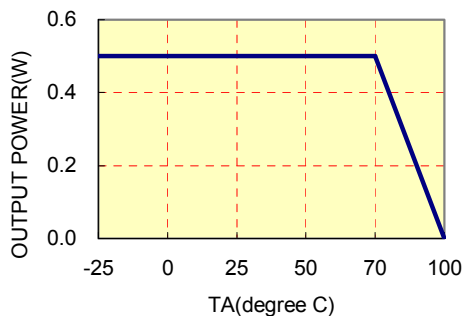
OUTPUT POWER:0.5W



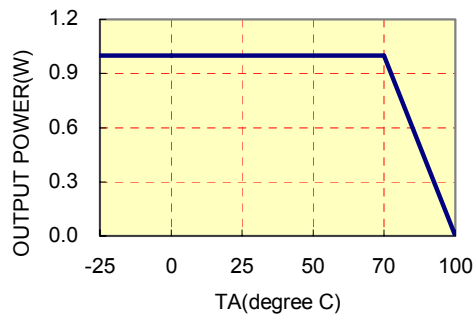
OUTPUT POWER:1W



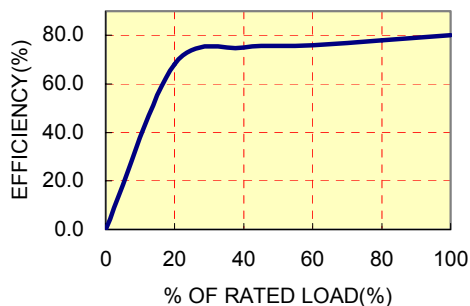
OUTPUT POWER:0.5W  
DERATING CURVE

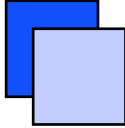


OUTPUT POWER:1W  
DERATING CURVE



## EFFICIENCY VS LOAD





# DC-DC Converter UNIT

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SU Series (0,5W TO 1W UNREGULATED DC-DC CONVERTER)

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## **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.*

### **Negative Outputs:**

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

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## **FOR MORE INFORMATION CALL:**

### ***Power Systems – The Power Solution***

74360 Ilsfeld-Auenstein ( Germany ) Dörnet 8

Tel: + 49 / 70 62 / 67 59 – 6

Fax: + 49 / 70 62 / 67 59 -80

E-mail: [Info@Power-Systems.de](mailto:Info@Power-Systems.de)

Home Page: [www.Power-Systems.de](http://www.Power-Systems.de)

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