Features

ICE Technology*

- Up to 96°C ambient, no derating
- 120°C Maximum Case Temperature
- -45°C MinimumTemp.
- Built-in FCC/EN55022 Class B Filter
- 2:1 Wide Input Voltage Range
- Six Sided Shielded Enclosure
- Ribbed or Baseplate Case Styles
- Efficiency to 92%
- 3kVDC Isolation
- Low Quiescent Current

Description

The RPP30 series 2:1 input range DC/DC converters are ideal for high end industrial applications and COTS Military applications where a very wide operating temperature range of -45°C to +120°C is required. Although the case size is compact, the converter contains a built-in filter EN55022 Class B / FCC Level B without the need for any external components. The RPP30 is available in two case styles: the high operating temperature ribbed case and the baseplate case for high vibration or bulkhead-mounting applications. They are UL-60950-1 certified.

Selection Guide 12V, 24V and 48V Input Types Part Number Input Output Output Input⁽¹⁾ Efficiency(2) Max(3) Range Voltage Current Current Operating **VDC** VDC mΑ mA Temp RPP30-123.3S 9-18 3.3 8500 78/2666 87.5% 86°C RPP30-1205S 5 109/2768 91°C 9-18 6000 90.3% RPP30-1212S 12 26/2784 89°C 9-18 2500 89.8% RPP30-1215S 15 2000 31/2775 91°C 9-18 90.1% RPP30-1224S 91°C 9-18 24 1250 31/2775 90.1% RPP30-243.3S 89°C 18-36 3.3 8000 59/1394 89.7% RPP30-2405S 18-36 5 93°C 6000 62/1372 91.1% RPP30-2412S 91°C 18-36 12 2500 18/1400 90.4% RPP30-2415S 18-36 15 2000 18/1380 91.4% 94°C RPP30-2424S 94°C 18-36 24 1250 18/1380 91.4% RPP30-483.3S 36-75 3.3 8000 24/697 89.6% 89°C RPP30-4805S 36-75 5 6000 37/680 92.0% 96°C RPP30-4812S 36-75 12 2500 11/687 94°C 91.0% RPP30-4815S 36-75 15 2000 12/682 91.6% 94°C RPP30-4824S 36-75 24 1250 12/682 91.6% 94°C RPP30-1212D 9-18 29/2790 89°C ±12 ±1250 89.6% RPP30-1215D 9-18 ±15 ±1000 33/2784 89.8% 89°C RPP30-1224D 9-18 +24 ±625 33/2784 89.8% 89°C RPP30-2412D 86°C 18-36 ±12 ±1250 20/1300 88.4% RPP30-2415D 18-36 ±1000 10/1392 89.8% 89°C ±15 RPP30-2424D 18-36 +24 ±625 10/1384 90.3% 91°C RPP30-4812D 87°C 36-75 ±12 ±1250 11/647 88.8% RPP30-4815D 36-75 ±1000 12/689 90.7% 94°C ±15

36-75

For other CTRL logic or case style options please contact RECOM for availability.

±625

±24

**SUFFIX INFORMATION

RPP30-4824D

none = Standard Ribbed Case -B = Baseplate Case Derating graphs are valid only for the shown part numbers. Please contact Technical Support for more information info@recom-development.at

90.7%

94°C

26/622

POWERLINE+

DC/DC-Converter with 3 year Warranty



30 Watt 2:1 Single & Dual Output

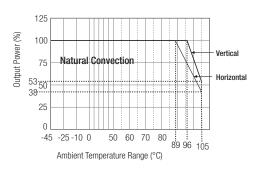


RPP30

E224736

Derating Graph (Ambient Temperature)

RPP30-4805S



* ICE Technology

ICE (Innovation in Converter Excellence) uses state-of-the-art techniques to minimise internal power dissipation and to increase the internal temperature limits to extend the ambient operating temperature range to the maximum. Refer to Application Notes

^{**} add suffix for case options

DC/DC-Converter

RPP30-5_D Series

124	Specifications (typical at nominal input and 25°C unless otherwise noted)			
Medical Polician Medical Po		12V nomin	al input	9-18VDC
Part Voltage Lookout			•	18-36VDC
Part		48V nomin	al input	36-75VDC
24V input 0.0.0.0 (N min 17.5 NO.0 (N min 3.5 No.0 (N min	Under Voltage Lockout	12V input		
Part		0.077	, ,	
		24V input		
Imput Filler Common Mode EMCType Imput Filler SV/ms max Imput Surge Voltage (100 ms max) 12V, 24V Imput 5,00W C 46V Imput 1,000W C 46V Impu		48V input	DC-DC ON (min.)	35VDC
Input Voltage Variation dv/dt (Complies with ETS300 132 part 4.4) Input Surge Voltage (100 ms max.) 12V, 24V Input 50V/DC Input Reflected Ripple nominal Vin and full load 30m/Ap-p Start Up Time nominal Vin and constant resistor load 2ms bp., 5ms max. Remote OFF DC-DC ON Open or 3.0V < V < 5.5V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V < V < 5.0V Remote OFF Short or V V < V < 5.0V Remote OFF Short or V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V < 5.0V Remote OFF Short or V V V Remote OFF Short or V V V V			DC-DC OFF (max.)	34VDC
Input Surge Voltage (100 ms max.)	Input Filter			Common Mode EMCType
A8V Input 100VDC 10put Reflected Rippile 10put Reflected Rippile R	Input Voltage Variation dv/dt (Complies with ETS300 132 part 4.4)			5V/ms max
Input Reflected Ripple nominal Vin and full load 30mAp-p Start Up Time nominal Vin and constant resistor load 2ms tpp. 5ms max. Remote ON/OFF DC-DC OFF Short or 0 × 1 × 1 < 2m A bp. DC-DC OFF Short or 0 × 1 × 1 < 2m A bp. Dutput Power Short or 0 × 1 × 1 < 2m A bp. Dutput Power Short or 0 × 1 × 1 < 2m A bp. Dutput Power Short or 0 × 1 × 1 < 2m A bp. Dutput Power Short or 0 × 1 × 1 < 2m A bp. Dutput Voltage Accuracy 50% Load and nominal Vin	Input Surge Voltage (100 ms max.)	12V, 24V Input		
Start Up Time nominal Vin and constant resistor load 2ms byp., 5ms max. Remote ON/OFF ⁶⁴ DC-DC ON DC-DC OFF Open or 3.0V < V < 5.5V OFF		48V Input		100VDC
Remote ON/OFF ⁶⁶ DC-DC ON OC-DC OFF OC-DF OC-DF Short or OV < Vr < 1.2V Remote OFF input current OC-DC OFF OC-DF Short or OV < Vr < 1.2V Remote OFF input current Short or OV < Vr < 1.2V Remote OFF input current Output Power 50% Load and nominal Vin ±1.5% Own max Output Voltage Accuracy 50% Load and nominal Vin ±1.5% Own max Voltage Adjustability Single Output only ±1.0% Minimum Load 0% Line Regulation 10w line, high line at full load ±0.3% Load Regulation 10w line, high line at full load ±0.5% Cross Regulation (10% <> 100% Load) ±0.5% Cross Regulation (10% <> 100% Load) Dual Outputs only 3% typ.7 5% max Ripport and Noise (20MHz bandwith limited) 3.3V, 5V 60mVp-10 typ. max Ripport and Noise (20MHz bandwith limited) 3.3V, 5V 60mVp-10 typ. max 25mV-45mVp-10 max Temperature Coefficient ±0.04%**Cross x. ±0.04%**Cross x. Tarnsient Response 25% load step change 800us Over Load Protection *0 full load at nominal Vin 120% typ. Short Circuit Protection *0 full load at nominal Vin 120% typ. Stolation Resistance	Input Reflected Ripple	nominal Vir	n and full load	30mAp-p
Remote OFF input current		nominal Vir	n and constant resistor lo	
Remote OFF input current Nominal input 2mA typ. Output Power 30W max. Output Voltage Accuracy 50% Load and nominal Vin ±1.5% Voltage Adjustability 50% Load and nominal Vin ±1.0% Minimum Load 10% 10% Line Regulation 10w line, high line at full load ±0.3% Load Regulation 10% to 100% full load ±0.5% Cross Regulation (10% <> 100% Load) 3.3%, 50 60mVp-p-typ. Ripple and Noise (20MHz bandwith limited) 3.3%, 50 60mVp-p-typ. measured with I fur Expection scross outputs) All offers 25mV-45mVp- max. Ripple and Noise (20MHz bandwith limited) 3.3%, 50 60mVp-p-typ. measured with I fur Expection scross outputs) All offers 25mV-45mVp- max. Tansient Response 25% load step change 800µs Over Load Protection Power Limit, automatic recovery Output Over Voltage Protection (refer to block diagram in Application Notes) Rated at 2250Vc/1 minute, Flash tested 3000VbC/1 second Solution Capacitance (refer to block diagram in Application Notes) Rated at 2250vc/t minute, Flash tested xin of the Application Application No	Remote ON/OFF (4)		_	•
Output Power 30W max. Output Voltage Accuracy 50% Load and nominal Vin ±1.5% Voltage Adjustability Single Output only ±10% Minimum Load 0% Line Regulation low line, high line at full load ±0.3% Load Regulation (10% <> 100% Load) 10% to 100% full load ±0.5% Cross Regulation (10% <> 100% Load) Dual Outputs only 3% typ.75 max Ripple and Noise (20MHz bandwith limited) 3.3%, 5V 60mWp-p typ. (measured with 1µF capacitor across outputs) All others 25mV-45mVp-p max Temperature Coefficient ±0.04%/*C max. 17msient Response 25% load step change 800µs Over Load Protection % of full load at nominal Vin 120% typ. 120% typ. Short Circuit Protection (refer to block diagram in Application Notes) Converter shutdown if Vous > Vout nominal + 20% 120% typ. Stolation Voltage Rated at 2250VDC/1 minute, Flash tested at 3000VDC/1 second stolation Resistance 10MΩ min. Isolation Capacitance (refer to block diagram in Application Notes) Converter shutdown if Vous > Vout nominal + 20% Solation Preparature Range 45°C to +96°C max with detarting hard store the preparature Ran	Remote OFF input current			
Output Voltage Accuracy 50% Load and nominal Vin ±1.5% Voltage Adjustability Single Output only ±10% Minimum Load 0% Line Regulation low line, high line at full load ±0.3% Load Regulation 10% to 100% full load ±0.5% Cross Regulation (10% <> 100% Load) Dual Outputs only 3% typ. 5% max. Ripple and Noise (20MHz bandwith limited) 3.3V, 5V 60mVp-p typ. max. Rimperature Coefficient ±0.04%/°C max. Transient Response 25% load step change 800µs Over Load Protection % of full load at nominal Vin 120% typ. Short Circuit Protection Power Limit, automatic recovery Output Over Voltage Protection (refer to block diagram in Application Notes) Converter shutdown if Vout > Vout nominal + 20% Isolation Voltage Rated at 2250VDC/1 minute, Flash tested at 3000VDC/1 second Isolation Capacitance (refer to block diagram in Application Notes) Converter shutdown if Vout > Vout nominal + 20% Operating Frequency 260kHz ± 40kHz Operating Frequency Ambient, Free Convection -45°C to +96°C max (without dreating) Maximum Case Temperature R		Trommai m		
Voltage Adjustability Single Output only ± 10% Minimum Load 0% Line Regulation low line, high line at full load ± 0.3% Load Regulation 10% to 100% full load ± 0.5% Cross Regulation (10% <> 100% Load) Dual Outputs only 3% typ.7 5% max. Ripple and Noise (20MHz bandwith limited) 3.3V, 5V 60mVp-p typ. Reasured with Irpl capactor across outputs) All others 25mV-45mVp-p max. Temperature Coefficient ± 0.04%/°C max. Transient Response 25% load step change 800µs Over Load Protection % of full load at nominal Vin 120% typ. Short Circuit Protection Power Limit, automatic recovery Output Over Voltage Protection (refer to block diagram in Application Notes) Converter shutdown if Vout > Vout nominal + 20% Solation Nottage Rated at 2250VDC/1 minute, Flash tested at 3000VDC/1 second Solation Resistance Solation Capacitance (refer to block diagram in Application Notes) Ambient, Free Convection 45°C to +96°C max (without derating) Maximum Case Temperature Range Ambient, Free Convection 45°C to +105°C max (with derating) Maximum Case Temperatu	-	50% Load	and nominal Vin	
Minimum Load				
Load Regulation10% to 100% full load±0.5%Cross Regulation (10% <> 100% Load)Dual Outputs only3% typ./5% max.Ripple and Noise (20MHz bandwith limited) (measured with 1µF capacitor across outputs)3.3V, 5V60mVp-p typ.All others25mV-45mVp-p max.Temperature Coefficient±0.04%/°C max.Transient Response25% load step change800µsOver Load Protection% of full load at nominal Vin120% typ.Short Circuit ProtectionPower Limit, automatic recoveryOutput Over Voltage Protection (refer to block diagram in Application Notes)Converter shutdown if Vout > Vout nominal + 20%Isolation VoltageRated at 2250VDC/1 minute, Flash tested at 3000VDC/1 secondIsolation Capacitance (refer to block diagram in Application Notes)3000pF max.Operating Frequency260kHz ± 40kHzOperating Temperature RangeAmbient, Free Convection-45°C to +96°C max (without derating)Maximum Case Temperature RangeAmbient, Free Convection-45°C to +96°C max (with derating)Maximum Case Temperature RangeFibbed Case: Vertical7.3°C/WattThermal Impedance (Natural convection)Ribbed Case: Horizontal7.3°C/WattRelative Humidity5% to 95% RHCase Material (P)AluminiumPotting MaterialSilicone (UL94-VO)		3 - 1	· · · · · · · ·	
Load Regulation 10% to 100% full load ±0.5% Cross Regulation (10% <> 100% Load) Dual Outputs only 3% typ/5% max. Ripple and Noise (20MHz bandwith limited) 3.3V, 5V 60mVp-p typ. (measured with 1µF capacitor across outputs) All others 25mV-45mVp-p max. Temperature Coefficient ±0.04%/°C max. 35mV-45mVp-p max. Transient Response 25% load step change 800µs Over Load Protection % of full load at nominal Vin 120% typ. Short Circuit Protection Power Limit, automatic recovery Output Over Voltage Protection (refer to block diagram in Application Notes) Converter shutdown if Vout > Vout nominal + 20% Isolation Voltage Rated at 2250VDC/1 minute, Flash tested at 3000VDC/1 second Isolation Capacitance (refer to block diagram in Application Notes) 3000pF max. Operating Frequency 260kHz ± 40kHz Operating Temperature Range Ambient, Free Convection -45°C to +96°C max (without derating) Maximum Case Temperature +120°C Storage Temperature Range Fibbed Case: Vertical 7.3°C/Watt Thermal Impedance (Natural convection) Ribbed Case: Horizontal 7.3°C	Line Regulation	low line, hi	gh line at full load	±0.3%
Cross Regulation (10% <> 100% Load) Dual Outputs only 3% typ/5% max. Ripple and Noise (20MHz bandwith limited) 3.3V, 5V 60mVp-p typ. (measured with 1µF capacitor across outputs) All others 25mV-45mVp-p max. Temperature Coefficient ±0.04%/°C max. ±0.04%/°C max. Transient Response 25% load step change 800µs Over Load Protection % of full load at nominal Vin 120% typ. Short Circuit Protection Power Limit, automatic recovery Output Over Voltage Protection (refer to block diagram in Application Notes) Converter shutdown if Vout > Vout nominal + 20% Isolation Voltage Rated at 2250VDC/1 minute, Flash tested at 3000VDC/1 second Isolation Resistance 10MΩ min. Isolation Capacitance (refer to block diagram in Application Notes) 3000pF max. Operating Frequency Ambient, Free Convection -45°C to +96°C max (without derating) Maximum Case Temperature Range Ambient, Free Convection -45°C to +105°C max (with derating) Maximum Case Temperature Protection (refer to block diagram in Application Notes) internal thermistor Thermal Impedance (Natural convection) Ribbed Case: Vertical (Natural convection) 7.3°C/Watt (Natural convection) 7.3°C/Watt (Natural convection) </td <td>Load Regulation</td> <td>10% to 10</td> <td>0% full load</td> <td>±0.5%</td>	Load Regulation	10% to 10	0% full load	±0.5%
Ripple and Noise (20MHz bandwith limited) (neasured with 1μF capacitor across outputs) 3.3V, 5V All others 60mVp-p typ. (nemasured with 1μF capacitor across outputs) 40.04%/°C max. Temperature Coefficient ±0.04%/°C max. ±0.04%/°C max. Transient Response 25% load step change 800μs Over Load Protection % of full load at nominal Vin 120% typ. Short Circuit Protection Power Limit, automatic recovery Output Over Voltage Protection (refer to block diagram in Application Notes) Converter shutdown if Vout > Vout nominal + 20% Isolation Voltage Rated at 2250VDC/1 minute, Flash tested at 3000VDC/1 second Isolation Capacitance (refer to block diagram in Application Notes) 3000pF max. Operating Frequency 260kHz ± 40kHz Operating Temperature Range Ambient, Free Convection -45°C to +96°C max (with derating) +45°C to +105°C max (with derating) +45°C max (with derat	Cross Regulation (10% <> 100% Load)	Dual Outpu	its only	3% typ./ 5% max.
Temperature Coefficient±0.04%/°C max.Transient Response25% load step change800µsOver Load Protection% of full load at nominal Vin120% typ.Short Circuit ProtectionPower Limit, automatic recoveryOutput Over Voltage Protection (refer to block diagram in Application Notes)Converter shutdown if Vout > Vout nominal + 20%Isolation VoltageRated at 2250VDC/1 minute, Flash tested at 3000VDC/1 secondIsolation Capacitance (refer to block diagram in Application Notes)3000pF max.Operating Frequency260kHz ± 40kHzOperating Temperature RangeAmbient, Free Convection-45°C to +96°C max (without derating) -45°C to +105°C max (with derating)Maximum Case Temperature+120°CStorage Temperature Range-55°C to +125°COver Temperature Protection (refer to block diagram in Application Notes)internal thermistorThermal Impedance (Natural convection)Ribbed Case: Vertical Ribbed Case: Horizontal7.3°C/WattCase Material5% to 95% RHCase MaterialAluminiumPotting MaterialSilicone (UL94-VO)		3.3V, 5V	•	60mVp-p typ.
Transient Response 25% load step change 800µs Over Load Protection % of full load at nominal Vin 120% typ. Short Circuit Protection Power Limit, automatic recovery Output Over Voltage Protection (refer to block diagram in Application Notes) Converter shutdown if Vout > Vout nominal + 20% Isolation Voltage Rated at 2250VDC/1 minute, Flash tested at 3000VDC/1 second Isolation Resistance 10MΩ min. Isolation Capacitance (refer to block diagram in Application Notes) 3000pF max. Operating Frequency 260kHz ± 40kHz Operating Temperature Range Ambient, Free Convection -45°C to +96°C max (without derating) -45°C to +105°C max (with derating) Maximum Case Temperature Range +120°C Storage Temperature Range -55°C to +125°C Over Temperature Protection (refer to block diagram in Application Notes) internal thermistor Thermal Impedance (Natural convection) Ribbed Case: Vertical Ribbed Case: Horizontal 10°C/Watt Relative Humidity 5% to 95% RH Case Material (Material Sillicone (UL94-VO))	(measured with 1µF capacitor across outputs)	All others		25mV-45mVp-p max.
Over Load Protection % of full load at nominal Vin 120% typ. Short Circuit Protection Power Limit, automatic recovery Output Over Voltage Protection (refer to block diagram in Application Notes) Converter shutdown if Vout > Vout nominal + 20% Isolation Voltage Rated at 2250VDC/1 minute, Flash tested at 3000VDC/1 second Isolation Resistance 10MΩ min. Isolation Capacitance (refer to block diagram in Application Notes) 3000pF max. Operating Frequency 260kHz ± 40kHz Operating Temperature Range Ambient, Free Convection -45°C to +96°C max (without derating) Maximum Case Temperature Range +120°C Storage Temperature Range -55°C to +125°C Over Temperature Protection (refer to block diagram in Application Notes) internal thermistor Thermal Impedance (Natural convection) Ribbed Case: Vertical Ribbed Case: Horizontal 7.3°C/Watt 10°C/Watt 10°C/Wa	<u> </u>			±0.04%/°C max.
Short Circuit Protection Power Limit, automatic recovery Output Over Voltage Protection (refer to block diagram in Application Notes) Converter shutdown if Vout > Vout nominal + 20% Isolation Voltage Rated at 2250VDC/1 minute, Flash tested at 3000VDC/1 second Isolation Resistance 10MΩ min. Isolation Capacitance (refer to block diagram in Application Notes) 3000pF max. Operating Frequency 260kHz ± 40kHz Operating Temperature Range Ambient, Free Convection -45°C to +96°C max (without derating) -45°C to +105°C max (without derating) -45°C to +105°C max (with derating) Maximum Case Temperature Range -55°C to +125°C Over Temperature Protection (refer to block diagram in Application Notes) internal thermistor Thermal Impedance (Natural convection) Ribbed Case: Vertical Ribbed Case: Horizontal 7.3°C/Watt (Natural convection) Relative Humidity 5% to 95% RH Case Material (**) Aluminium Potting Material Sillicone (UL94-VO)	Transient Response	25% load s	step change	800µs
Output Over Voltage Protection (refer to block diagram in Application Notes) Converter shutdown if Vout > Vout nominal + 20% Isolation Voltage Rated at 2250VDC/1 minute, Flash tested at 3000VDC/1 second Isolation Resistance 10MΩ min. Isolation Capacitance (refer to block diagram in Application Notes) 3000pF max. Operating Frequency 260kHz ± 40kHz Operating Temperature Range -45°C to +96°C max (without derating) Maximum Case Temperature +120°C Storage Temperature Range -55°C to +125°C Over Temperature Protection (refer to block diagram in Application Notes) internal thermistor Thermal Impedance (Natural convection) Ribbed Case: Vertical Ribbed Case: Horizontal 7.3°C/Watt 10°C/Watt Relative Humidity 5% to 95% RH Case Material (**) Aluminium Potting Material Silicone (UL94-VO)	Over Load Protection	% of full lo	ad at nominal Vin	120% typ.
Solation Voltage Rated at 2250VDC/1 minute, Flash tested at 3000VDC/1 second Isolation Resistance 10MΩ min. Isolation Capacitance (refer to block diagram in Application Notes) 3000pF max. Operating Frequency 260kHz ± 40kHz	Short Circuit Protection			Power Limit, automatic recovery
Isolation Resistance10ΜΩ min.Isolation Capacitance (refer to block diagram in Application Notes)3000pF max.Operating Frequency260kHz ± 40kHzOperating Temperature RangeAmbient, Free Convection-45°C to +96°C max (without derating) -45°C to +105°C max (with derating)Maximum Case Temperature+120°CStorage Temperature Range-55°C to +125°COver Temperature Protection (refer to block diagram in Application Notes)internal thermistorThermal ImpedanceRibbed Case: Vertical (Natural convection)7.3°C/WattRelative Humidity5% to 95% RHCase Material (7)AluminiumPotting MaterialSilicone (UL94-VO)	Output Over Voltage Protection (refer to block diagram in Application Notes)		Conve	rter shutdown if Vout $>$ Vout nominal $+$ 20%
Isolation Capacitance (refer to block diagram in Application Notes) 3000pF max. Operating Frequency 260kHz ± 40kHz Operating Temperature Range Ambient, Free Convection -45°C to +96°C max (without derating) -45°C to +105°C max (with derating) Maximum Case Temperature +120°C Storage Temperature Range -55°C to +125°C Over Temperature Protection (refer to block diagram in Application Notes) internal thermistor Thermal Impedance (Natural convection) Ribbed Case: Vertical Ribbed Case: Horizontal 7.3°C/Watt Relative Humidity 5% to 95% RH Case Material (7) Aluminium Potting Material Silicone (UL94-VO)	Isolation Voltage		Rated at 2250VDC/1	minute, Flash tested at 3000VDC/1 second
Operating Frequency Operating Temperature Range Ambient, Free Convection Abient Ambient, Free Convection Abient Ambient, Free Convection Abient Associated Ambient, Free Convection Abient Associated Ambient, Free Convection Abient Associated Ambient, Free Convection Aluminium Application Notes Aluminium Application No	Isolation Resistance			10MΩ min.
Operating Temperature Range Ambient, Free Convection -45°C to +96°C max (without derating) -45°C to +105°C max (with derating) -45°C to +125°C -55°C to +125°C Over Temperature Range Over Temperature Protection (refer to block diagram in Application Notes) -55°C to +125°C New Temperature Protection (refer to block diagram in Application Notes) -55°C to +125°C -55	Isolation Capacitance (refer to block diagram in Application Notes)			3000pF max.
Maximum Case Temperature +120°C Storage Temperature Range -55°C to +125°C Over Temperature Protection (refer to block diagram in Application Notes) internal thermistor Thermal Impedance Ribbed Case: Vertical 7.3°C/Watt (Natural convection) Ribbed Case: Horizontal 10°C/Watt Relative Humidity 5% to 95% RH Case Material (7) Aluminium Potting Material Silicone (UL94-VO)	Operating Frequency			260kHz ± 40kHz
Storage Temperature Range Over Temperature Protection (refer to block diagram in Application Notes) Thermal Impedance Ribbed Case: Vertical 7.3°C/Watt (Natural convection) Ribbed Case: Horizontal 10°C/Watt Relative Humidity Relative Humidity Case Material (7) Potting Material Silicone (UL94-VO)	Operating Temperature Range	Ambient, F	ree Convection	
Over Temperature Protection (refer to block diagram in Application Notes) Thermal Impedance Ribbed Case: Vertical 7.3°C/Watt (Natural convection) Ribbed Case: Horizontal 10°C/Watt Relative Humidity 5% to 95% RH Case Material (7) Aluminium Potting Material Silicone (UL94-V0)	Maximum Case Temperature			+120°C
Thermal Impedance Ribbed Case: Vertical 7.3°C/Watt (Natural convection) Ribbed Case: Horizontal 10°C/Watt Relative Humidity 5% to 95% RH Case Material (7) Aluminium Potting Material Silicone (UL94-V0)	Storage Temperature Range			-55°C to +125°C
(Natural convection)Ribbed Case: Horizontal10°C/WattRelative Humidity5% to 95% RHCase Material (7)AluminiumPotting MaterialSilicone (UL94-VO)				internal thermistor
Relative Humidity Case Material (7) Potting Material Silicone (UL94-V0)				
Case Material (7) Aluminium Potting Material Silicone (UL94-V0)	· · · · · · · · · · · · · · · · · · ·	Ribbed Cas	se: Horizontal	
Potting Material Silicone (UL94-V0)				
	-			
	Potting Material			

continued on next page

DC/DC-Converter

RPP30-5_D Series

Weight	Ribbed Case	39g
	Baseplate Case	43g
Packing Quantity	Ribbed Case	4 pcs per Tube
	Baseplate Case	Single packed
Safety Standards		certified UL-60950-1, 1st Edition
Thermal Cycling		complies with MIL-STD-810F
Vibration		10-55Hz, 12G, 30 Min. along X, Y and Z
Conducted Emissions	EN55022	Class B
Radiated Emissions	EN55022	Class B
ESD	EN61000-4-2	Perf. Criteria B
Radiated Immunity	EN61000-4-3	Perf. Criteria A
Fast Transient ⁽⁵⁾	EN61000-4-4	Perf. Criteria B
Surge ⁽⁵⁾	EN61000-4-5	Perf. Criteria B
Conducted Immunity	EN61000-4-6	Perf. Criteria A
MTBF calculated according to BELLCORE TR-NWT-000332 ⁽⁶⁾		2195 x 10 ³ hours

Notes:

- 1. Typical values at nominal input voltage and no load/full load.
- 2. Typical values at nominal input voltage and full load.
- 3. Typical values at nominal input voltage and full load in vertical orientation and with Eurocard-sized PCB ground planes to assist in heat dissipation. For horizontal orientation, reduce the maximum temperatures by 10°C.
- 4. The ON/OFF pin voltage is referenced to negative input. The pin is pulled high internally ON/OFF control is standard with positive logic: e.g. RPP30-2405S, RPP30-4805D-B Positive logic: 0= OFF, 1 = ON. The converter will be ON if the CTRL is left open.
- 5. Requires an external 100 μF low ESR capacitor to meet EN61000-4-4 and EN61000-4-5
- 6. Case I: 50% Stress, Temperature at 50°C (Ground Benign).
- 7. To ensure a good all-round electrical contact, the baseplate is pressed firmly into place within the aluminium housing. The hydraulic press can leave tooling marks and deformations to both the housing and baseplate. The case is anodised aluminium, so there will be natural variations in the case colour and the aluminium is not scratch resistant. Any resultant marks, scratches and colour varations are cosmetic only and do not affect the operation or performance of the converters.

External Output Trimming Refer to Application Notes for suggested resistor values

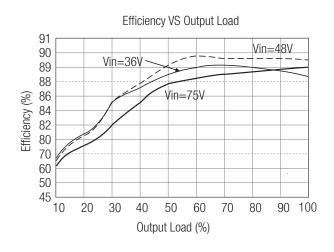
-Vout
$$\circ$$
 -Vout \circ -Vout \circ -Trim Up $10k\Omega$ Trimpot $10k\Omega$ Trimpot $10k\Omega$ Trimpot $10k\Omega$ Trimpot $10k\Omega$ $10k\Omega$

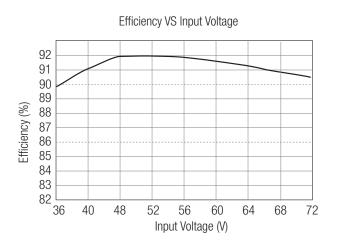
DC/DC-Converter

RPP30-5_D Series

Typical Characteristics

RPP30-4805S

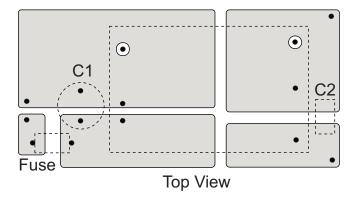




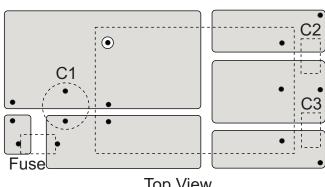
Recommended PCB Layout

Ribbed Case

Single Output



Dual Output

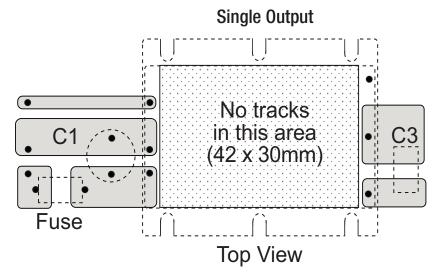


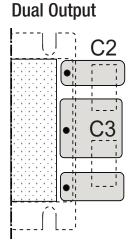
DC/DC-Converter

RPP30-S_D Series

Recommended PCB Layout

Baseplate Case- suggested PCB layout





Input Fuse is recommended. Recommended fuse rating = double maximum input current, time delay type.

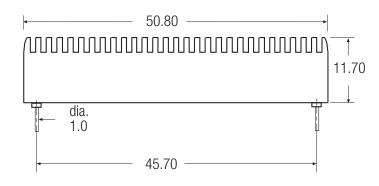
Input Capacitor, C1, is required to meet EN61000 Surge and Fast Transient, otherwise it is not required for normal operation.

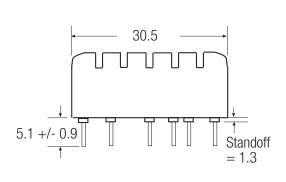
Output Capacitors C2/C3 are recommended, but not required for normal operation. Typical capacitor values are 1µF MLCC

To ensure optimum thermal performance, use large areas of copper on the PCB to assist with heat dissipation and mount the converter vertically.

Package Style and Pinning (mm)

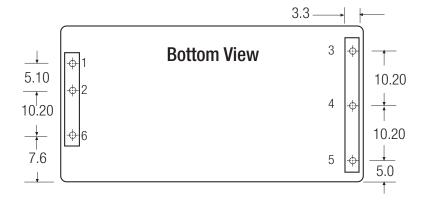
Ribbed Case (Standard - no Suffix)





3rd angle

projection



Pin Connections				
Pin#	Single	Dual		
1	+Vin	+Vin		
2	-Vin	-Vin		
3	+Vout	+Vout		
4	-Vout	Com		

-Vout

Pin Pitch Tolerance ±0.35 mm

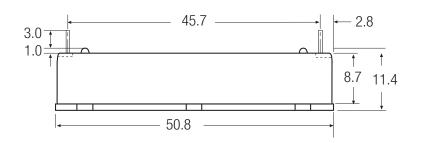
DC/DC-Converter

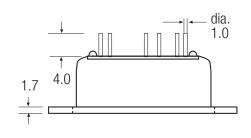
RPP30-5_D Series

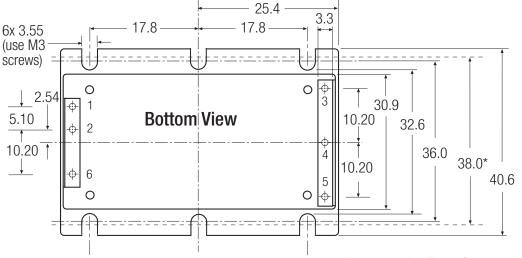
Package Style and Pinning (mm)

Baseplate Case (-B Suffix)







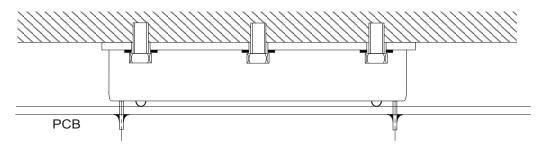


Pin Connections				
Pin#	Single	Dual		
1	+Vin	+Vin		
2	-Vin	-Vin		
2 3	+Vout	+Vout		
4	-Vout	Com		
5	Trim	-Vout		
6	CTRL	CTRL		

Pin Pitch Tolerance ±0.35 mm

*Recommended Fixing Centres

Baseplate Case Fixing - Mounting onto Heatsink/Bulkhead



Baseplate Case Fixing - Anti Vibration Mounting onto PCB

