

# Features

## Regulated Converters

- 2:1 Wide Input Voltage Range
- 8 Watts Regulated Output Power
- 1.6kVDC Isolation
- UL Certified
- Low Profile, 10.2 mm Height
- Over Current Protection
- Five-Sided Shield
- Standard DIP24 and SMD-Pinning
- Efficiency to 87 %

## Description

The RP08-A series DC/DC converters are certified to UL 60950-1 and cUL 60950-1. This makes them ideal for all telecom and industrial applications where approved safety standards are required.

The DIP24 package is available in both pinned and SMD case styles and meets military standards for thermal shock and vibration tolerance.

## Selection Guide

Part Number	Input Range VDC	Output Voltage VDC	Output Current mA	Input <sup>(4)</sup> Current mA	Efficiency <sup>(5)</sup> %	Capacitive <sup>(6)</sup> Load max.
DIP24 (SMD)						
RP08-123.3SA**	9-18	3.3	2000	724	80	3300µF
RP08-1205SA**	9-18	5	1500	801	83	1600µF
RP08-1212SA**	9-18	12	666	833	88	350µF
RP08-1215SA**	9-18	15	533	843	87	240µF
RP08-243.3SA**	18-36	3.3	2000	362	80	3300µF
RP08-2405SA**	18-36	5	1500	396	83	1600µF
RP08-2412SA**	18-36	12	666	416	86	350µF
RP08-2415SA**	18-36	15	533	416	85	240µF
RP08-483.3SA**	36-75	3.3	2000	181	80	3300µF
RP08-4805SA**	36-75	5	1500	198	83	1600µF
RP08-4812SA**	36-75	12	666	208	86	350µF
RP08-4815SA**	36-75	15	533	208	86	240µF
RP08-1205DA**	9-18	±5	±800	843	83	±1000µF
RP08-1212DA**	9-18	±12	±333	833	87	±160µF
RP08-1215DA**	9-18	±15	±267	834	85	±100µF
RP08-2405DA**	18-36	±5	±800	427	82	±1000µF
RP08-2412DA**	18-36	±12	±333	422	86	±160µF
RP08-2415DA**	18-36	±15	±267	411	85	±100µF
RP08-4805DA**	36-75	±5	±800	211	85	±1000µF
RP08-4812DA**	36-75	±12	±333	206	87	±160µF
RP08-4815DA**	36-75	±15	±267	206	87	±100µF

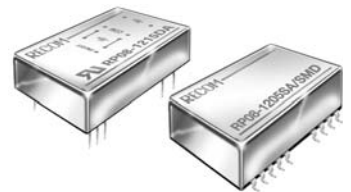
\*\* add Suffix SMD for SMD package

# POWERLINE

DC/DC-Converter



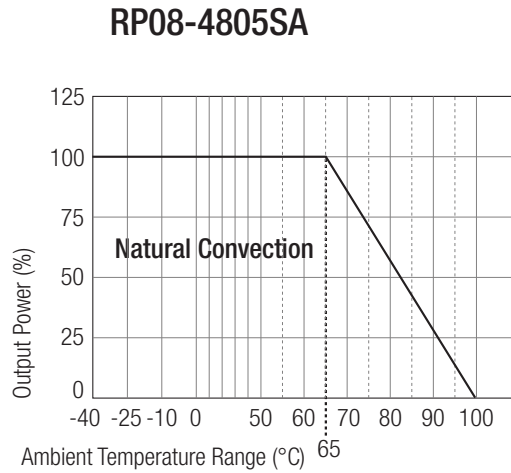
## 8 Watt DIP24/SMD Single & Dual Output



**UL-60950-1 Certified  
E196683**

# RP08

**Derating Graph (Ambient Temperature)**



Derating graphs are valid only for the shown part numbers. If you need detailed derating-information about a part-number not shown here please contact our technical support service at [info@recom-development.at](mailto:info@recom-development.at)

**Specifications** (typical at nominal input and 25°C unless otherwise noted)

Input Voltage Range (see Note 3)	12V nominal input	9-18VDC
	24V nominal input	18-36VDC
	48V nominal input	36-75VDC
Input Filter		Pi Type
Input Surge Voltage (100 ms max.)	12V Input	36VDC
	24V Input	50VDC
	48V Input	100VDC
Input Reflected Ripple (nominal Vin and full load)		20mAp-p
Start Up Time (nominal Vin and constant resistor load)		600ms typ.
Remote ON/OFF (see Note 7)	DC-DC ON	Open or $3.0V < V_r < 12V$
	DC-DC OFF	Short or $0V < V_r < 1.2V$
Remote OFF input current	Nominal input	2.5mA
Output Power		8W max.
Output Voltage Accuracy (full Load and nominal Vin)		±2%
Minimum Load (see Note 1)		10% of full load
Line Regulation (low line, high line at full load)		±0.2%
Load Regulation (25% to 100% full load)	Single	±0.5%
	Dual	±1%
Cross Regulation (asymmetrical 25%<->100% load)		±5%
Ripple and Noise (20MHz bandwidth)		50mVp-p
Temperature Coefficient		±0.02%/°C max.
Transient Response (25% load step change)		200µs

continued on next page

**Specifications** (typical at nominal input and 25°C unless otherwise noted)

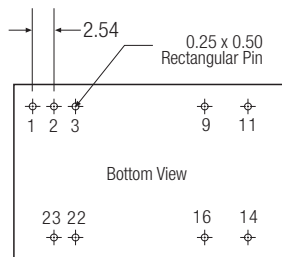
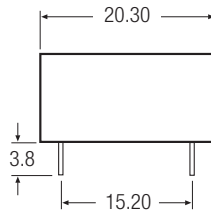
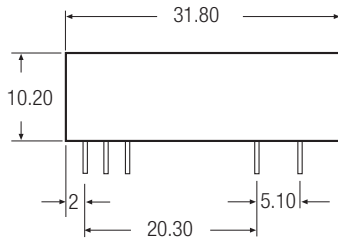
Over Load Protection (% of full load at nominal Vin)		150% typ
Undervoltage Lockout		none
Short Circuit Protection		Continuous, automatic recovery
Efficiency		see „Selection Guide“ table
Isolation Voltage	In to out	1600VDC min.
	I/O to case	DIP type 1600VDC min.
	I/O to case	SMD type 1000VDC min.
Isolation Resistance		1 GΩ min.
Isolation Capacitance		300pF max.
Operating Frequency		100kHz min.
Approved to Safety Standards		UL 1950, EN60950
Operating Temperature Range		-40°C to +85°C(with derating)
Maximum Case Temperature		+100°C
Storage Temperature Range		-55°C to +125°C
Thermal Impedance	Natural convection	20°C/Watt
Thermal Shock		MIL-STD-810D
Vibration		10-55Hz, 10G, 30 Min. along X, Y and Z
Relative Humidity		5% to 95% RH
Case Material		Nickel plated copper
Base Material		Non-conductive black plastic
Potting Material		Epoxy (UL94-V0)
Conducted Emissions (see Note 8)	EN55022	Level A
Radiated Emissions	EN55022	Level A
ESD	EN61000-4-2	Perf. Criteria B
Radiated Immunity	EN61000-4-3	Perf. Criteria B
Fast Transient	EN61000-4-4	Perf. Criteria B
Surge	EN61000-4-5	Perf. Criteria B
Conducted Immunity	EN61000-4-6	Perf. Criteria B
Weight	DIP	16g
	SMD	18g
Packing Quantity	Refer to App Notes for tube dimensions	7 pcs per Tube
Dimensions	DIP	31.8 x 20.3 x 10.2mm
	SMD	32.0 x 20.3 x 10.9mm
MTBF (see Note 2)		3165 x 10 <sup>3</sup> hours

**Notes:**

1. The RP08 series requires a minimum of 10% loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices, however they may not meet all listed specification.
2. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C (Ground fixed and controlled environment).
3. Start up voltage : 10VDC
4. Maximum value at nominal input voltage and full load of standard type.
5. Typical value at nominal input voltage and full load.
6. Test by minimum Vin and constant resistor load.
7. The ON/OFF control pin voltage is referenced to negative input.
8. Vin=12V, fit a 4.7µF 1210 MLCC capacitor across the input pins to meet EN55022 Class A. 24V and 48V Types meet Class A without external components  
See application notes for Class B Filter suggestion.

Package Style and Pinning (mm)

DIP24 Package Style



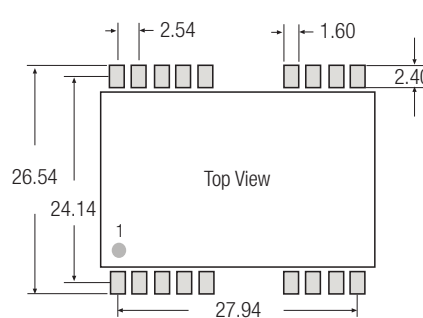
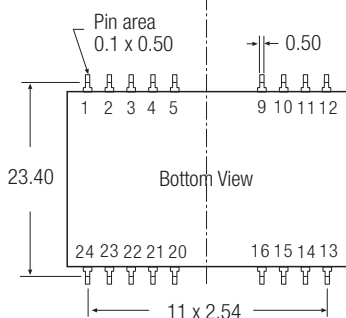
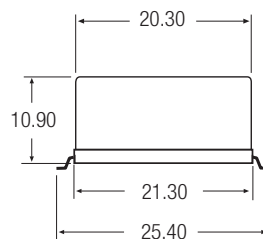
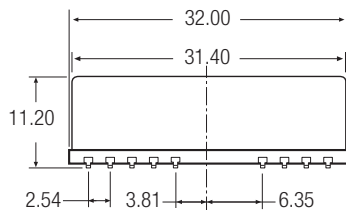
Pin Connections

Pin #	Single	Dual
1	ON/OFF	ON/OFF
2	-Vin	-Vin
3	-Vin	-Vin
9	NC	Com
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	Com
22	+Vin	+Vin
23	+Vin	+Vin

NC = No Connection

Pin Pitch Tolerance  $\pm 0.35$  mm

SMD Package Style



SMD Package Style

Same spec. as the original DIP spec. and pin definition, excl. of the SMD type pin.

Pin Connections

Pin #	Single	Dual
1	ON/OFF	ON/OFF
2	-Vin	-Vin
3	-Vin	-Vin
9	NC	Com
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	Com
22	+Vin	+Vin
23	+Vin	+Vin
Others	NC	NC

NC = No Connection

Pin Pitch Tolerance  $\pm 0.35$  mm