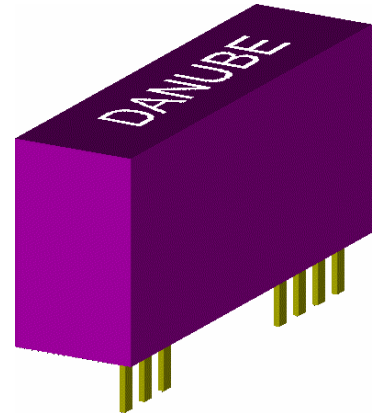


### FEATURES

- 1000VDC ISOLATION
- HIGH EFFICIENCY
- INTERNAL FILTERING
- LOW COST
- NO EXTERNAL COMPONENTS REQUIRED
- UP TO 1W REGULATED OUTPUT POWER
- SINGLE IN LINE PACKAGE
- 100% BURNED IN
- LOW NOISE
- MTBF > 800,000 HOURS



#### ● OUTPUT SPECIFICATIONS

Voltage Set point Accuracy	+/-2% max
Temperature Coefficient	+/-0.03%/°C
Ripple & Noise (20MHz BW)	100mVp-p max
Line Regulation <sup>1</sup>	+/-0.5% max
Load Regulation <sup>2</sup>	+/-0.5% max

Short Circuit Protection	Current Limit Protection
Short Circuit Restart	Automatic

#### ● ENVIRONMENTAL SPECIFICATIONS

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

#### ● INPUT SPECIFICATIONS

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

#### ● GENERAL SPECIFICATIONS

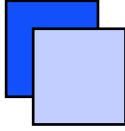
Efficiency	60% min
Isolation Voltage <sup>3</sup>	1000 VDC min
Isolation Resistance	10 <sup>9</sup> ohms min
Switching Frequency	50 KHz min
Isolation Capacitance	80pF max
MTBF	800,000 Hours
Weight	7.0g Typ
Case Material	Non-Conductive Plastic
Case Size	31.8mm*8.6mm*14.5mm

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

<sup>1</sup> High Line to Low Line.

<sup>2</sup> Load Regulation is for output load current change from 10% to 100%.

<sup>3</sup> For 60 seconds



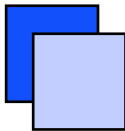
# DC-DC Converter UNIT

1R Serie ( 1W SINGLE OUTPUTS WITH REGULATION )

## ● SELECTION GUIDE 1W OUTPUT

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT CURRENT(mA)		EFF (%)	ISOLATION (VDC)
				FULL LOAD	NO LOAD		
1RS-0505	4.5-5.5	5	200	322	23	62	1000
1RS-0509	4.5-5.5	9	111	333	22	60	1000
1RS-0512	4.5-5.5	12	84	322	22	62	1000
1RS-0515	4.5-5.5	15	67	322	21	62	1000
1RD-0505	4.5-5.5	+/-5	+/-100	322	23	62	1000
1RD-0512	4.5-5.5	+/-12	+/-42	322	22	62	1000
1RD-0515	4.5-5.5	+/-15	+/-34	322	21	62	1000
1RS-1205	10.8-13.2	5	200	124	15	67	1000
1RS-1209	10.8-13.2	9	111	134	15	62	1000
1RS-1212	10.8-13.2	12	84	130	15	64	1000
1RS-1215	10.8-13.2	15	67	132	15	63	1000
1RD-1205	10.8-13.2	+/-5	+/-100	124	15	67	1000
1RD-1212	10.8-13.2	+/-12	+/-42	130	15	64	1000
1RD-1215	10.8-13.2	+/-15	+/-34	132	15	63	1000
1RS-2405	21.6-26.4	5	200	61	7	68	1000
1RS-2409	21.6-26.4	9	111	64	6	65	1000
1RS-2412	21.6-26.4	12	84	60	6	70	1000
1RS-2415	21.6-26.4	15	67	60	6	70	1000
1RD-2405	21.6-26.4	+/-5	+/-100	61	7	68	1000
1RD-2412	21.6-26.4	+/-12	+/-42	60	6	70	1000
1RD-2415	21.6-26.4	+/-15	+/-34	60	6	70	1000

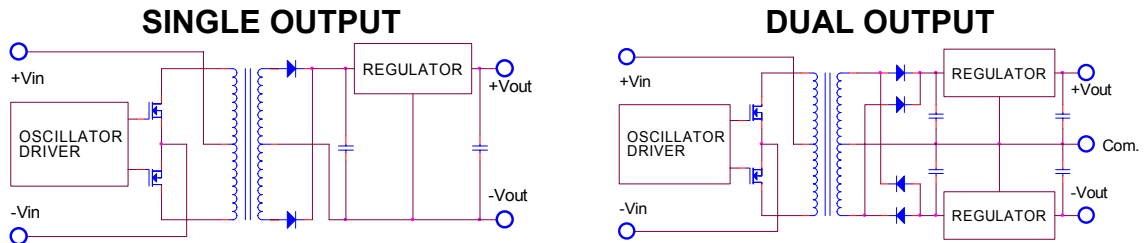
*Note: Other input to output voltages may be available. Please contact factory.*



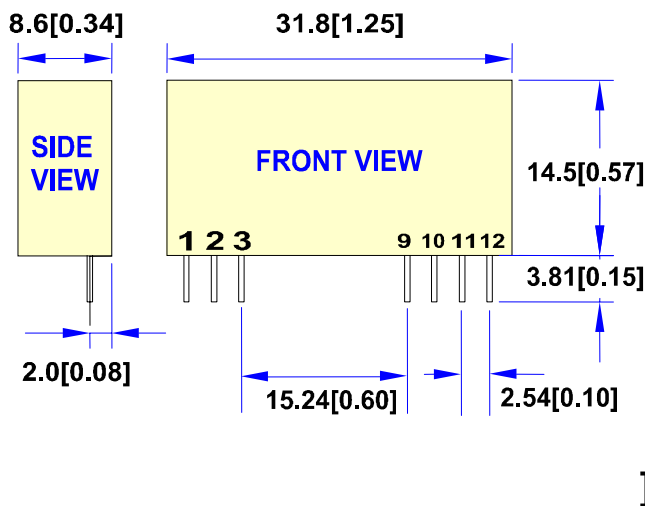
# DC-DC Converter UNIT

1R Serie ( 1W SINGLE OUTPUTS WITH REGULATION )

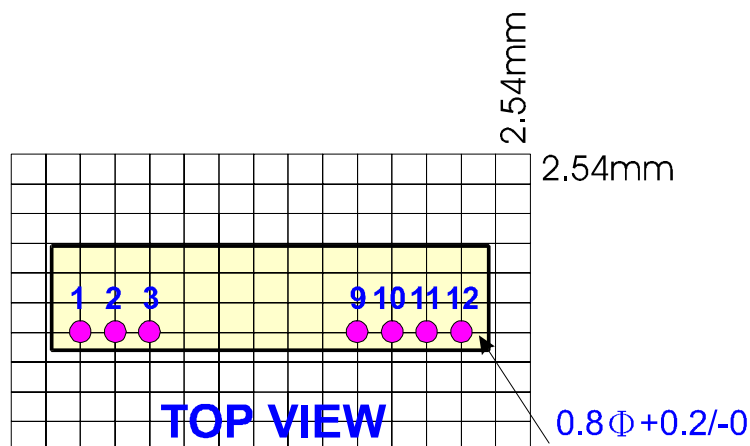
## ● SIMPLIFIED SCHEMATIC

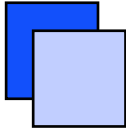


## ● MECHANICAL DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS



PIN	SINGLE	DUAL
1	+Vin	+Vin
2	NC	-Vout
3	NC	NC
9	NC	NC
10	-Vout	Common
11	+Vout	+Vout
12	-Vin	-Vin



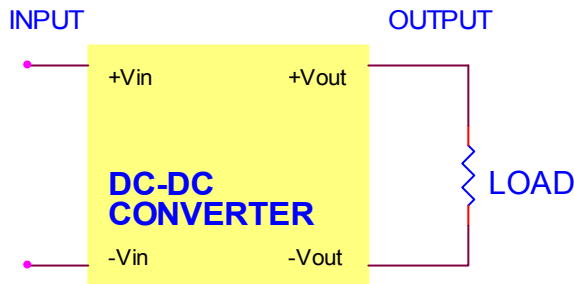


# DC-DC Converter UNIT

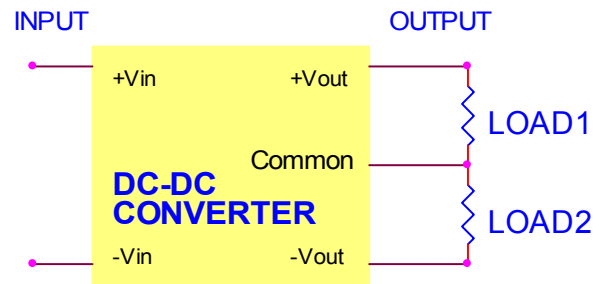
1R Serie ( 1W SINGLE OUTPUTS WITH REGULATION )

## ● TYPICAL APPLICATIONS

### SINGLE OUTPUT



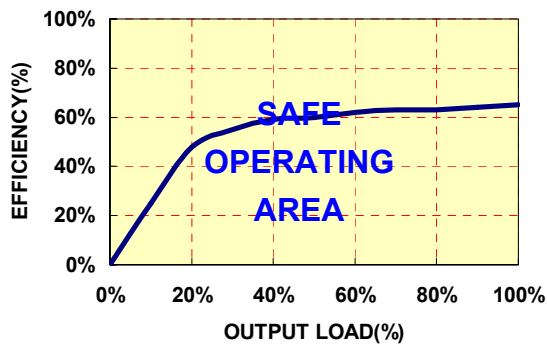
### DUAL OUTPUT



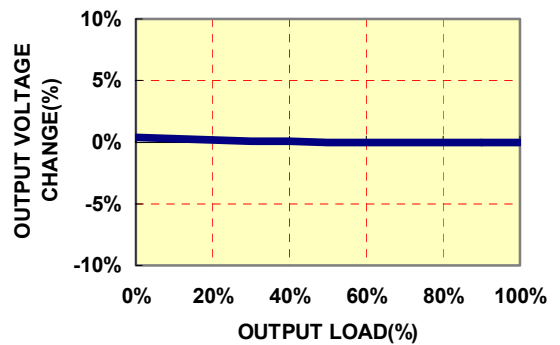
## ● TYPICAL PERFORMANCE CUREVES

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

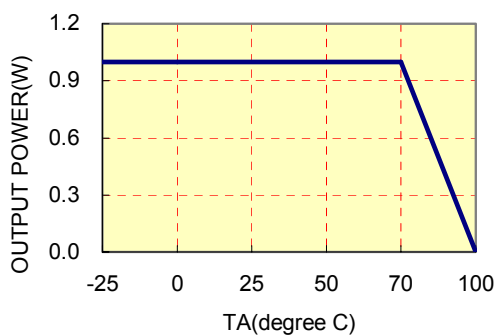
OUTPUT LOAD vs EFFICIENCY



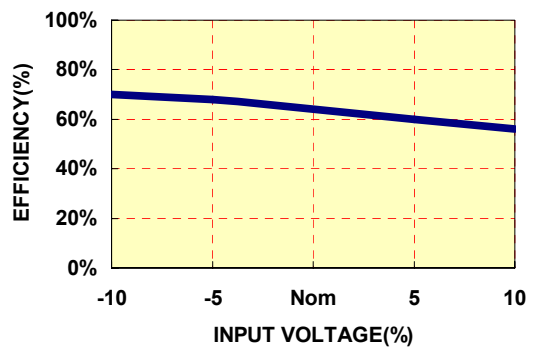
OUTPUT LOAD vs OUTPUT VOLTAGE

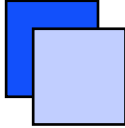


TEMPERATURE DERATING



INPUT VOLTAGE vs EFFICIENCY





# DC-DC Converter UNIT

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1R Serie ( 1W SINGLE OUTPUTS WITH REGULATION )

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## 1R SERIES APPLICATION NOTES:

### EXTERNAL CAPACITANCE REQUIREMENTS:

No external capacitance is required for operation of the 1R series.

To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5 ohm from DC to 100KHz is required.

External output capacitance is not required for operation, however it is recommended that 10uF tantalum and 0.1uF ceramic capacitance be selected for reduced system noise.

Additional output capacitance may be added for increased filtering, but should not exceed 220uF.

### 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:

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74360 Ilsfeld-Auenstein ( Germany ) Dörnet 8

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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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