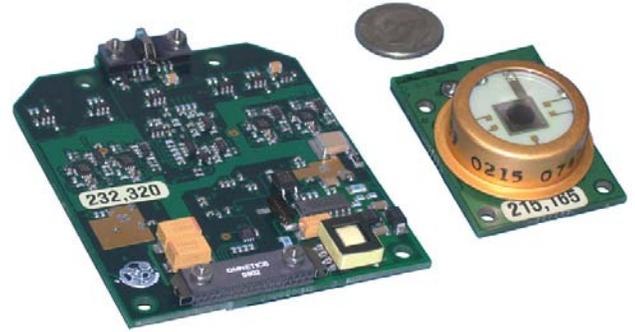




LASER SPOT TRACKER

- VERY HIGH SENSITIVITY
- ULTRA-WIDE DYNAMIC RANGE
- DECODING INCLUDED
- OPTIMIZED FOR 1.06 μ m
- SUNLIGHT TOLERANT
- UP TO 14mm DIAMETER QUADRANT DETECTOR
- ADAPTIVE NOISE TRACKING THRESHOLDS
- FLEXIBLE INTERFACE AND FEATURES



DESCRIPTION:

The *Model 742DP* is a new generation of Laser Spot Tracker with wide flexibility for missile and platform tracker applications. The detector is temperature controlled and optimized for 1.06 μ m. Independent five channel noise detectors set the lowest thresholds to achieve long acquisition ranges for different background light and spot positions and special circuits resist sunlight blinding in any one or all quadrants. A range of N-type custom-designed detectors gives the highest performance at 1.06 μ m. A separate substrate allows the detector size or type to be optimized for your application. *Model 742DP* comprises a hermetically-sealed temperature-controlled detector with built-in front-end electronics, mounted on a SMT board. A second printed board contains analog and digital processing circuits. The individual channels are digitized with a high-speed A-D converter and output as a serial digital interface for steering. An adaptive threshold control allows optimum signal-to-noise operation and power management is used to reduce power consumption.

SPECIFICATIONS:

Quadrant Detector

| | |
|-------------------|--|
| Size | 5.33mm (-1), 14mm (-2) Other sizes & InGaAs available |
| Inter-element Gap | 0.003 inches (76 μ m) (reduced response) |
| Responsivity | 0.4 A/W at 1.06 μ m |
| Bias Voltage | 180V |
| Leakage (25°C) | < 10nA (-1), < 200nA (-2) (per quad) |
| Temperature | Built-in heater and controller |

Sun Protection/Performance

| | |
|------------------|---|
| Linear Operation | Up to 10 μ W/quadrant at 1.06 μ m |
| Over-temperature | Temperature sensor output |
| Over-current | Resistively limited |
| Dynamic Range | > 100,000:1 |

Threshold

| | |
|----------------|---|
| FAR | Controlled by adaptive threshold control on each channel, plus sum channel |
| Minimum Signal | 200nW (-1), 400nW (-2); single channel typical at 50% probability of detection |

Inputs

First/last/peak pulse logic tri-service code
& PIM sequence via RS-422/RS-485
full duplex serial interface

Outputs

Steering plus status information sent via
serial interface

Gain

Multiple stages automatically set

Power

+5V \pm 2% @ 600mA (includes up to
250mA for heater)
-5V \pm 2% @ 200mA

Physical

Hermetically sealed Detector/Amplifier on
mini SMT PCB; Quadrant Processor board
Omnetics PN A16464-001

Connections

-40°C to +85°C

Operating Temp

Size

Detector: 1.123" diameter x 0.43" high
Amplifier PCB: 1.6" x 1.18" x 0.492" high
Quad Processor: 3.0" x 2.30" x 0.50" high

Weight

1.62 oz. (45 gms)

Specifications subject to change without notice.

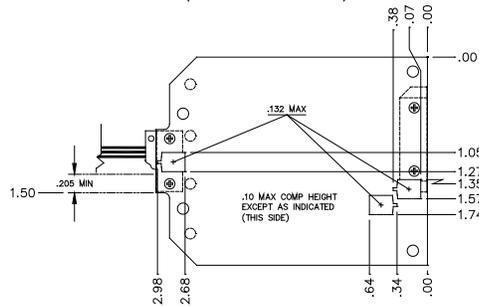
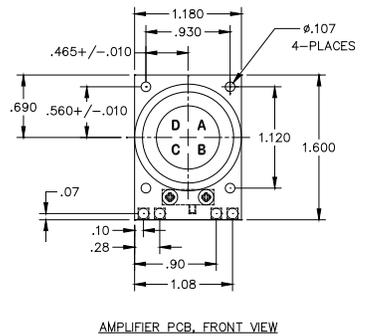
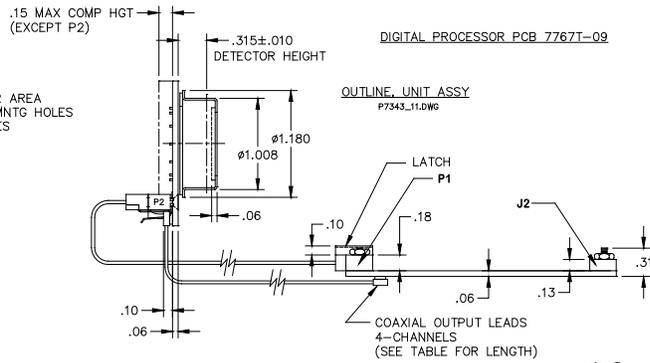
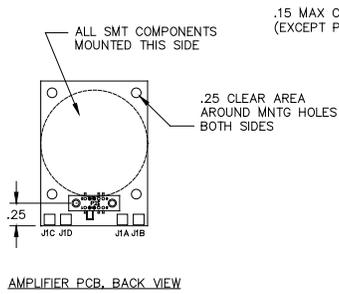
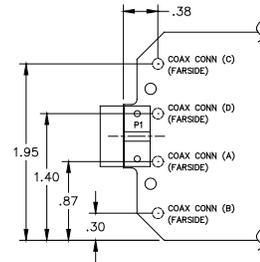
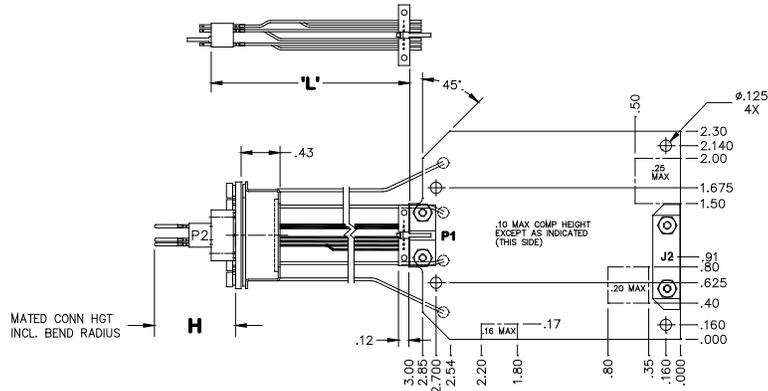
U. S. Patent No.: 7,773,202



APPLICATIONS:

Missiles, UAS, Mounted Tracking Systems, Weapons Systems

"In the event this commodity will be transferred to a "foreign person" as defined in 22 CFR 120.16, either outside or within the United States, a validated US State Department license is required."



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Model 742DP Outline Drawing