Features

- 2:1 Wide Input Voltage Range
- 49 Watts Output Power
- 1.6kVDC Isolation
- Fixed Operating Frequency
- Six-Sided Continuous Shield
- Design Meet Safety Standard
- Standard 50.8 x50.8x10.2mm Package
- Efficiency to 87%

POWERLINE
DC/DC-Converter

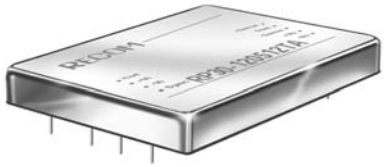
RP30-TA Series

49 Watt Triple Output

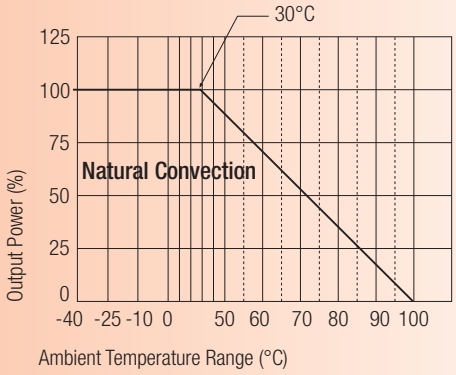
Selection Guide 12V, 24V and 48V Input Types

Part Number	Input Range	Output Voltage	Output Current	Input [3] Current	Efficiency[4]	Capacitive[5] Load max.
	VDC	VDC	mA	mA	%	µF
RP30-120512TA	9-18	5 / ±12	5000 / ±1000	5041	85	5700/±855
RP30-240512TA	18-36	5 / ±12	5000 / ±1000	2431	87	6800/±330

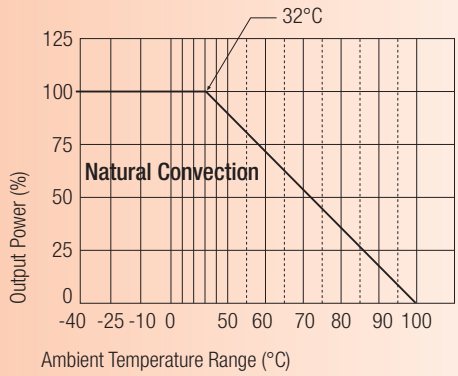
Derating-Graph (Ambient Temperature)



RP30-120512TA

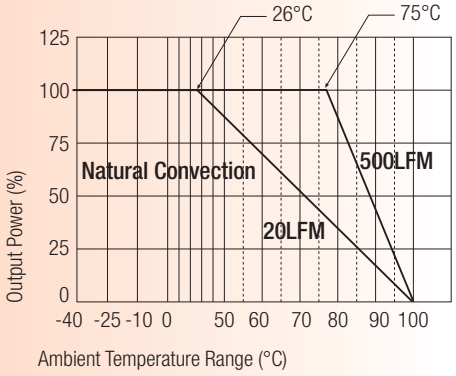


RP30-240512TA

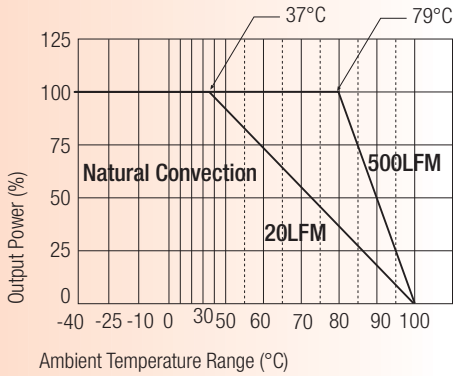


Derating-Graph (Ambient Temperature)

RP30-120512TA With Heat Sink



RP30-240512TA With Heat Sink



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

Input Voltage Range	12V nominal input 24V nominal input	9-18VDC 18-36VDC
Input Filter (see note 12)		LC Type
Input Surge Voltage (100 ms max.)	12V Input 24V Input	36VDC 50VDC
Input Reflected Ripple (nominal Vin and full load) (see note 2)		40mAp-p
Start Up Time (nominal Vin and constant resistor load)		25ms typ.
Remote ON/OFF (see note 6) Remote OFF input current	DC-DC ON DC-DC OFF Nominal input	Open or 3.5V < Vr < 12V Short or 0V < Vr < 1.2V 2.5mA
Output Power		49W max.
Output Voltage Accuracy (full Load and nominal Vin)	Triple 5V Auxiliary	±1% ±3%
Voltage Adjustability		±10%
Minimum Load (see note 8)		10% of FL

continued on next page

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

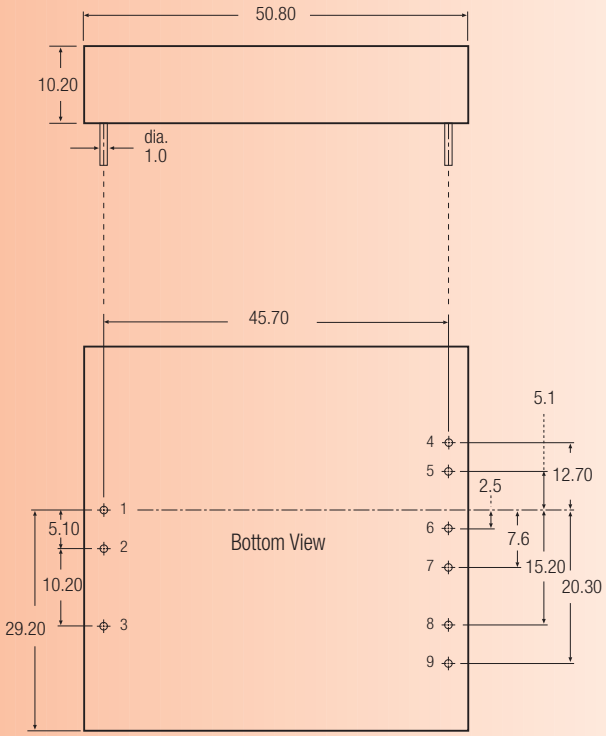
Line Regulation (LL-HL at full load)	Triple 5V Auxiliary	±1% ±5%
Load Regulation (25% to 100% FL) (see note 9)	Triple 5V Auxiliary	±2% ±5%
Cross Regulation (Note 10)	Triple, 5V Auxiliary	±1% ±5%
Ripple and Noise (20MHz bandwith) (measured with a 10487/50V MLCC) (see note 11)	+5V ±12V	50mVp-p 25mVp-p
Temperature Coefficient		±0.02%/°C, max.
Transient Response (25% load step change)		400µS
Short Circuit Protection		Hiccup, automatic recovery
Efficiency		see „Selection Guide“ table
Isolation Voltage		1600VDC min.
Isolation Resistance		10^9 Ω min.
Isolation Capacitance		500pF max.
Operating Frequency (see note 13)		300kHz 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	9.2°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 FR4
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		60g
Dimensions		50.8 x 50.8 x 10.2mm
MTBF (see note 1)		1.398 x 10^6 Hours

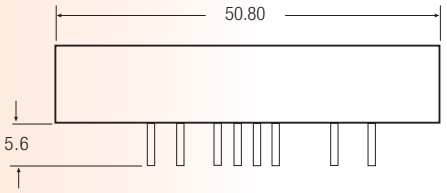
Notes :

1. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C (Ground fixed and controlled environment).
2. Simulated source impedance of 12uH. 12uH inductor in series with +Vin.
3. Maximum value at nominal input voltage and full load of standard type.
4. Typical value at nominal input voltage and full load.
5. Test by minimum Vin and constant resistor load.
6. The ON/OFF control pin voltage is referenced to negative input.
7. Heat sink is optional and P/N: 7G-0026A.
8. The triple output required a minimum 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.
9. Load regulation for triple output: Main output(V1):10 to 100% with 10% to 100% balanced on auxiliaries. Auxiliary outputs(V2 and V3):10% to 100% balanced on all outputs.
10. Cross regulation for triple output: Main output 100% load, auxiliary 100%,other auxiliary25% to 100% load. Auxiliary outputs(V2 and V3):main output 100% load, auxiliary 100%, other auxiliary 25% to 100% or main output 25%,auxiliary 25%,other auxiliary 25% to 100%.
11. The models of RP30-XX0512TA are specified with a 1uF ceramic output capacitors.
12. An external filter capacitor is required for normal operation. The capacitor should be capable of handing 1A ripple current for 12V/24V models. RECOM suggest: Nippon chemi-con KMF series, 470µF/50V, ESR 90m Ω.
13. Operating frequency for triple output: master (5Vo) 300KHz slave .

Package Style and Pinning (mm)

3rd angle projection





Pin Connections

Pin #	Triple
1	+Vin
2	-Vin
3	CTRL
4	+Aux
5	Com
6	-Aux
7	+Vout
8	-VoutCom)
9	NC

NC = No Connection

Pin Pitch Tolerance ±0.35 mm