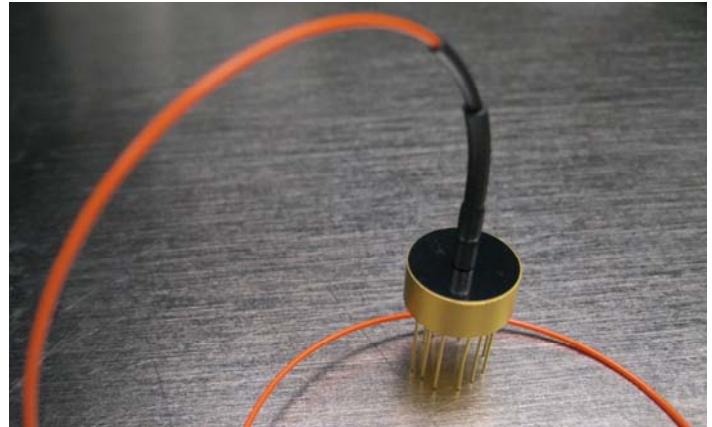


APPLICATION NOTE

Maintenance-Free Hermetic Feedthrough Fiber Pigtailed Electro-Optic Sensor

Description:

CMC Electronics' Hermetic Feedthrough Fiber Pigtailed Electro-Optic Sensor Technology offers a lightweight, compact and ruggedized solution suitable for applications requiring 100% reliability in extremely harsh environmental conditions. The fiber end-face is protected from contamination and offers long-term maintenance-free high-performance operation. It can be used as a drop-in replacement for any circular TO-can glass window product.



Features:

- The fiber pigtail offers flexibility: guiding light signal to/from the sensor where the electronics circuit cards can easily be deployed
- More robust, stable and compact than a fiber collimator interface
- No fiber-end cleaning necessary over the lifetime of the product (sensor end)
- Robust fiber pigtail: strain relief greater than 500g, minimum bend radius 0.5" (based upon 125 μ m fiber diameter)
- Operating and storage temperatures from -55 to 125°C (dependant on sensor selection)
- Hermeticity 10⁻⁸ He cc/s
- Weight as low as 5g (dependant on sensor selection)
- Minimum optical fiber coupling losses; coupling stability better than 0.2dB
- RF shielded package

Applications:

- Military Aircraft
- Commercial Aircraft
- UAV, UAS
- Surface and Sub-surface Watercraft
- Oil and Gas Industry

Custom Manufacturing:

This proprietary assembly concept is adaptable to laser sources or photodetector circuits, to different levels of control electronics integration, to different package sizes (height and/or diameter) and to thermo-electrical cooling, if needed. The fiber pigtail configuration is compatible with any optical fiber geometry and its output to any fiber connector type.

Environmental:

This product family can meet the following environmental requirements:

Thermal cycling	250 cycles, -55 to 125°C MIL-STD-883, Method 1010, Condition B
Vibration	20Grms, 5 to 2000Hz MIL-STD-883, Method 2026, Condition I, Letter F
Shock	1,500G, 0.5ms pulse MIL-STD-883, Method 2002, Condition B
Fiber pigtail strain relief	> 500g Telcordia GR-468, Fiber side pull test
MTBF	> 20 years MIL-HDBK-217F notice 2

