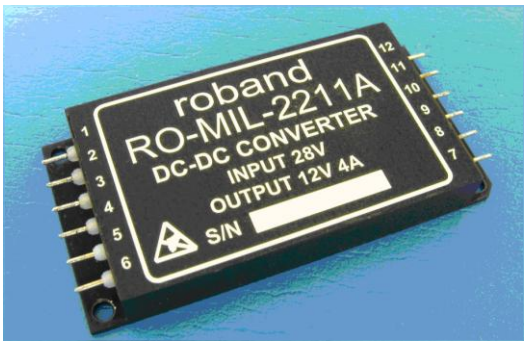
RO-MIL-2211

50W DC-DC Converter
INPUT 28V DC, OUTPUT 12/15V 4A

Basic Data

Input	Regulated Outputs
28V	
RO-MIL-2211A	12V 4A
RO-MIL-2211B	15V 4A
WxDxH: 76.3x38.2x10.2mm Weight: 60g max	
Operating Temperature: -55°C to +85°C	



Description

RO-MIL-2211 is a 50W DC-DC converter that operates over a military temperature range without derating and an efficiency of up to 86%. It has a wide operating input voltage range of 18 to 50V and the output is isolated from the input. Its compact size is achieved by applying innovative packaging.

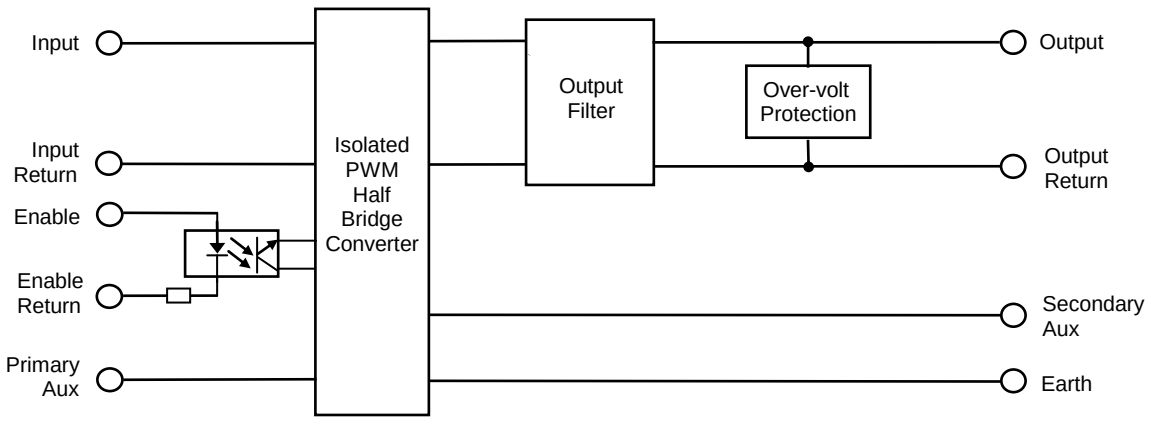
Energy for the output is provided from a high frequency PWM half bridge converter.

Overload and overvoltage protection is included. The unit has a remote enable facility.

The housing is a conversion coated 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

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50W DC-DC Converter
INPUT 28V DC, OUTPUT 12/15V 4A

Specification
(T_{case} 25°C, V_{in} 28V ±2%, 4A load, unless otherwise specified)

Input

Nominal Voltage	: 28Vdc
Working Range	: 18 to 40Vdc 50V surge for 100ms
Option	: For 80V surge contact sales office
Enable	: 5mA sink at 5V min See diagram

Output

Voltage	: 12Vdc or 15Vdc ±2%,
Current Rating	: 4A max
Ripple Voltage [1]	: 100mV$_{p-p}$ max
Line Regulation [2]	: 2mV, 4A load
Load Regulation	: 50mV, 0 to 4A load

Efficiency : 86% typical, full load

Temperature

Operating	: -55°C to +85°C
Storage	: -55°C to +125°C
Coefficient	: 0.01% per °C

Dynamic Characteristics

Load Step Transient [3]	: 5% V_{out}
Load Step Recovery	: 1ms
Start up Time	: 200ms max

Isolation

Input to Output	: >100Mohms at 500V
Input to Chassis	: >100Mohms at 500V
Output to Chassis	: >100Mohms at 500V
Isolated Enable Pins	: >100Mohms at 500V

Protection

Overload	: 4.5A typical
Overvoltage	: Surge arresting diode

[1] DC to 25MHz ±10% input, excluding spikes
[2] V_{in} 18V to 40V
[3] Half to full load

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	: 80,000 Hours

Enclosure

Size	: 76.3x38.2x10.2mm
Weight	: 60g max
Material	: Aluminium Alloy
Finish	: SurTec 650

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

Caution
Unit must be treated as a static sensitive device.

Regulations
RoHS compliant
REACh compliant

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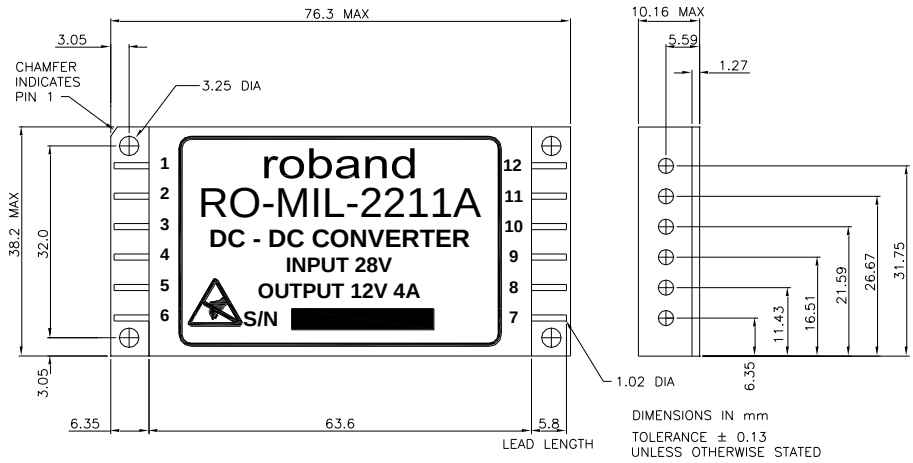
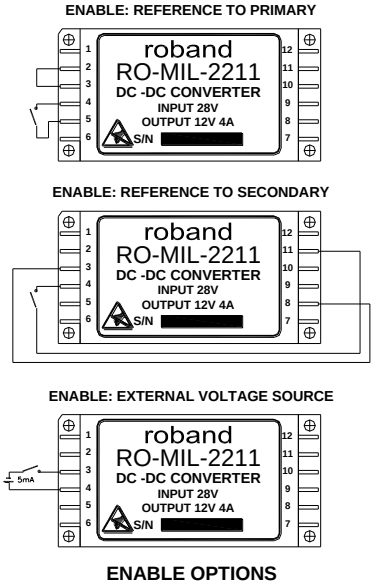
Outline Drawing



Pin Allocation and Enable

Pin	Function
1	Input
2	Input Common
3	Enable Return
4	Enable
5	Primary Aux
6	N/C
7	Output
8	Output Common
9	N/C
10	N/C
11	Secondary Aux
12	Chassis Earth



ENABLE OPTIONS

For correct operation the user should choose one of the above schemes. If none are implemented the unit will default to an “OFF” state.

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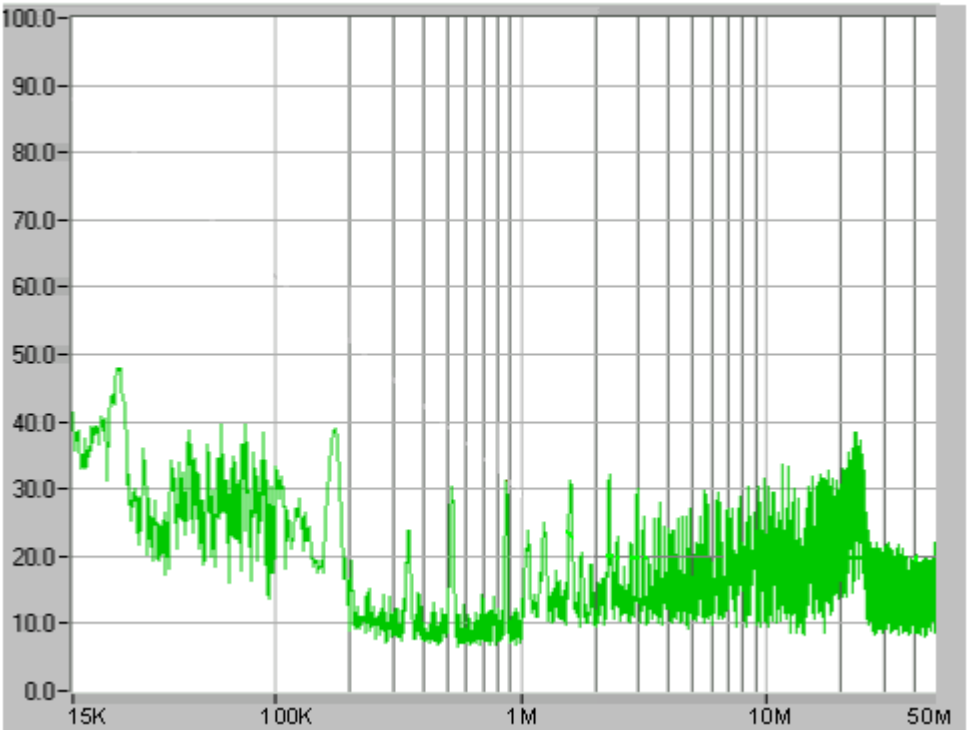
EMI Performance Curve

Conducted Emissions to MIL-STD-461C CE03 – Input Common Mode



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

The seller reserves the right to amend or alter the specification without notice.
Roband recognizes that different applications may require specific amendments to the unit.
Whenever possible we will accommodate these special requirements seamlessly.

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