RO-MIL-2200

20W Programmable Point of Load Regulator
Input 3 to 6V, Output 0.9 to 3.3V 6A

Basic Data

Input	Regulated Output
3 to 6V	0.9 to 3.3V 6A Voltage set by external resistor
WxDxH: 25x20x10mm	Weight: 11g max
Operating Temperature: –55°C to +125°C	

Description

RO-MIL-2200 is a high reliability, high efficiency (up to 95%) 6A point of load regulator. It operates over an extended military temperature range without derating. Its compact size is achieved by applying innovative packaging techniques. This device is ideal for point of load applications such as DSPs, FPGAs, ASICs and Microprocessors.

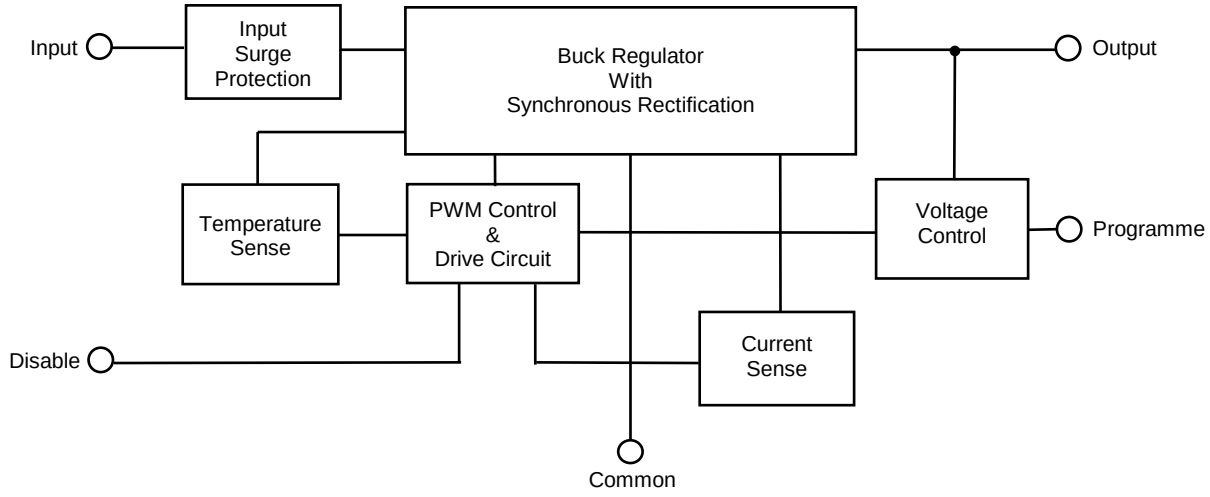
The regulator is stable without the need for any external capacitors. A resistor is required to set the output. The unit has a remote disable facility.

The output is overload and short circuit protected with a peak current of up to 8A. Other safeguards include overvoltage transient suppression and over temperature protection.

The housing is a black anodised aluminium machined box. Screw fixings are provided to secure the unit.

All units are manufactured on site in accordance with Roband's approved Quality Management System.

Block Diagram



roband
Electronics plc

Charlwood Works, Charlwood, Horley, Surrey, RH6 0BU, England
Tel. 01293 843000 Fax 01293 843001
e-mail: postmaster@roband.co.uk

RO-MIL-2200

20W Programmable Point of Load Regulator
Input 3 to 6V, Output 0.9 to 3.3V 6A

Specification

(Tcase 25°C, Vin +5V ±5%, full load, unless otherwise specified)

Input

Nominal Voltage	: 5Vdc
Working Range	: 3 to 6Vdc
Enable	: Open circuit, unit ON
Disable	: 1 to 6Vdc, unit OFF
	See figure 1

Output

Voltage	: 0.9 to 3.3Vdc
Current Rating	: 6A continuous, 8A peak
Ripple Voltage (1)	: 100mVp-p max
Load Regulation	: 30mV max, 0.5 to 6A load
Switching Frequency	: 350kHz typ

Dynamic Characteristics

Load Step Transient (2)	: 3% Vout typical
Load Step Recovery (2)	: 100µs typical
Start up time	: 15ms typical

Efficiency

Maximum	: 96%

Load dependent – See efficiency performance curves

Protection

Overload	: 10A typical
Over-temperature	: 130°C
(Unit auto recovery)	

Temperature

Operating	: -55°C to +125°C
Storage	: -55°C to +125°C
Coefficient (3)	: 0.002% per°C

Isolation

Pins to Chassis	: >100MΩ at 500V

Environmental

To MIL-STD 810D

	Method	Procedure
Temperature Altitude	: 504.1	I(-54 to+71°C, 70kft)
Temperature Shock	: 503.1	I(-54 to+71°C)
High Temperature	: 502.1	I(+71°C)
Low Temperature	: 502.1	I(40.000ft)
Low Pressure	: 500.1	I(40.000ft)
Vibration	: 514.2	I(5g)
Humidity	: 507.1	I(95%)
Fungus	: 508.2	
Dust	: 510.1	I
Salt, Fog	: 509.1	I

MTBF

To MIL-STD-217F

Environment	: Airborne Inhabited Fighter
At 70ºC	: 475,000 hours

Enclosure

Size	: 25x20x10mm
Weight	: 11g max
Material	: Anodised Aluminium Alloy
Screw Fixings	: M1.6
Connections	
Pins	: Gold Plated Brass

Lead Soldering Temperature : 300°C max for 5 seconds max

Caution

Unit must be treated as a static sensitive device

(1) DC to 25MHz ±10% input, excluding spikes
(2) Half to full Load
(3) Tcase -55 to +125°C at Vout 3.3V, Iout 6A

Regulations

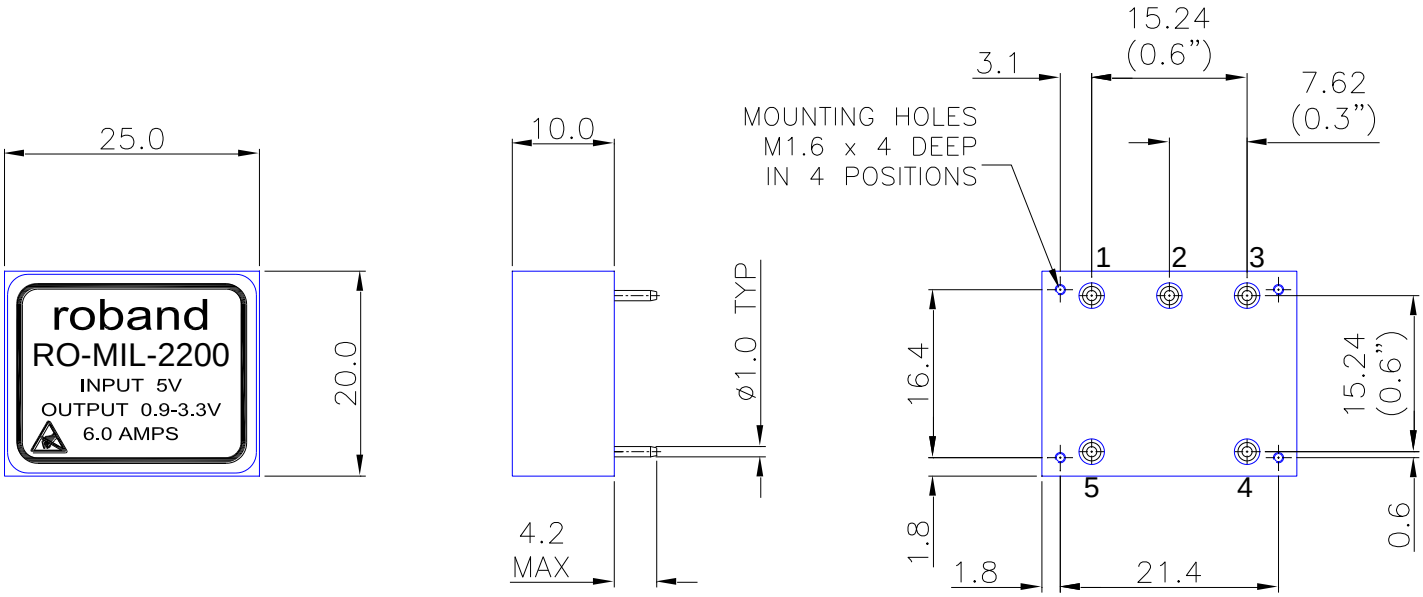
RoHS compliant
REACh compliant

roband
Electronics plc

Charlwood Works, Charlwood, Horley, Surrey, RH6 0BU, England
Tel. 01293 843000 Fax 01293 843001
e-mail: postmaster@roband.co.uk

Outline Drawing

Dimensions in mm



Pin Allocation

Pin No	Function
1	Input
2	Disable
3	Programme
4	Output
5	Common

Pins 2 and 3 are static sensitive

Charlwood Works, Charlwood, Horley, Surrey, RH6 0BU, England
Tel. 01293 843000 Fax 01293 843001
e-mail:
postmaster@roband.co.uk

Connection Diagram

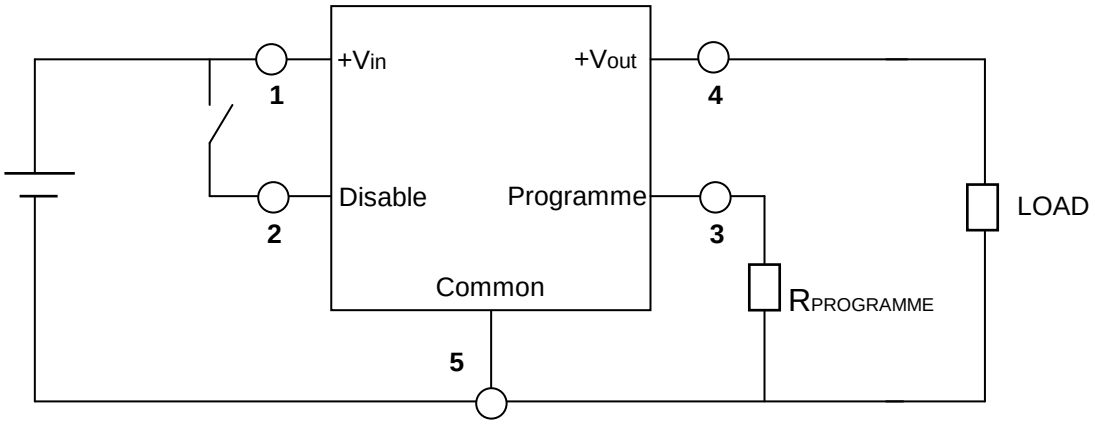
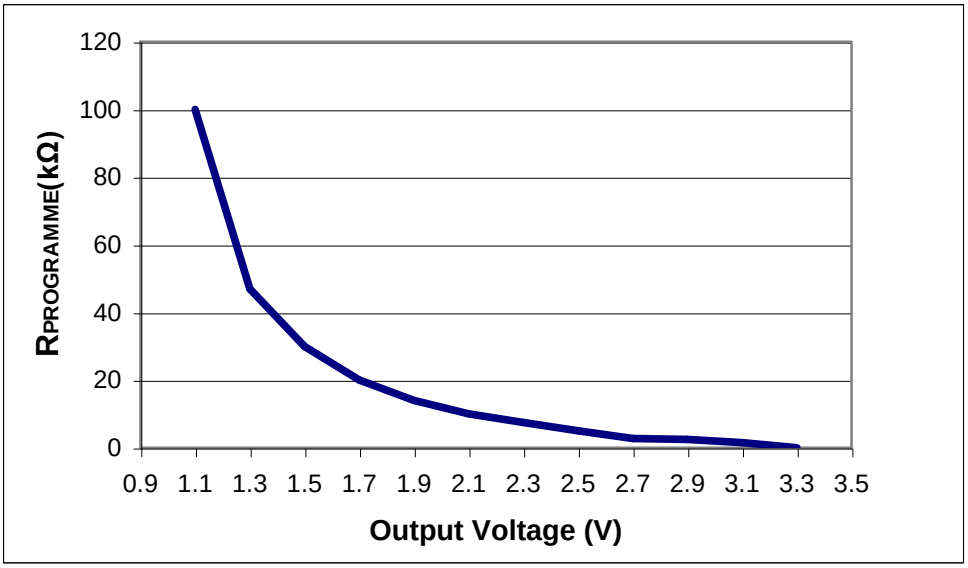
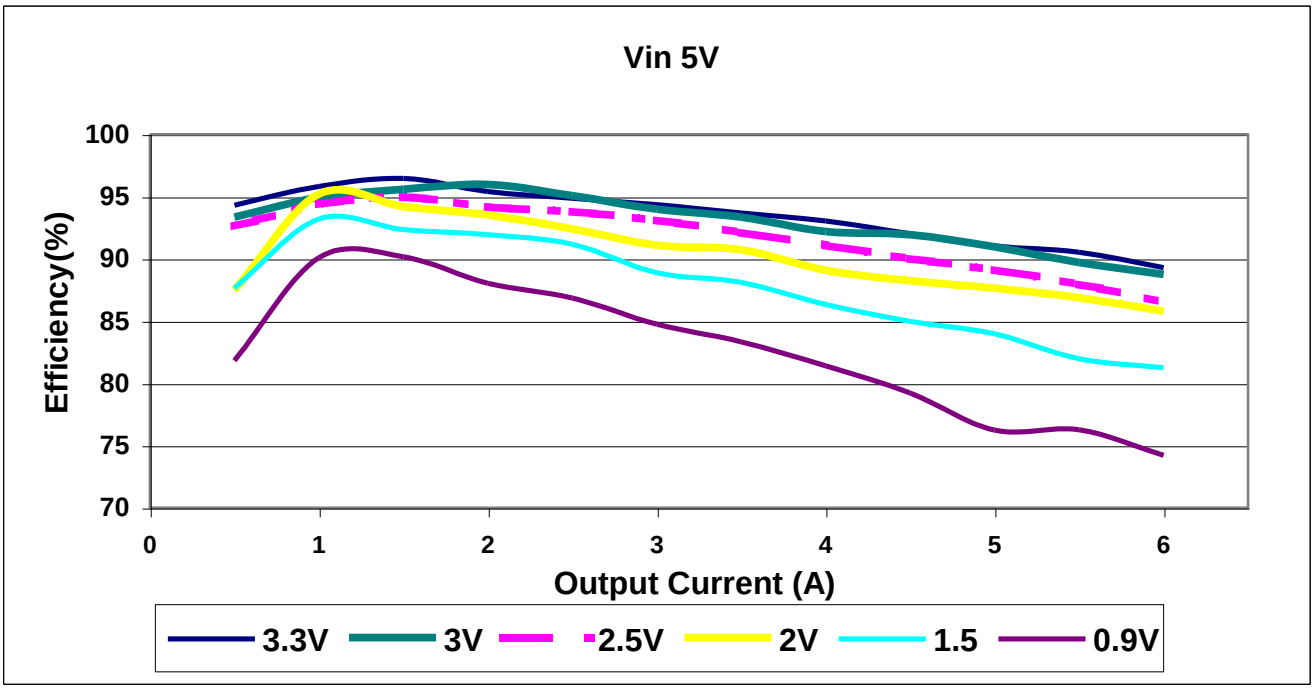


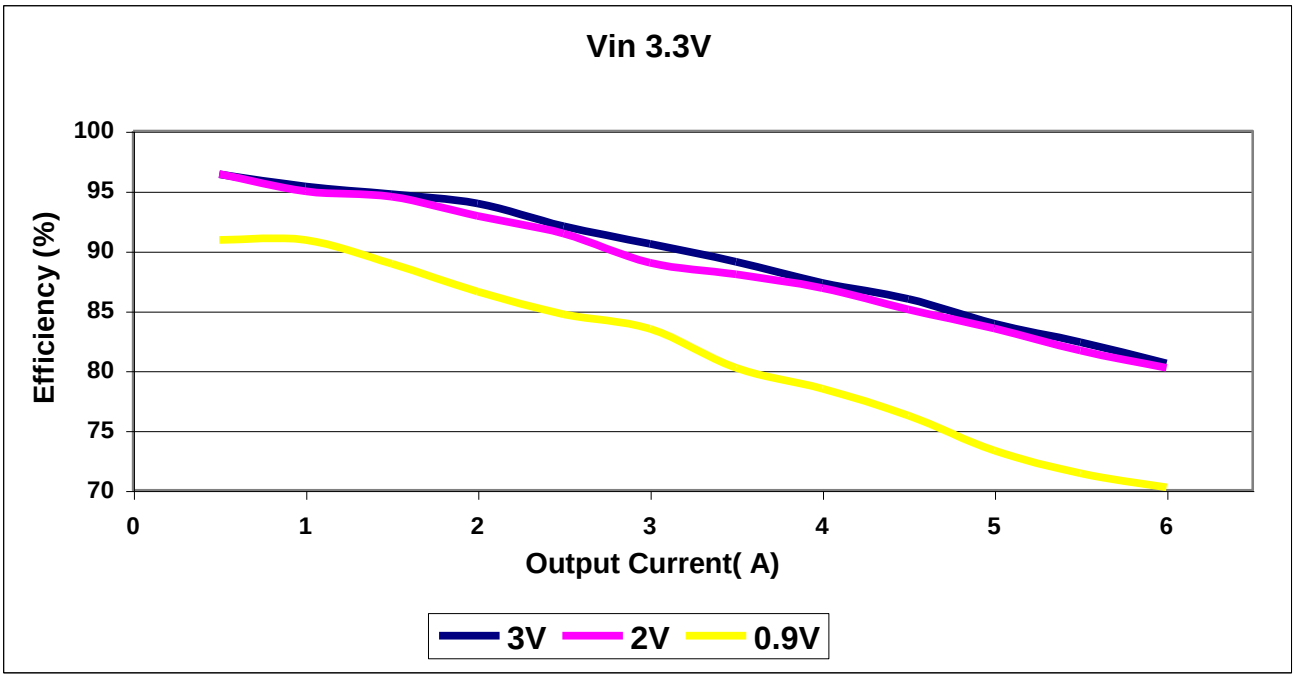
Figure 1



Charlwood Works, Charlwood, Horley, Surrey, RH6 0BU, England
Tel. 01293 843000 Fax 01293 843001
e-mail: postmaster@roband.co.uk

Efficiency Performance Curves

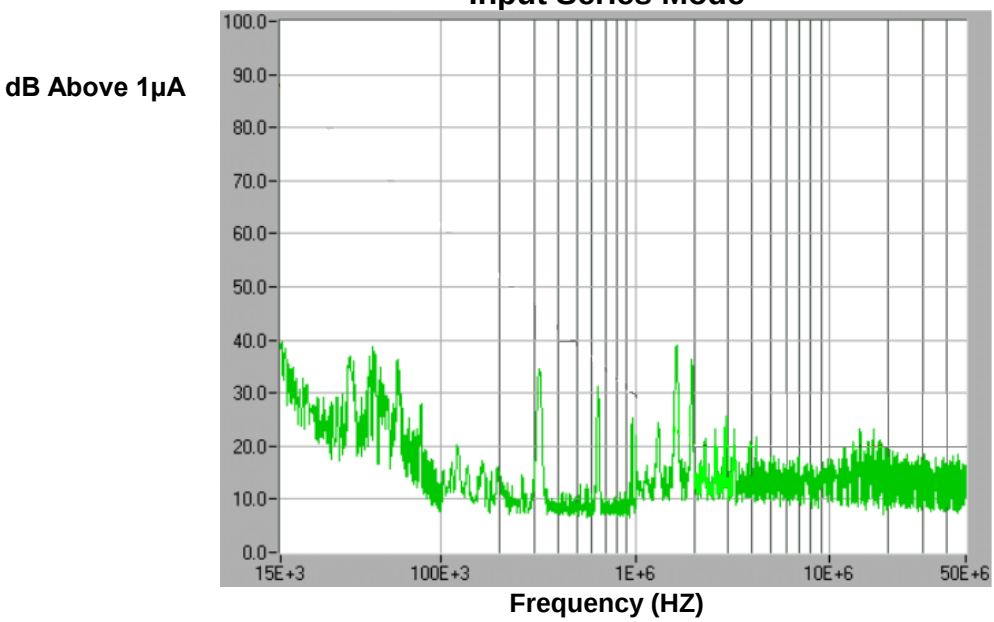




Charlwood Works, Charlwood, Horley, Surrey, RH6 0BU, England
Tel. 01293 843000 Fax 01293 843001
e-mail:
postmaster@roband.co.uk

Conducted Emissions to MIL-STD-461C CE03

Input Series Mode



Input EMI Noise Generated (dB µA) vs Frequency (Hz)

roband
Electronics plc

Charlwood Works, Charlwood, Horley, Surrey, RH6 0BU, England
Tel. 01293 843000 Fax 01293 843001
e-mail: postmaster@roband.co.uk