Photonics On Crystals

POC-OC-120206-Optical Circulators Datasheet

Key Features

- Non-reciprocal, three-port optical component enabling light propagation in a specific direction.
- Available in non-polarization-maintaining and polarization-maintaining configurations.
- High isolation (>30 dB) and low insertion loss (<1.2 dB) for superior performance.
- Wavelength range from 450 nm to 2000 nm for diverse applications.
- Durable design with minimal crosstalk (>45 dB) and excellent temperature stability.

General Description

Photonics of Crystals (POC) manufactures high-performance **Optical Circulators**, essential non-reciprocal devices that enable controlled light propagation through three ports. These circulators ensure directional signal flow, preventing feedback and optimizing optical signal management.

POC optical circulators are available in two types:

1. **Non-Polarization-Maintaining Circulators:**
   These consist of birefringent beam displacers, Faraday rotators, polarization elements, and collimators, delivering reliable performance across various applications.
2. **Polarization-Maintaining Optical Circulators:**
   Specifically designed to maintain the polarization state, these include input polarizers, Faraday rotators, half-wave plates, and output polarizers, ensuring high extinction ratios and precise signal handling.

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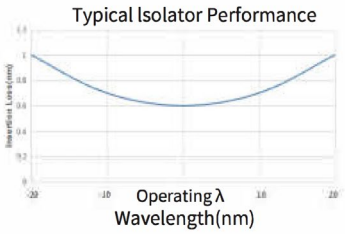

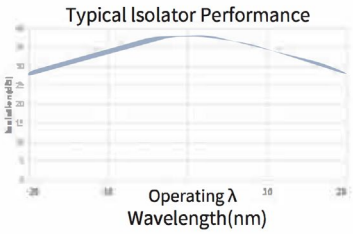

Designed with low insertion loss, minimal polarization-dependent loss, and robust environmental stability, these circulators are ideal for applications in optical sensing, bidirectional signal transmission, and dispersion compensation. Available with bare fiber or FC/APC connectors, POC circulators integrate seamlessly into various optical systems.

General Applications and Examples

1. **Fiber Optic Sensor Systems:**
   Optical circulators enhance sensor accuracy by directing signals through designated paths while isolating reflected light, ensuring noise-free data acquisition and increased sensitivity.
2. **Bidirectional Signal Transmission Systems:**
   In communication networks, circulators enable two-way data transmission within a single fiber, reducing infrastructure costs while maintaining high signal fidelity.
3. **Dispersion Compensation:**
   Used in long-distance optical networks, circulators direct signals to dispersion compensators, minimizing signal distortion and improving overall transmission quality.

Our Standard Products and Model Numbers

Type	Power Range	Fiber Type	Wavelength (nm)	Pigtail Diameter	Fiber Length	Filter	Housing
Circulator	0.3–100 W	HI1060	980–1064	900 µm Loose Tube / 3 mm Loose Tube	1 m / 1.5 m	Contained / Not Contained	A01 / A03

Typical Specifications

Withstand Power	Extinction Ratio	Insertion Loss	Minimum Crosstalk	Peak Isolation
1 W	>18 dB	≤1.2 dB	≥45 dB	>30 dB
50 W	>18 dB	≤1.2 dB	≥45 dB	>30 dB

Note: Specifications are specific to polarization-maintaining optical circulators.

Housing Dimensions (mm)

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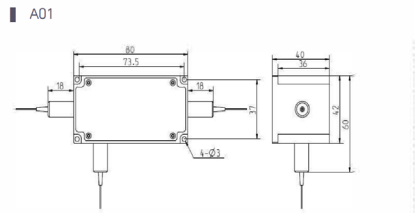
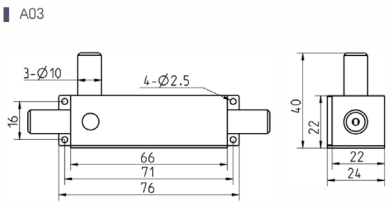
- **A01:**
  Dimensions: 80 x 40 x 36 mm. Compact and efficient for space-constrained applications.
- **A03:**
  Dimensions: 76 x 42 x 24 mm. Ideal for larger setups requiring high power handling.





POC Strength and Capabilities

Photonics of Crystals (POC) has established itself as a trusted leader in the design and manufacture of photonic components. Our optical circulators reflect our commitment to innovation, precision, and customer satisfaction.

Why Choose POC for Optical Circulators?

- **Customization:** Tailored solutions to meet unique system requirements, including wavelength-specific designs and specialized housing options.
- **Precision Engineering:** Cutting-edge production processes ensure low insertion loss, high isolation, and reliable long-term performance.
- **Versatile Applications:** Serving industries ranging from telecommunications to medical imaging, our circulators adapt to evolving technological demands.
- **Dedicated Support:** A team of skilled engineers and customer service professionals provides guidance from design to implementation.

Partner with POC to elevate your optical systems with our reliable and efficient circulators.

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