

Features

Regulated Converters

- 4:1 Wide Input Voltage Range
- 8 Watts Regulated Output Power
- 1.6kVDC Isolation
- Over Current and Over Voltage Protection
- Five-Sided Shield
- No Derating to 74°C
- Standard DIP24 and SMD-Pinning
- Efficiency to 88%

Description

The RP08-AW series wide range input DC/DC converter 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.

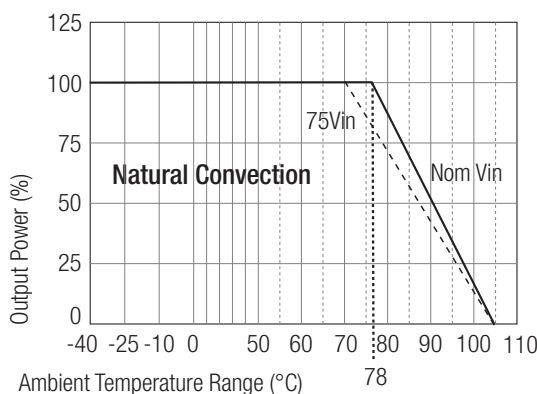
Selection Guide 24V and 48V Wide Input Types

Part Number	Input Range VDC	Output Voltage VDC	Output Current mA	Input ^(4,5) Current mA	Efficiency ⁽⁶⁾ %	Capacitive ⁽⁷⁾ Load max.
RP08-243.3SAW**	9-36	3.3	2400	40/407	85	1330µF
RP08-2405SAW**	9-36	5	1600	40/402	87	1330µF
RP08-2412SAW**	9-36	12	666	25/407	86	288µF
RP08-2415SAW**	9-36	15	533	25/407	86	200µF
RP08-483.3SAW**	18-75	3.3	2400	20/204	85	1330µF
RP08-4805SAW**	18-75	5	1600	20/201	87	1330µF
RP08-4812SAW**	18-75	12	666	13/201	87	288µF
RP08-4815SAW**	18-75	15	533	13/198	88	200µF
RP08-2405DAW**	9-36	±5	±800	20/417	84	±900µF
RP08-2412DAW**	9-36	±12	±333	25/407	84	±133µF
RP08-2415DAW**	9-36	±15	±267	25/407	86	±90µF
RP08-4805DAW**	18-75	±5	±800	10/208	84	±900µF
RP08-4812DAW**	18-75	±12	±333	13/203	85	±133µF
RP08-4815DAW**	18-75	±15	±267	13/201	87	±90µF

** add Suffix SMD for SMD package

Derating Graph (Ambient Temperature)

RP08-4805SAW



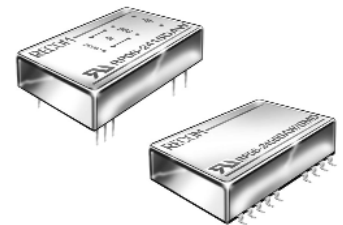
Derating graphs are valid only for the shown part numbers. If you need detailed derating information about a part-number not shown here please contact our technical support service at info@recom-development.at

POWERLINE

DC/DC-Converter



8 Watt DIP24/SMD, Single & Dual Output



UL-60950-1 Certified
E196683

RP08-W

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

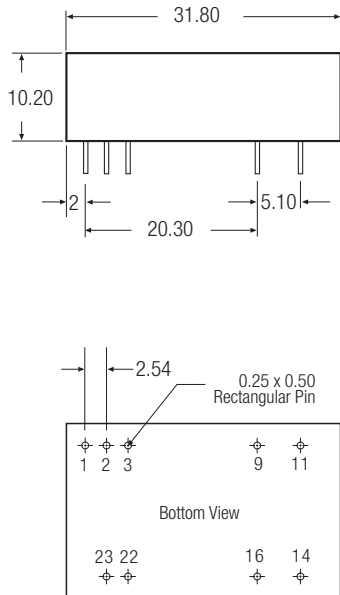
Input Voltage Range	24V nominal input 48V nominal input	9-36VDC 18-75VDC
Input Filter		Pi Type
Input Surge Voltage (100ms max)		50VDC (24V Typ), 100VDC (48V Typ)
Input Reflected Ripple (nominal Vin and full load)		20mA _{p-p}
Start Up Time (nominal Vin and constant resistor load)		450ms typ.
Remote ON/OFF (see note 1)	DC-DC ON	Open or 3.0V < Vr < 12V
DC-DC OFF	Short or 0V < Vr < 1.2V	Remote OFF input current
Nominal input	2.5mA	
Output Power		8W max.
Output Voltage Accuracy (full Load and nominal Vin)		±1%
Minimum Load		0%
Line Regulation (low line, high line at full load)		±0.2%
Load Regulation (0% to 100% full load)	Single	±0.5%
	Dual	±1%
Cross Regulation Dual Output (asymmetrical 25% <> 100% load)		±5%
Ripple and Noise (20MHz bandwidth)		50mV _{p-p}
Temperature Coefficient		±0.02%/°C max.
Transient Response (25% load step change)		250µs
Input Voltage Variation, dv/dt	complies with ETS300 132, part 4.4	5V/ms
Over Load Protection (% of full load at nominal Vin)		150% typ
Overvoltage Protection (Single)		Zener Diode Clamp
Undervoltage Lockout		See Application Notes
Short Circuit Protection		Continuous, automatic recovery
Efficiency		see „Selection Guide“ table
Isolation Voltage	In to Out and I/O to Case	1600VDC min.
Isolation Resistance		10 GΩ min.
Isolation Capacitance		1500pF max.
Operating Frequency		300kHz typ.
Operating Temperature Range (no derating)	5, 12, 15, ±12, ±15V 3.3, ±5V	-40°C to +78°C -40°C to +74°C
Maximum Case Temperature		+105°C
Storage Temperature Range		-55°C to +125°C
Thermal Impedance	Natural convection	20°C/Watt
Case Material		Nickel-coated copper with non-conductive black plastic base
Potting Material		Epoxy (UL94-V0)
Weight		18g (DIP), 20g (SMD)
Packing Quantity	Refer to App Notes for tube dimensions	7pcs per Tube
Conducted Emissions (see note 3)	EN55022	Class A
Radiated Emissions	EN55022	Class A
ESD	EN61000-4-2	Perf. Criteria B
Radiated Immunity	EN61000-4-3	Perf. Criteria A
Fast Transient	EN61000-4-4	Perf. Criteria B
Surge	EN61000-4-5	Perf. Criteria B
Conducted Immunity	EN61000-4-6	Perf. Criteria A
Thermal Shock		MIL-STD-810D
Vibration		10-55Hz, 10G, 30 Min. along X, Y and Z
Relative Humidity		5% to 95% RH
MTBF (see note 2)	Bellcore-TR-NWT-000332	2350 x 10 ³ hours

Notes :

1. The ON/OFF control pin voltage is referenced to negative input.
2. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C (Ground fixed and controlled environment).
3. Vin=24V, fit a 1.0μF 1210 MLCC capacitor across the input pins to meet EN55022 Class A.
Vin=48V, fit a 0.47μF 1210 MLCC capacitor across the input pins to meet EN55022 Class A.
See application notes for Class B Filter suggestion.
4. Typical value at nominal input voltage and no load.
5. Maximum value at nominal input voltage and full load
6. Typical value at nominal input voltage and full load.
7. Test by minimum Vin and constant resistor load.

Package Style and Pinning (mm)

DIP24 Package Style



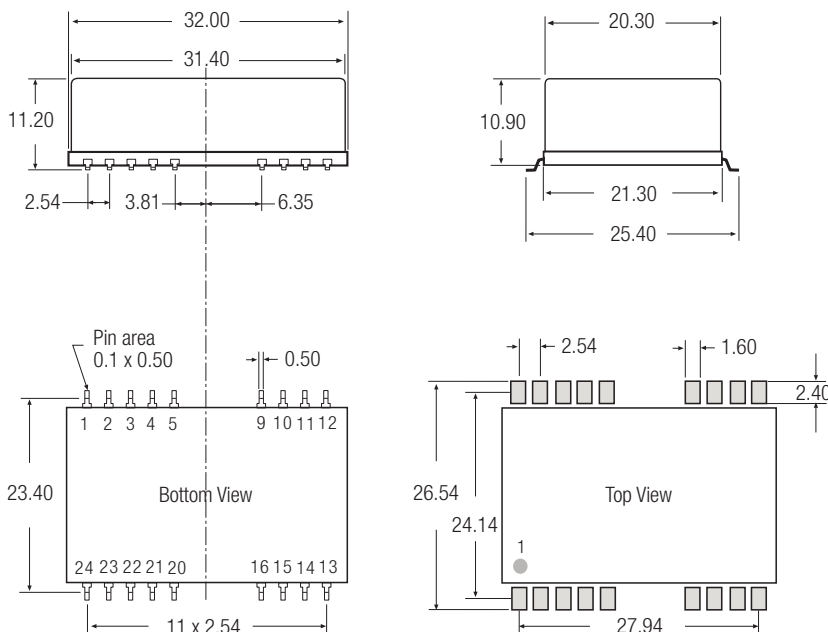
Pin Connections

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 ±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 ±0.35 mm