

Features

Regulated Converters

- 2:1 Wide Input Voltage Range
- 3 Watts Regulated Output Power
- 1.6kVDC Isolation
- Over Current Protection Continuous
- Low Profile, 10.2 mm Height
- No other Components required
- Five-Sided Shield
- International Safety Standard Approvals
- Standard DIP24 and SMD-Pinning
- 2 Year Warranty
- No Derating to 71°C
- Efficiency to 80%

POWERLINE

DC/DC-Converter

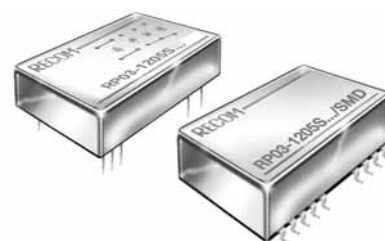
RP03-S_DC Series

**3 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
RP03-1205SC**	9-18	5	500	290	76	1000
RP03-1212SC**	9-18	12	250	329	80	220
RP03-1215SC**	9-18	15	200	334	79	150
RP03-2405SC**	18-36	5	500	151	73	1000
RP03-2412SC**	18-36	12	250	169	78	220
RP03-2415SC**	18-36	15	200	171	77	150
RP03-4805SC**	36-75	5	500	75	73	1000
RP03-4812SC**	36-75	12	250	84	79	220
RP03-4815SC**	36-75	15	200	84	80	150
RP03-1205DC**	9-18	±5	±250	290	76	±470
RP03-1212DC**	9-18	±12	±125	334	79	±100
RP03-1215DC**	9-18	±15	±100	334	79	±68
RP03-2405DC**	18-36	±5	±250	151	73	±470
RP03-2412DC**	18-36	±12	±125	174	76	±100
RP03-2415DC**	18-36	±15	±100	171	77	±68
RP03-4805DC**	36-75	±5	±250	76	73	±470
RP03-4812DC**	36-75	±12	±125	85	78	±100
RP03-4815DC**	36-75	±15	±100	86	77	±68

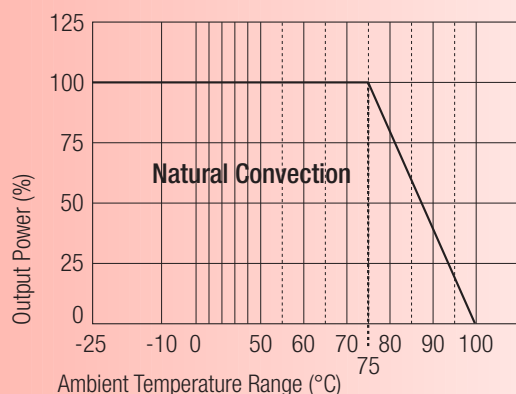
** add Suffix SMD for SMD package



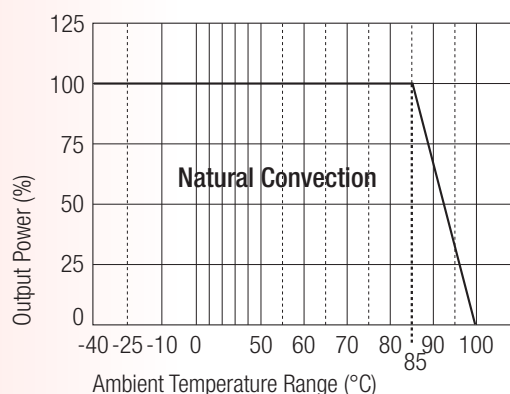
RECOM

Derating-Graph (Ambient Temperature)

RP03-4805SC



RP03-4805SC/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)	20mA _{p-p}	
Start Up Time (nominal Vin and constant resistor load)	350ms typ.	
Output Power	3W 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 bandwidth)	50mV _{p-p}	
Temperature Coefficient	±0.02%/°C, max.	
Transient Response (25% load step change)	200μS	
Over Load Protection (% of full load at nominal Vin)	180% typ	
Short Circuit Protection	Continuous, automatic recovery	
Efficiency	see „Selection Guide“ table	

continued on next page

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

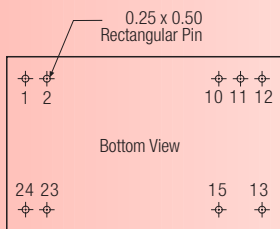
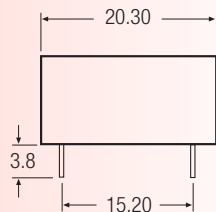
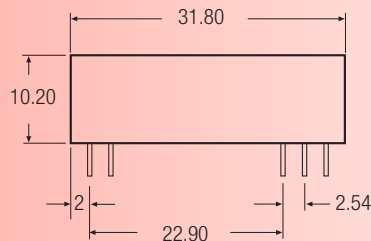
Isolation Voltage	In to out	1.600VDC min.
	I/O to case	DIP type 1.600VDC min.
	I/O to case	SMD type 1.000VDC min.
Isolation Resistance		10 ⁹ Ω min.
Isolation Capacitance		300pF max.
Operating Frequency		300kHz typ.
Operating Temperature Range	Standard	-25°C to +85°C (with derating)
	M1 (see note 3)	-40°C 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)		3.139 x 10 ⁶ Hours

Notes :

1. The RP03 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 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. See application notes for EMI-filtering.

Package Style and Pinning (mm)

DIP24 Package Style



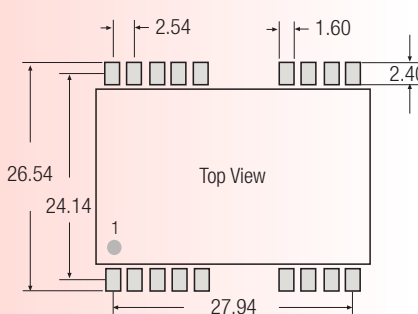
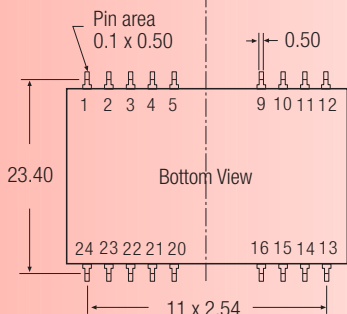
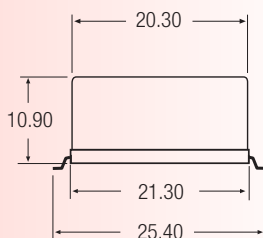
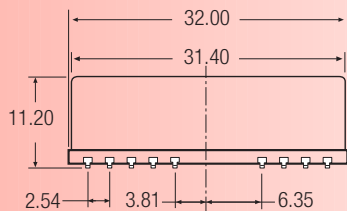
Pin Connections

Pin #	Single	Dual
1	+Vin	+Vin
2	+Vin	+Vin
10	NC	Com
11	NC	Com
12	-Vout	NC
13	+Vout	-Vout
15	NC	+Vout
23	-Vin	-Vin
24	-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	+Vin	+Vin
2	+Vin	+Vin
10	NC	Com
11	NC	Com
12	-Vout	NC
13	+Vout	-Vout
15	NC	+Vout
23	-Vin	-Vin
24	-Vin	-Vin
Others	NC	NC

NC = No Connection

Pin Pitch Tolerance ± 0.35 mm