

Features

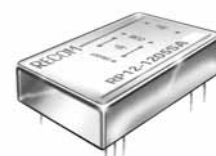
- 2:1 Wide Input Voltage Range
- 12 Watts Output Power
- 1.6kVDC Isolation
- Over Current Protection
- Five-Sided Continuous Shield
- Standard DIP24 and SMD-Pinning
- Efficiency to 88%

POWERLINE

DC/DC-Converter

RP12-S_DA Series

**12 Watt
DIP24,
Single & Dual
Output**

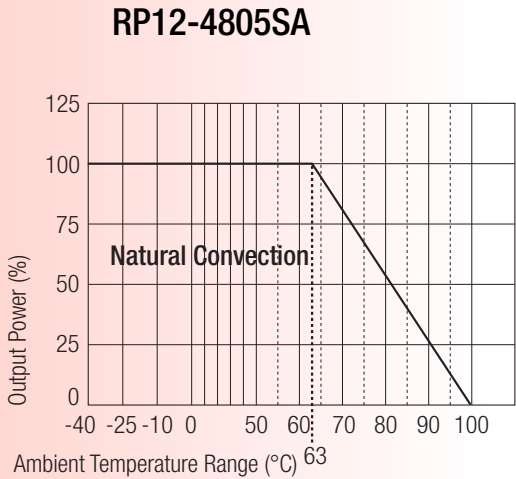


RECOM

Selection Guide 5V, 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
RP12-122.5SA	9-18	2.5	3500	1687	82	2000
RP12-123.3SA	9-18	3.3	3500	1646	84	2000
RP12-1205SA	9-18	5	2400	1606	86	2000
RP12-1212SA	9-18	12	1000	1606	86	430
RP12-1215SA	9-18	15	800	1606	86	300
RP12-242.5SA	18-36	2.5	3500	843	83	2000
RP12-243.3SA	18-36	3.3	3500	823	85	2000
RP12-2405SA	18-36	5	2400	803	87	2000
RP12-2412SA	18-36	12	1000	803	87	430
RP12-2415SA	18-36	15	800	803	87	300
RP12-482.5SA	36-75	2.5	3500	422	83	2000
RP12-483.3SA	36-75	3.3	3500	411	85	2000
RP12-4805SA	36-75	5	2400	401	87	2000
RP12-4812SA	36-75	12	1000	401	87	430
RP12-4815SA	36-75	15	800	401	87	300
RP12-1205DA	9-18	±5	±1200	1687	82	±1250
RP12-1212DA	9-18	±12	±500	1626	87	±200
RP12-1215DA	9-18	±15	±400	1626	87	±120
RP12-2405DA	18-36	±5	±1200	843	83	±1250
RP12-2412DA	18-36	±12	±500	813	88	±200
RP12-2415DA	18-36	±15	±400	813	88	±120
RP12-4805DA	36-75	±5	±1200	422	83	±1250
RP12-4812DA	36-75	±12	±500	406	88	±200
RP12-4815DA	36-75	±15	±400	406	88	±120

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 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
Under Voltage Lockout	12V Input DC-DC ON	9VDC
	DC-DC OFF	8VDC
	24V Input DC-DC ON	18VDC
	DC-DC OFF	16VDC
	48V Input DC-DC ON	36VDC
	DC-DC OFF	33VDC
Input Filter	Pi Type	
Input Voltage Variation dv/dt	(Complies with ETS300 132 part 4.4)	5V/ms max.
Input Surge Voltage (100 ms max.)	12V Input	36VDC
	24V Input	50VDC
	48V Input	100VDC
Input Reflected Ripple (nominal Vin and full load)	20mA _{p-p}	
Start Up Time (nominal Vin and constant resistor load)	600ms typ.	
Remote ON/OFF (see note 8)	DC-DC ON	Open or 3.5V < Vr < 12V
	DC-DC OFF	Short or 0V < Vr < 1.2V
Remote OFF input curren	Nominal input	2.5mA
Output Power	12W max.	
Output Voltage Accuracy (full Load and nominal Vin)	±1.2%	
Minimum Load (see Note 1)	10% of FL	

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

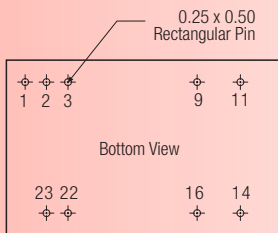
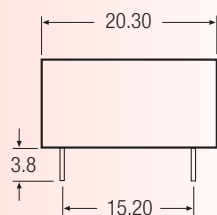
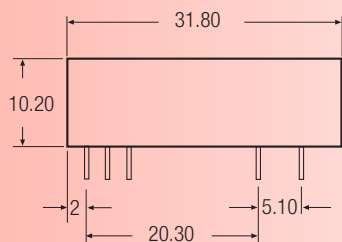
Line Regulation (LL-HL at full load)	Single	±0.2%
	Dual	±0.5%
Load Regulation (25% to 100% FL)	Single	±0.5%
	Dual	±1%
	(only 2.5Vout)	±1.5%
Cross Regulation (asymmetrical load 25%/100% FL)		±5%
Ripple and Noise (20MHz bandwidth)		85mVp-p
Temperature Coefficient		±0.02%/°C, max.
Transient Response (25% load step change)		300µs
Over Voltage Protection	2.5V	3.9V
Zener diode clamp (only single)	3.3V	3.9V
	5V	6.2V
	12V	15V
	15V	18V
Over Load Protection (% of full load at nominal Vin)		150% typ
Short Circuit Protection		Continuous, automatic recovery
Efficiency		see „Selection Guide“ table
Isolation Voltage	In to out	1.600VDC min.
	I/O to case	1.600VDC min.
Isolation Resistance		10 ⁹ Ω min.
Isolation Capacitance		1200pF max.
Operating Frequency		400kHz typ.
Operating Temperature Range		-40°C to +85°C(with 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	Class A
Radiated Emissions	EN55022	Class 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		18g
Dimensions		31.8 x 20.3 x 10.2mm
MTBF (see note 2)		2.750 x 10 ⁶ Hours

Notes :

- 1. The RP12 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. Simulated source impedance of 12uH. 12uH inductor in series with +Vin.
- 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. See application notes for EMI-filtering.

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