Senko Advanced Components

VSFF Innovation Brief

Network Patents
covering connector, adapter, network design and application

15 new products released 2020

VSFF Innovator
1.25 mm ferrule and MT
Base patents filed in January 2016

Pioneering VSFF
since 2015

Broaderest Portfolio
SN®, SN®-MT, and CS®

90+ VSFF patents globally

Network Patents

QSFP-DD
first VSFF patent approved in March 2017

Senko.com
SENKO is actively involved in the development of standards for fiber optic connectivity. We work closely with industry standardization groups and Multi-Source Agreements (MSAs) to ensure that our products are designed to meet the latest industry standards and specifications.

Our team of experts participates in various standardization committees and MSAs, including the Telecommunications Industry Association (TIA), the Institute of Electrical and Electronics Engineers (IEEE), and the Small Form Factor Pluggable (SFP) MSA. By being at the forefront of these groups, we have a direct influence on the development of new standards and can ensure that our products meet the latest requirements.

We are committed to staying current with the latest standards and actively contribute to developing new standards to ensure that our customers receive the highest quality products that meet the latest industry requirements.

In short, at SENKO, we are passionate about developing the best fiber optic connectors in the world, and we are dedicated to working closely with our customers to bring their ideas to life. We believe that our innovative approach, commitment to quality, and collaborative spirit make us the ideal partner for anyone looking to stay ahead of the curve in this rapidly evolving industry.

Global Presence

With offices all around the world, SENKO aims to provide local service on a Global footprint.
COMMITMENT to QUALITY and RELIABILITY

At SENKO’s Massachusetts facility, we boast an interdependent ISO-17025:2005 accredited reliability test laboratory equipped with a comprehensive range of environmental and mechanical reliability test equipment. Our expert team uses this equipment to qualify both passive components and connector-based products, ensuring that they meet our stringent quality standards.

ENVIRONMENTAL TESTING
- Thermal aging
- Thermal cycling
- Humidity aging
- Accelerated life

RELIABILITY TESTING
- Salt spray
- MFG
- Dust

MATERIAL TESTING
- Flammability
- Fungus
- Glass transition temperature

MECHANICAL TESTING
- Vibration
- Flex
- Twist
- Cable retention
- Impact

Your Source for Optical Interconnect Solutions

Experience
When “off the shelf” solutions just won’t work, the highly experienced Senko product design and engineering staff are ready to collaborate with you in designing and developing solutions to meet your stringent requirements.

Speed
At SENKO we measure design and prototyping time in weeks, not months.

Creativity
SENKO is prepared to solve the most complex Interconnect dilemmas, be that of space requirements, optical performance, or the need for new technology.

Innovation
We combine focused creativity, experienced insight, and a big-picture perspective to deliver breakthrough product design and engineering innovations that also meet manufacturing requirements and budget constraints. We are committed to supporting our customers with engineering and product development capabilities spanning mechanical, electrical, software, and systems engineering.
We recognize the importance of staying ahead of the curve in an ever-changing market, and we continuously develop new products to address the diverse range of applications.

If a solution does not already exist, we take it upon ourselves to develop one. With global design, testing, and high-quality manufacturing capabilities, we are dedicated to meeting our customers' needs locally. At SENKO, our ultimate goal is to provide innovative solutions and outstanding customer service that exceeds expectations.

At SENKO, we believe in truly understanding our customers’ needs and collaborating with them to solve problems using our comprehensive design and engineering capabilities.

We design, test, manufacture.

Concept Design
Before we design, we define the product's functionality and manufacturability including parts, materials and potential supply chain options. Our product specification solutions provide the foundation for a successful development process.

Functional Prototyping
This phase involves the design & development of working models of the product, utilizing our in-house Stereo Lithography (SLA) capabilities. The objective of this step is to confirm that the product will perform and to verify that there are no production barriers.

Engineering Design Development
We refine product specifications further during engineering design. Senko applies analytical rigor during this phase to evaluate how product specification changes will impact functionality, performance, reliability, and cost.

Design Validation
Certified 3rd party environmental and mechanical testing and verification of the applicable standards or client requirements is the last phase before finalizing product design. Our verification process ensures that the product design meets the client's desired specifications.
Sustainability has become the primary focus of SENKO's corporate mission. We strive to make our products environmentally friendly and also economically and socially sustainable. This approach includes using eco-friendly materials and reducing waste during production, promoting energy-efficient usage of our products, and recycling them at the end of their life cycle.

**Increase Capacity to Hyper Density**

SN® allows operators to increase the patch panel density by a factor of 3 versus legacy LC connectivity - up to 432 fibers per 1RU of rack space. This allows for huge cost-per-port savings and fewer connectors to clean, test and inspect for greater savings and a reduction in operating costs.

**Let Go of the Past. Connect With the Now.**

- **Increased efficiency, less waste**
  SN connector is less than half the size of an LC duplex connector

- **Smaller footprint**
  Increase capacity and reduce the need for additional data centers

- **Turn down the heat**
  Improve air flow to equipment and reduce energy consumption with SN® and SN®-MT

- **67% Reduction in plastic**
What is the Industry Saying?

SENKO Advanced Components’ SN®-MT Connector earned a 4.0 scored in the 2022 Lightwave Innovation Reviews. The SN®-MT is a next-generation multi-fiber connector that can carry a maximum of 16 fibers in a single-row ferrule contained within a regular SN connector footprint.
SENKO is at the forefront of driving next-generation applications that require unprecedented amounts of data. The rise of supercomputing, AI, and Big Data has resulted in a demand for data rates as high as 400G, 800G, 1.6TB, or even beyond. In response to this need, we have developed our Very Small Form Factor (VSFF) connectivity, which is the first of its kind to deliver up to four optical channels within a standard transceiver footprint.

At SENKO, we understand that each connection matters, and we are committed to providing the best solutions for your specific connector requirements and application needs. Our team of experts are always available to assist you in finding the right connectivity solutions to meet unique specifications. We take pride in delivering high-quality products with superior performance and reliability, ensuring that data transmissions are seamless and uninterrupted. Whether you require fiber optic connectors, cable assemblies, or other optical connectivity solutions, you can trust SENKO to deliver the best products and services to meet your needs.

Patented Solutions
- SN’, SN'-MT, and CS® connectors are invented by SENKO Advanced Components and standardized in the QSFP-DD MSA and OSFP-MSA specifications. The CS® is currently standardized within TIA under TIA-604-19, and the SN’ is in the process of standardization within IEC under IEC 61754-36.
- SENKO is the global leader in VSFF connectivity, and our portfolio represents the broadest range of application-focused connectors and adapters on the market.
- SENKO provides a licensing program to approved partners to manufacture SN’, SN’-MT and CS® connectors and adapters without the risk of direct/indirect patent infringement.
SENKO’s first VSFF patent was granted in 2017, and we continue to build on this success with innovative ideas shaping the world.

*Note: The images shown are for illustrative purposes only and may not be an exact representation of the actual product or used to interpret or determine the scope of the patent. Any interpretation of the patent should be based solely on the text of the patent itself, including the claims and specifications. Senko makes no representations or warranties as to the accuracy or completeness of the information contained therein, and any reliance on such information is at your own risk. Senko reserves the right to change the images at any time without notice.*