Features

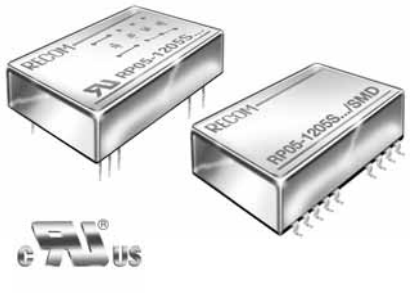
Regulated Converters

- 2:1 Wide Input Voltage Range
- 5 Watts Regulated Output Power
- 1.6kVDC Isolation
- Fixed Operating Frequency
- International Safety Standard Approvals
- Five-Sided Shield
- Standard DIP24 and SMD-Pinning
- UL 1950 Component Recognized
- High Efficiency to 84%

POWERLINE
DC/DC-Converter

RP05-S_DA Series

5 Watt DIP24 & SMD, Single & Dual Output



Selection Guide 12V, 24V and 48V Input Types

Part Number	Input Range	Output Voltage	Output Current	Input [4] Current	Efficiency[5]	Capacitive[6] Load max.
DIP24 (SMD)	VDC	VDC	mA	mA	%	µF
RP05-123.3SA**	9-18	3.3	1000	382	76	2200
RP05-1205SA**	9-18	5	1000	563	78	1000
RP05-1212SA**	9-18	12	470	603	82	220
RP05-1215SA**	9-18	15	400	649	81	150
RP05-243.3SA**	18-36	3.3	1000	194	75	2200
RP05-2405SA**	18-36	5	1000	284	77	1000
RP05-2412SA**	18-36	12	470	305	81	220
RP05-2415SA**	18-36	15	400	325	81	150
RP05-483.3SA**	36-75	3.3	1000	98	74	2200
RP05-4805SA**	36-75	5	1000	143	77	1000
RP05-4812SA**	36-75	12	470	151	82	220
RP05-4815SA**	36-75	15	400	162	81	150
RP05-1205DA**	9-18	±5	±500	563	78	±680
RP05-1212DA**	9-18	±12	±230	597	81	±100
RP05-1215DA**	9-18	±15	±190	617	81	±68
RP05-2405DA**	18-36	±5	±500	274	80	±680
RP05-2412DA**	18-36	±12	±230	288	84	±100
RP05-2415DA**	18-36	±15	±190	308	81	±68
RP05-4805DA**	36-75	±5	±500	141	78	±680
RP05-4812DA**	36-75	±12	±230	147	82	±100
RP05-4815DA**	36-75	±15	±190	154	81	±68

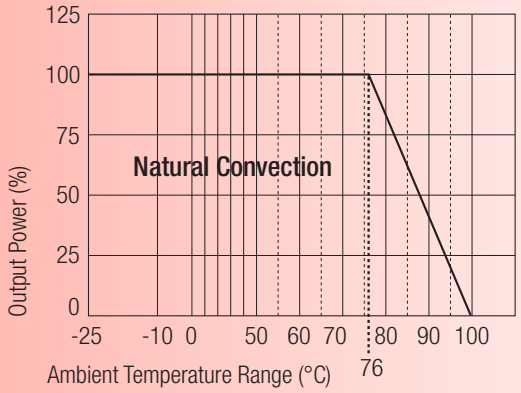
** add Suffix SMD for SMD package

Description

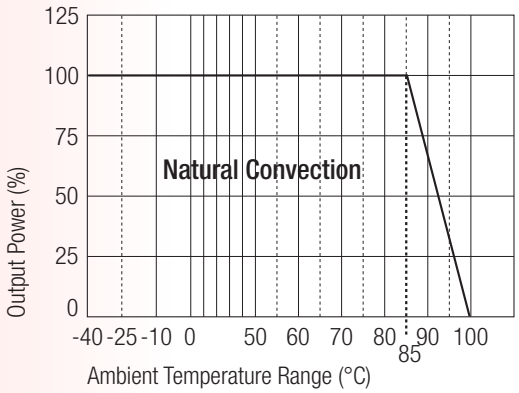
The A-Series of DC/DC Converters are fully certified to EN 60950: 2000.
This makes them ideal for all Telecom and safety applications where approved isolation is required.
They also meet UL 1950 and CSA 950 standards.

Derating-Graph (Ambient Temperature)

RP05-2415DA



RP05-2415DA/M1



Derating graphes 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 customer service at info@recom-development.at

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

Input Voltage Range	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.
Output Power		5W max.
Output Voltage Accuracy (full Load and nominal Vin)		±2%
Minimum Load (see Note 1)		10% of FL
Line Regulation (LL-HL at full load)		±0.2%
Load Regulation (25% to 100% FL)	Single	±0.2%
	Dual	±1%
Cross Regulation (asymmetrical load 25%/100% FL)		±5%
Ripple and Noise (20MHz bandwith)		50mVp-p
Temperature Coefficient		±0.02%/°C, max.
Transient Response (25% load step change)		200µS
Over Load Protection (% of full load at nominal Vin)		170% typ
Short Circuit Protection		Continuous, automatic recovery
Efficiency		see „Selection Guide“ table

continued on next page

RP05-S_DA Series

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

Isolation Voltage	In to out	1.600VDC min.
	I/O to case	DIP type 1.600VDC min.
	I/O to case	SMD type 1.000VDC min.
Isolation Resistance		10^9 Ω min.
Isolation Capacitance		300pF max.
Operating Frequency		300kHz typ.
Approved to Safety Standards		UL 1950, EN60950
Operating Temperature Range	Standard	-25°C to +85°C (with derating)
	M1 (see note 3)	-40°C to +85°C (non-derating)
Maximum Case Temperature		+100°C
Storage Temperature Range		-55°C to +105°C
Thermal Impedance	Natural convection	20°C/Watt
Thermal Shock		MIL-STD-810D
Vibration		10-55Hz, 2G, 30 Min. along X, Y and Z
Relative Humidity		5% to 95% RH
Case Material		Nickel-Coated copper
Base Material		Non-conductive black plastic
Potting Material		Epoxy (UL94-V0)
Conducted Emissions	EN55022	Level A
Radiated Emissions	EN55022	Level A
ESD	EN61000-4-2	Perf. Criteria 2
Radiated Immunity	EN61000-4-3	Perf. Criteria 2
Fast Transient	EN61000-4-4	Perf. Criteria 2
Surge	EN61000-4-5	Perf. Criteria 2
Conducted Immunity	EN61000-4-6	Perf. Criteria 2
Weight	DIP	16g
	SMD	18g
Dimensions	DIP	31.8 x 20.3 x 10.2mm
	SMD	32.0 x 20.3 x 10.9mm
MTBF (see note 2)		3.165 x 10^6 Hours

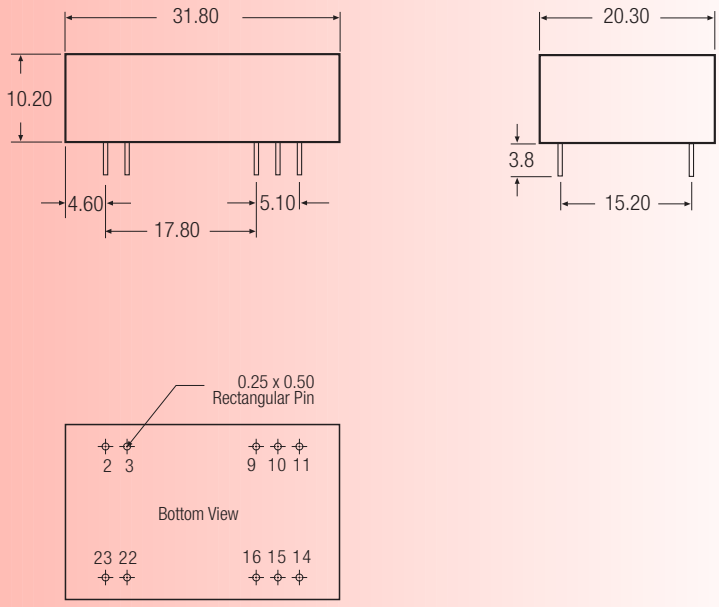
Notes :

1. The RP05 A 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. M1 version is more efficient, therefore, it can be operated in a more extensive temperature range than the standard version.
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. Simulated source impedance of 12uH. 12uH inductor on series with +Vin.
8. See application notes for EMI-filtering.

Package Style and Pinning (mm)

DIP24 Package Style

3rd angle projection



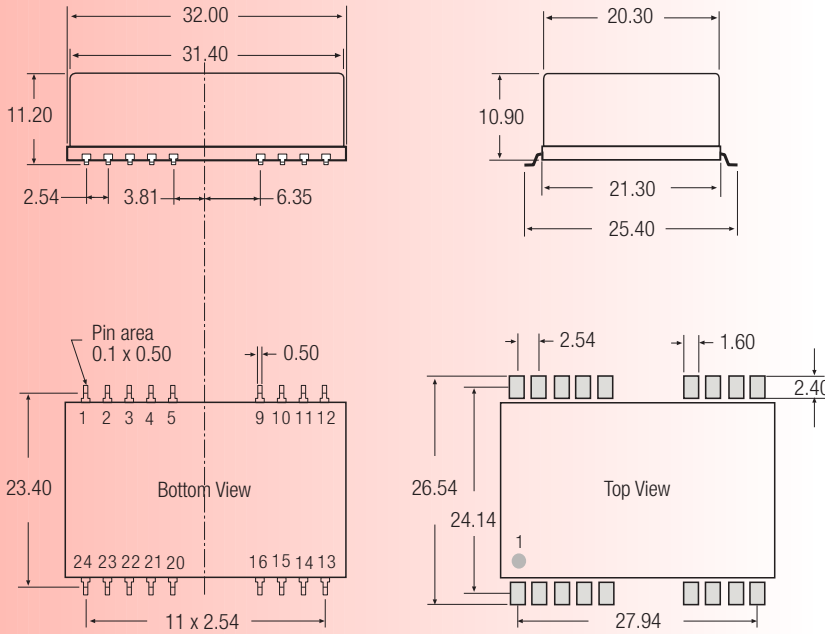
Pin Connections

Pin #	Single	Dual
2	–Vin	–Vin
3	–Vin	–Vin
9	NC	Com
10	NC	NC
11	NC	–Vout
14	+Vout	+Vout
15	NC	NC
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
2	–Vin	–Vin
3	–Vin	–Vin
9	NC	Com
10	NC	NC
11	NC	–Vout
14	+Vout	+Vout
15	NC	NC
16	–Vout	Com
22	+Vin	+Vin
23	+Vin	+Vin
Others	NC	NC

NC = No Connection

Pin Pitch Tolerance ±0.35 mm