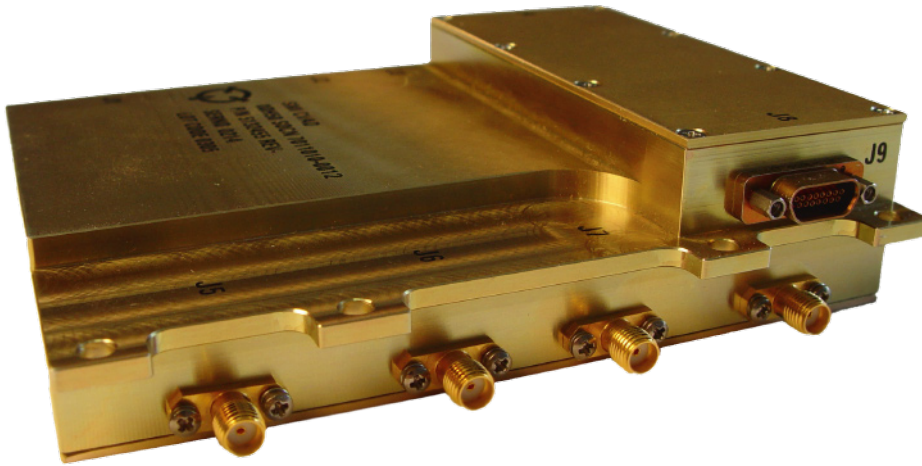


SMICV2G



Field Proven RF Chips and Modules™



Reliable, rugged, and highly qualified quad Compressive Video Amplifier Detector (CVAD) takes analog RF pulsed signals and converts them to video

The SMICV2G module provides a cost-effective solution by integrating four matched channels and associated power supplies, into a single package. Each channel takes an RF input and converts it to a video output in accordance with a specified transfer curve. The SMICV2G has CW rejection capabilities, and can produce the correct output even in a pulse-on-pulse situation. It meets severe vibration requirements and stringent I/O specifications over the full operating temperature.

Applications

The SMICV2G is currently integrated into the electronic warfare suite for fighter attack aircrafts. It helps to process signals received from four antennas and to detect and locate incoming missiles. The matching of four channels enables superior accuracy in angle of arrival determination. Each channel takes an RF input (ranging from 500 MHz to 2GHz at power levels from -42 dBm to +17 dBm) and converts it to a video output with a range of +0.33 V to +4.55 V. The unit produces a 200 nsec video pulse at the rising edge of each received RF pulse, whereby the power of the RF pulse is represented by the video pulse height.

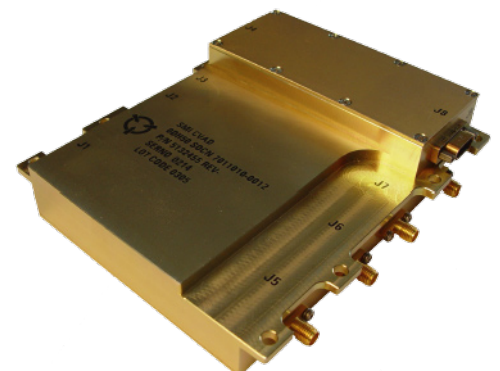
Innovative Design

The design challenges for the SMICV2G were, (1) to meet the stringent transfer curve to convert an RF input to a video output and still meet full military specification for temperature, shock, vibration, etc., and (2) to produce a correct output even in a pulse-on-pulse situation. These requirements were met by applying solid engineering principles, and state-of-the-art technology.

The SMICV2G provides a cost-effective solution by using packaged, off-the-shelf devices rather than hybrid packages ("chip and wire technology"). With careful design, the four channels were superbly matched to provide superior angle of arrival accuracy.

Features and Benefits

- Single, integrated package reduces parts count, thus enhancing reliability
- MTBF in excess of 20,000 hours
- This rugged module was designed for high acceleration environment and is being tested to military specifications
- Temperature compensation is used to minimize transfer curve variations
- Four matched channels provide superior angle of arrival accuracy

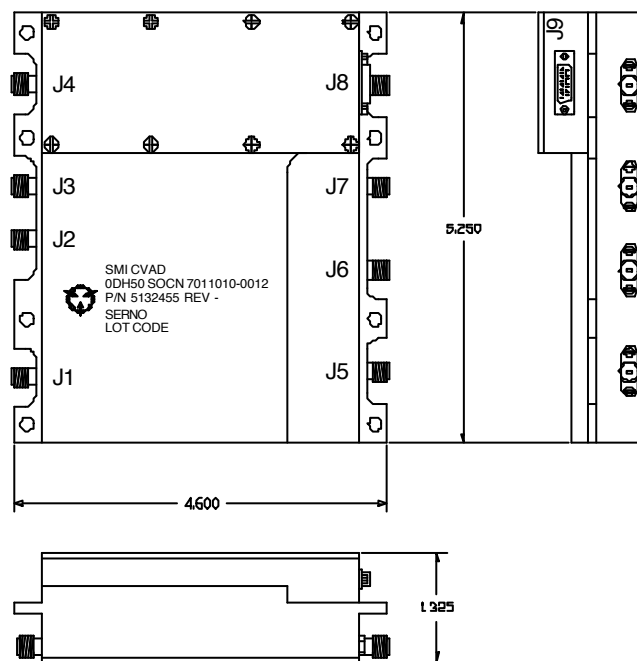


Physical Characteristics

weight	530 g (1 lb 2.6 oz)
size (LxWxH)	133 x 117 x 34 mm (5.25 x 4.60 x 1.325 in)

Ordering Information

part no.	5132455 CVAD
----------	--------------



Technical Specifications

power source	9 volt alkaline battery (lithium battery for < 0 °C operation)
+13 V DC input	+11.1 V (min) to +13.5 V (max) @ 585 mA (max)*
- 16 V DC input	-18.1 V (min) to -15.3 V (max) @ 340 mA (max)*

Performance Specifications

pulse recovery time	2 µsec
output pulse width	200 nsec (average)
CW rejection	-23 dBm
pulse-on-pulse	-25 dBm
max. input signal level	+18 dBm
input VSWR	2:1 (nominal)

Environmental Specifications

operating temp	-40 to 75 °C (-40 to 167 °F)
storage temp	-55 to 125 °C (-67 to 257 °F)
vibration	sinusoidal and random vibration in accordance with MIL-STD-883
mechanical shock	30 impact shocks of 100 g
altitude	-1,000 to 40,000 ft

Interfaces

connectors	15-pin micro D connector 4 x SMA female (RF input)
beam pattern	4 x SMA female (video output)

*max ripple is 10 mV over frequency range of 0.39 to 10,000 kHz