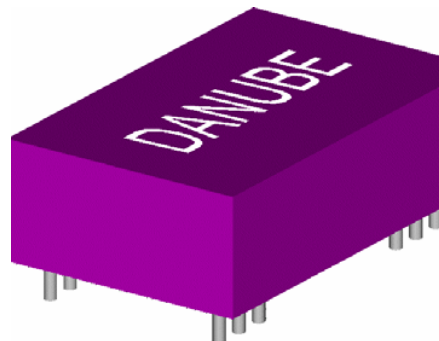


# DC-DC Converter UNIT

CR Series ( 3W REGULATED DC-DC CONVERTER)

## FEATURES

- 1000VDC ISOLATION
- HIGH EFFICIENCY
- SIX-SIDED SHIELD TO REDUCE EMI
- LOW COST
- NO EXTERNAL COMPONENTS REQUIRED
- UP TO 3W REGULATED OUTPUT POWER
- DUAL IN LINE PACKAGE
- 100% BURNED IN
- LOW NOISE
- MTBF > 850,000 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>	+/-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

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

### ● INPUT SPECIFICATIONS

Input Voltage Range	+/-10% max
Input Filter	Pi Network

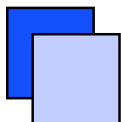
### ● GENERAL SPECIFICATIONS

Efficiency	58% 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	850,000 Hours
Weight	12.0g-14.4g
Case Material	Non-Conductive Plastic Or Six-Sided Shield Case
Case Size	31.8mm*20.3mm*10.2mm

<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



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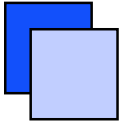
## ● SELECTION GUIDE

MODEL NUMBER <sup>4</sup>	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT CURRENT(mA)		EFF (%)	ISOLATION (VDC)
				FULL LOAD	NO LOAD		
CRS-0505(M)	4.5-5.5	5	600	960	70	63	1000
CRS-0509(M)	4.5-5.5	9	330	950	70	63	1000
CRS-0512(M)	4.5-5.5	12	250	930	70	65	1000
CRS-0515(M)	4.5-5.5	15	200	940	70	64	1000
CRS-0524(M)	4.5-5.5	24	125	940	70	64	1000
CRD-0505(M)	4.5-5.5	+/-5	+/-300	970	70	62	1000
CRD-0512(M)	4.5-5.5	+/-12	+/-125	930	70	65	1000
CRD-0515(M)	4.5-5.5	+/-15	+/-100	940	70	64	1000
CRS-1205(M)	10.8-13.2	5	600	410	30	61	1000
CRS-1209(M)	10.8-13.2	9	330	400	30	63	1000
CRS-1212(M)	10.8-13.2	12	250	380	30	66	1000
CRS-1215(M)	10.8-13.2	15	200	360	30	69	1000
CRS-1224(M)	10.8-13.2	24	125	360	30	69	1000
CRD-1205(M)	10.8-13.2	+/-5	+/-300	420	30	60	1000
CRD-1212(M)	10.8-13.2	+/-12	+/-125	390	30	64	1000
CRD-1215(M)	10.8-13.2	+/-15	+/-100	360	30	69	1000
CRS-2405(M)	21.6-26.4	5	600	200	15	63	1000
CRS-2409(M)	21.6-26.4	9	330	190	15	66	1000
CRS-2412(M)	21.6-26.4	12	250	180	15	69	1000
CRS-2415(M)	21.6-26.4	15	200	180	15	69	1000
CRS-2424(M)	21.6-26.4	24	125	180	15	69	1000
CRD-2405(M)	21.6-26.4	+/-5	+/-300	210	15	60	1000
CRD-2412(M)	21.6-26.4	+/-12	+/-125	194	26	64	1000
CRD-2415(M)	21.6-26.4	+/-15	+/-100	180	15	69	1000
CRS-4805(M)	43.2-52.8	5	600	100	10	63	1000
CRS-4809(M)	43.2-52.8	9	330	95	10	66	1000
CRS-4812(M)	43.2-52.8	12	250	90	10	69	1000
CRS-4815(M)	43.2-52.8	15	200	90	10	69	1000
CRD-4805(M)	43.2-52.8	+/-5	+/-300	100	10	63	1000
CRD-4812(M)	43.2-52.8	+/-12	+/-125	90	10	69	1000
CRD-4815(M)	43.2-52.8	+/-15	+/-100	90	10	69	1000

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

<sup>4</sup> CR\*\_\*\*\*\*\* ----- Non-Conductive Plastic

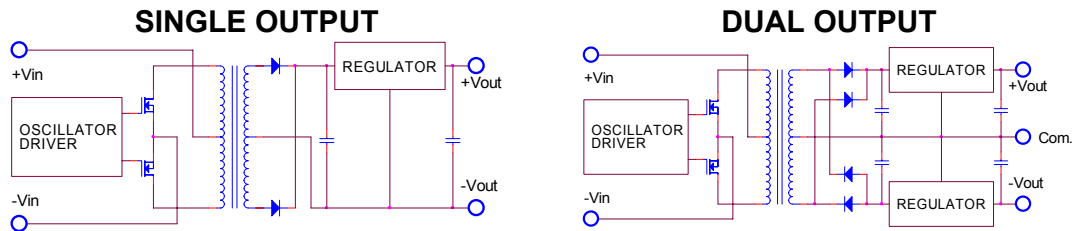
CR\*\_\*\*\*\*\*M ----- Six-sided shield case



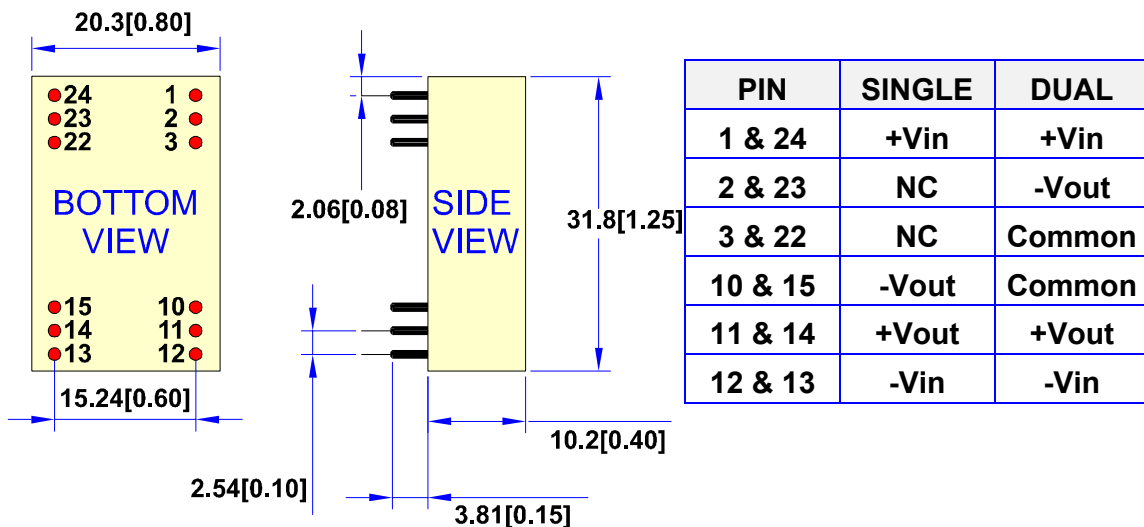
# DC-DC Converter UNIT

CR Series ( 3W REGULATED DC-DC CONVERTER)

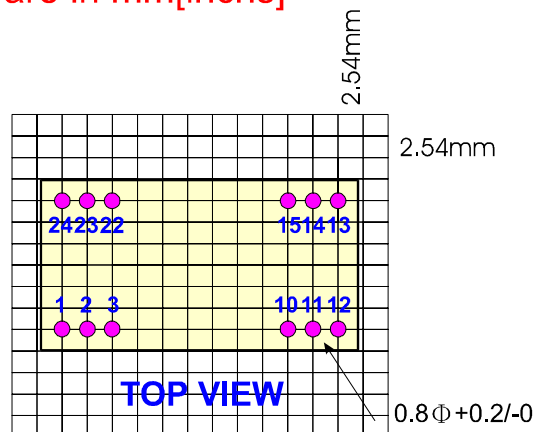
## ● SIMPLIFIED SCHEMATIC

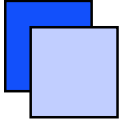


## ● MECHANICAL DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS



All dimensions are in mm[inchs]



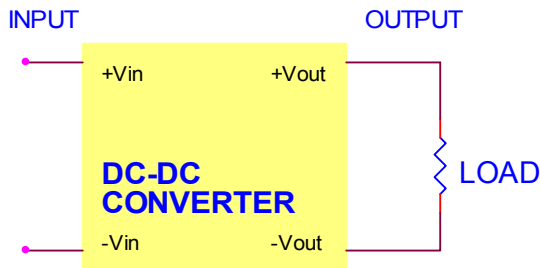


# DC-DC Converter UNIT

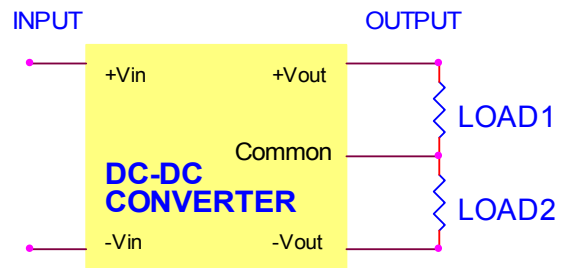
CR Series ( 3W REGULATED DC-DC CONVERTER)

## ● TYPICAL APPLICATIONS

### SINGLE OUTPUT



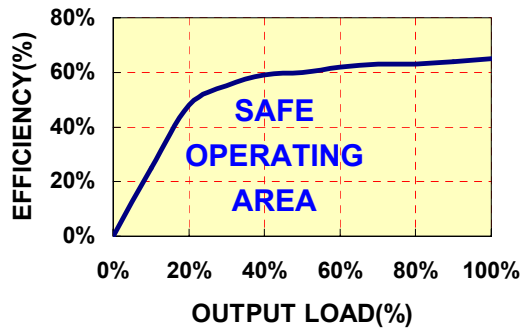
### DUAL OUTPUT



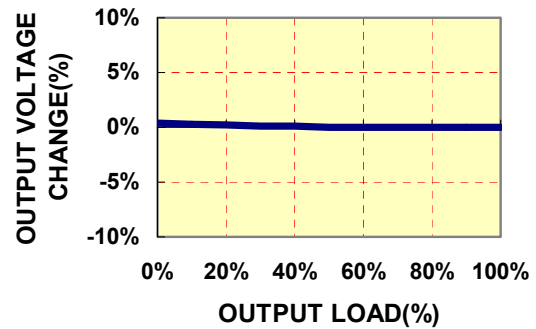
## ● TYPICAL PERFORMANCE CURVES

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

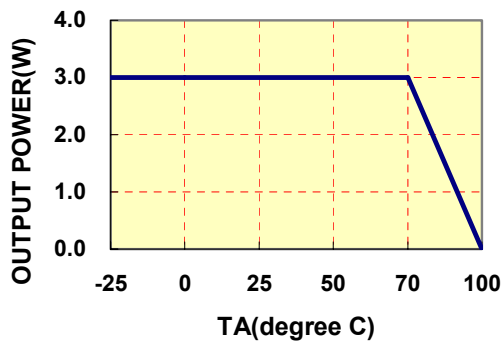
OUTPUT LOAD vs EFFICIENCY



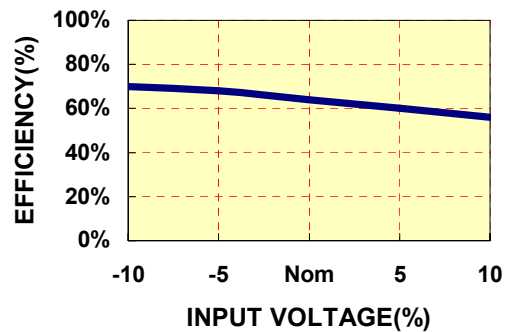
OUTPUT LOAD vs OUTPUT VOLTAGE

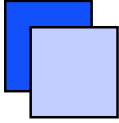


TEMPERATURE DERATING



INPUT VOLTAGE vs EFFICIENCY





# DC-DC Converter UNIT

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CR Series ( 3W REGULATED DC-DC CONVERTER)

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## CR SERIES APPLICATION NOTES:

### EXTERNAL CAPACITANCE REQUIREMENTS:

*No external capacitance is required for operation of the CR 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:

### *Power Systems – The Power Solution*

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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