

Communications & Power Industries - Tracking Radar Transponders

The ultra-miniature, solid-state, lightweight transponder is designed for use as a tracking radar enhancement device in airborne applications such as missiles, unmanned air vehicles or manned aircraft operating at instrumented ranges.

CPI radar transponders are traditionally used by the manufacturers of target drones, missiles and test range operators where a common standard is desired. They provide a safe environment for equipment development trials and in-service training exercises. CPI transponders provide a real-time solution that enhances any object's radar signature.



The 238G ultra- miniature, solid-state lightweight transponder

FEATURES:

- Single antenna port for receive and transmit
- Transmit and receive frequencies preset within the 5.4 to 5.9 GHz band
- Synthesised transmit frequency source
- Sensitive receiver, -46 dBm typical
- Preset single or double pulse code setting
- Typical transmitter peak power of 1.2 W
- Displacement volume of 34 cm³ / 2.1 in³
- Typical weight of 75 g / 2.7 oz
- Operates from 6 VDC. Other operating voltages available
- Typical power consumption 470 mW

Specification

Receiver

Type	Video detector
Frequency range	5400 to 5900 MHz
Tuning	Preset to a specified frequency via a two-port preselector filter
Duplexer	T/R switch
Sensitivity	-46 dBm min. at 90 % reply Typically -48 dBm
Stability	± 3 MHz
Bandwidth (3dB)	10 ± 3 MHz
Pulse width	0.25 to 1.0 μ s
Interrogation mode	Preset to either Single-pulse or double-pulse
Double-pulse range	3.0 to 12.0 μ s Preset to a specified value
Double pulse accept	± 100 ns
Double pulse reject	± 300 ns

Transmitter

Type	Solid-state
Frequency range	5400 to 5900 MHz
Tuning	Preset to a specified frequency
Stability	± 1 MHz
Peak power	1 W min. 1.2 W typical
Pulse width	500 ns nominal
Spectral purity	Amplitude of 1st lobe ≤ -9 dB Depth of the 1st null ≤ -14 dB
Repetition rate	Up to 6000 Hz (2500 Hz standard)
Recovery time	< 20 μ s

Delay range	2.0 to 15.0 μ s Preset to a specified value
Delay variation	$< \pm 50$ ns (0 dBm to -30 dBm)

Power Requirements

Voltage	6 VDC
Current	80 mA typical, quiescent

Mechanical

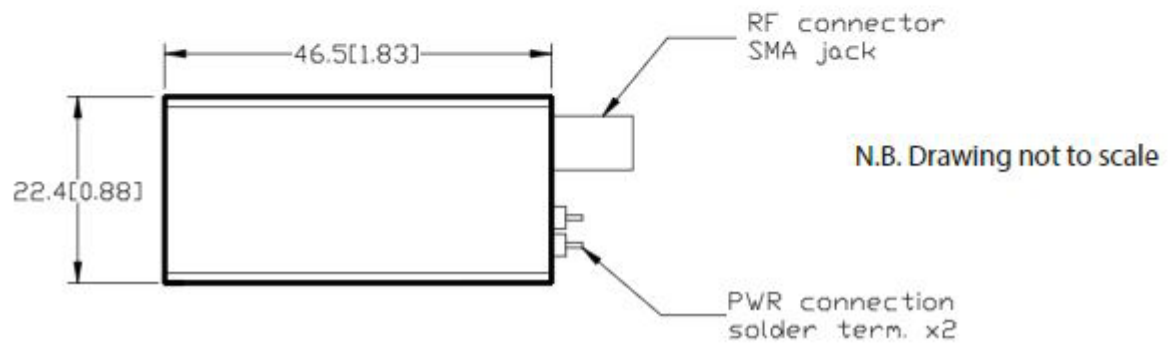
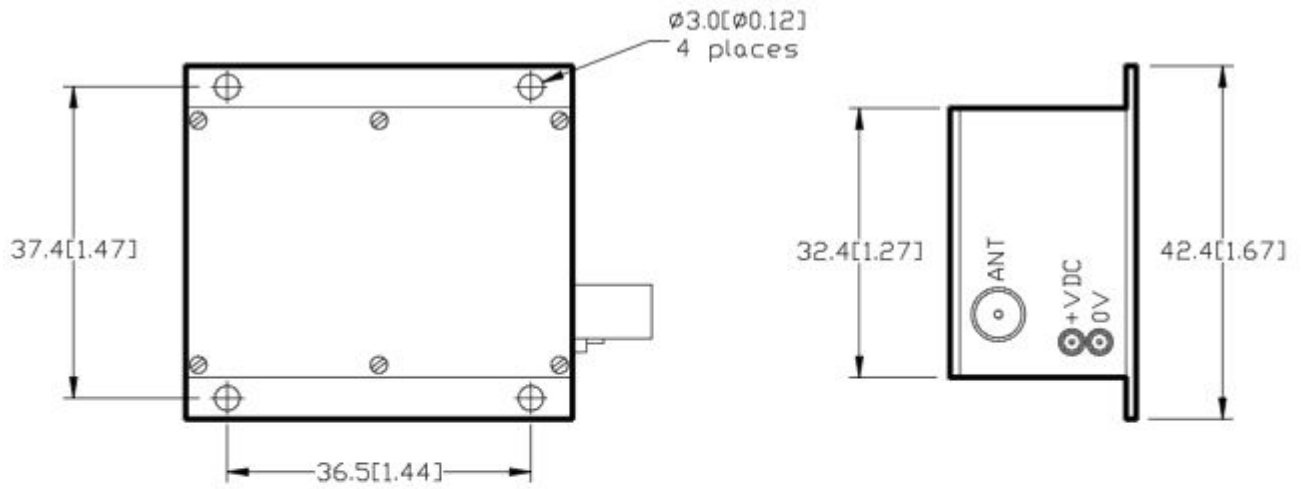
Displacement volume	34 cm ³ / 2.1 in ³
Form	Rectangular
Dimensions	4.6 cm x 3.2 cm x 2.2 cm Ref. outline drawing 9100054
Weight	75 g/ 2.7 oz nominal

Connectors

Antenna	SMA female (OSM 208A)
Power	Insulated terminals, standard

Environmental

Operating temperature	Recommended -20° C to +70° C Absolute limit -40° C to +80° C
Storage temperature	-40° C to +80° C
Altitude	Unlimited
Shock	20 g for 11 ms half sine, each direction on each axis
Vibration	20 to 2000 Hz, 8 g rms
Humidity	100%, condensing
Acceleration	20 g applied along any axis





TMD Technologies Division
Swallowfield Way
Hayes, Middlesex
United Kingdom
UB3 1DQ

tel: +44 (0)20 8573 5555
email: wecare@cpii-int.com
web: www.cpii.com/tmd

© 2023 Communications & Power Industries LLC

For more detailed information, please refer to the corresponding technical description if one has been published, or contact CPI TMD Technologies. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI TMD Technologies before using this information for system design.

TMDUK-PROD-9425/6 Issue 6 dated Jan 2023