

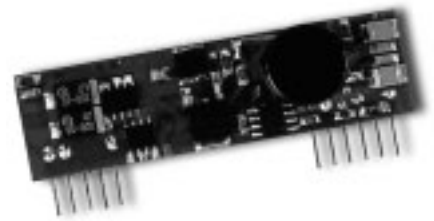
Recom RP20-O Series

20W DC/DC Converters (Single Output)

CoolPower
Solutions

Features

- Non-Isolated Output
- Remote On/Off
- High Efficiency up to 84%
- Output Over Current Protection
- Small 63.5 x 14.0 mm Package
- Remote Sense (Option)
- Power ok Signal (Option)
- Horizontal Mounting (Suffix "H" Option)



Selection Guide

Part Number	Input Range VDC	Output Voltage VDC	Output Current mA	Efficiency (%)
RP20-0533SO	4.5-5.5	3.3	6000	84
RP20-0525SO	4.5-5.5	2.5	6000	79
RP20-0521SO	4.5-5.5	2.1	6000	77
RP20-0518SO	4.5-5.5	1.8	6000	73
RP20-0515SO	4.5-5.5	1.5	6000	70

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

Input Voltage Range	4.5-5.5VDC	
Input Current I_{IN} ($V = 0-5V$, $I_o = 6A$)	6.1A max.	
Input Reflected Ripple Current (5Hz-20MHz, 500 μ H source impedance)	6.25 mA p-p typ.	
Remote On/Off Signal (ref. to GND pin)	Logic Low (on/off pin open) = power on	1V
	Logic High (on/off pin >3.3V) = power off	3.2V min./6V max.
Turn-On-Time ($I_o = 80\%$ of I_o , max.; V_o within $\pm 1\%$ of steady state)	5ms typ./8ms max.	
Set Point Accuracy I_{IN} ($V = 5V$; $I_o = 6A$; $T_A = 25^\circ C$)	$\pm 1\%$ max.	
Output Voltage Trim Range	$\pm 10\%$ max.	
Line Regulation ($I_o = 4.5V-5.5V$)	$\pm 0.3\%$ typ./ $\pm 0.5\%$ max.	
Load Regulation ($I_o = 0-6A$)	$\pm 0.3\%$ typ./ $\pm 0.5\%$ max.	
Output Ripple and Noise (20MHz, BW)	RMS	30mVrms max.
	Peak-to-Peak	100mVp-p max.
Output Current-Limit (forced convention, 1.5ms ⁻¹ (300lfm))	0A min./6A max.	
Output Current-Limit	Latching	
Transient Response (I_o $\Delta t = 1A/10\mu s$, $V_i = 5.0V$, $T_A = 25^\circ C$, Setting Time ($V_o < 10\%$ peak dev.) 200 μs see fig. 3) Load change from $I_o = 0\%-100\%$ or 100%-0% of I_o max.	Peak Deviation	80mV
	Setting Time ($V_o < 10\%$ peak deviation)	200 μs
External Load Capacitance	min. 0 μF min./10000 μF max.	
Power ok Signal (asserts "hi" when V_{out} is between following thresholds (option))	Lower Sense Threshold, %V Setpoint	-16% min./+10% max.
	Upper Sense Threshold, %V Setpoint	+10% min./+16% max.
	Power ok Signal Reference	Common Ground

Continued next page

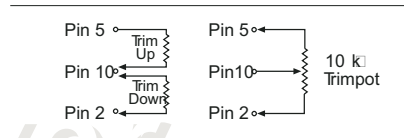


Fig. 1: External Output Trimming

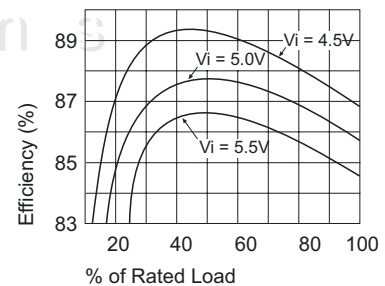


Fig. 2: RP20-0533SO Typical Efficiency at Room Temperature

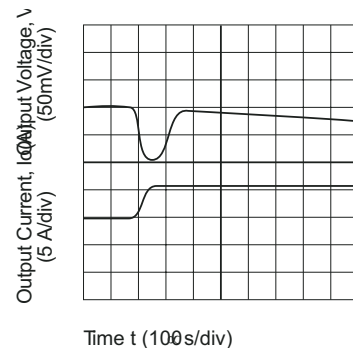


Fig. 2: Typical transient response to step load change from 0% to 100% of I_o , max. at room temperature and 5V input (waveform averaged to eliminate ripple component).

Cool Power Solutions Oy

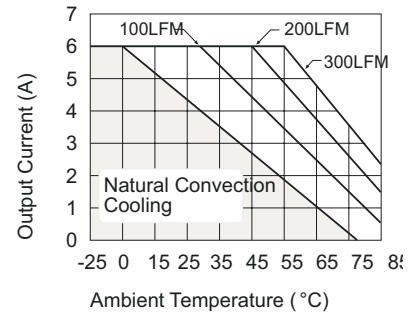
Keskustie 6
01900 Nurmijärvi

Puh: 09-2906 1990
Fax: 09-2906 1991

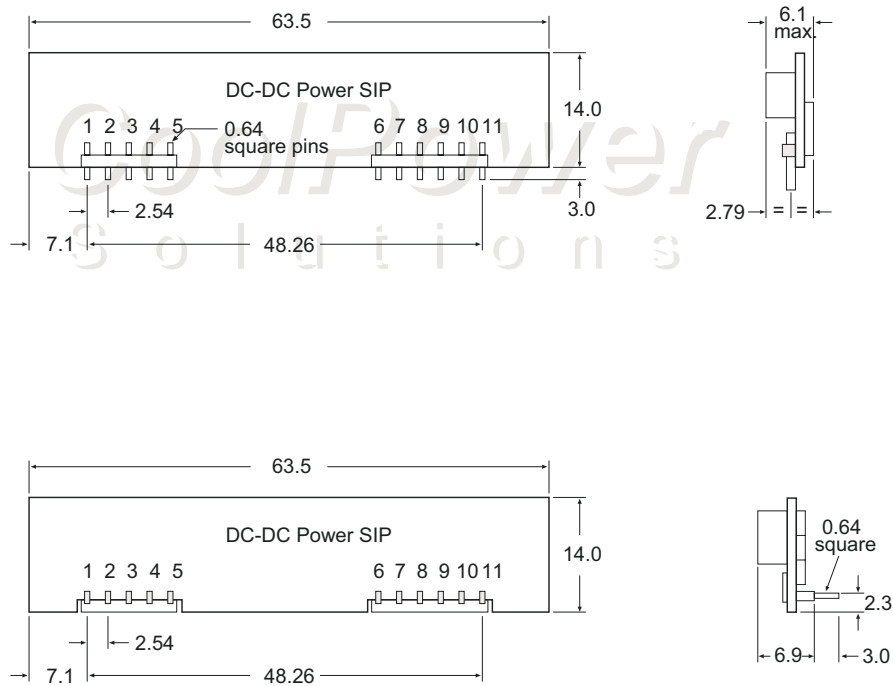
info@coolpowersolutions.fi
www.coolpowersolutions.fi

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

Remote Sense (option)	0.25VDC typ.
Switching Frequency	500kHz, typ.
Isolation Voltage	Non-Isolated
Operating Temperature Range	-25°C to +85°C (see graph)
Storage Temperature Range	-55°C to +100°C
Temperature Coefficient	±0.02%/°C
Over Temperature Protection	125°C typ.
Dimensions	63.5 x 14.0 x 6.1 mm
MTBF (Io = 80% of Io, max; TA = 25°C)	1.4 x 10 ⁶ Hours



Package Style and Pinning (mm)



Pin Connections

Pin #	Function	Pin #	Function
1	+Vout	7	+Vin
2	+Vout	8	+Vin
3	Opt. Remote Sense(+) or No Pin	9	Opt. Power ok or No Pin
4	+Vout	10	TRIM
5	GND	11	Remote On/Off
6	GND		

Pin Pitch Tolerance ±0.35 mm