



### **CAB-S-S-25G-2-5M-OPC**

Arista Networks® CAB-S-S-25G-2-5M Compatible TAA Compliant 25GBase-CU SFP28 to SFP28 Direct Attach Cable (Passive Twinax, 2.5m)

#### **Features**

- Up to 25Gbps bi-directional data links
- Compliant with SFF-8402
- Hot-pluggable
- AC coupled inputs and outputs
- 100 Ohm differential impedance
- Enhanced EMI design
- Single power supply 3.3V
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free



#### **Applications:**

- 25GBase Ethernet

#### **Product Description**

This is a Arista Networks® CAB-S-S-25G-2-5M compatible 25GBase-CU SFP28 to SFP28 direct attach cable that operates over passive copper with a maximum reach of 2.5m (8.2ft). It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This direct attach cable is TAA (Trade Agreements Act) compliant, and is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

OptioConnect's transceivers are RoHS compliant and lead-free.

## General Specifications

| Parameter             | Symbol | Min. | Typ. | Max.              | Unit  | Notes |
|-----------------------|--------|------|------|-------------------|-------|-------|
| Data Rate             | DR     |      | 25   |                   | Gbps  | 1     |
| Bit Error Rate        | BER    |      |      | 10 <sup>-12</sup> |       |       |
| Operating Temperature | Tc     | 0    |      | 70                | °C    | 2     |
| Storage Temperature   | Tstg   | -40  |      | 85                | °C    | 3     |
| Supply Current        | Icc    |      |      | 4                 | mA    | 4     |
| Input Voltage         | Vcc    | 3.14 | 3.3  | 3.46              | V     | 4     |
| Cable Impedance       | Z      | 90   | 100  | 110               | Ω     |       |
| Product Weight        | GD     |      | 78   |                   | g/PCS | 5     |
| Cable Weight          | GC     |      | 32   |                   | G/M   |       |
| Dust Cap Weight       | GS     |      | 0.80 |                   | g/PCS |       |

### Notes:

1. IEEE 802.3by.
2. Case temperature.
3. Ambient temperature.
4. For electrical power interface.

## Cable Dimensions and Insertion Loss Level

| Length | Standard Wire Gauge AWG | Cable Diameter OD (mm) | Minimum Bending Radius R (mm) | Insertion Loss Level (Note 1) | Tolerance Range (±cm) |
|--------|-------------------------|------------------------|-------------------------------|-------------------------------|-----------------------|
| 2.5m   | 30AWG                   | 4.6                    | 26                            | CA-25G-N                      | 2                     |

### Notes:

1. Cable insertion loss classification standard IEEE 802.3by 110-10.

## Pin Descriptions

| Pin | Symbol     | Name/Description                                                                   | Notes |
|-----|------------|------------------------------------------------------------------------------------|-------|
| 1   | VeeT       | Transmitter Ground (Common with Receiver Ground).                                  | 1     |
| 2   | Tx_Fault   | Transmitter Failure Alarm. Not Used.                                               |       |
| 3   | Tx_Disable | Not Used. The signal turns off the module transmitter when it is “high” or “open.” |       |
| 4   | SDA        | Data Line for Serial ID.                                                           | 2     |
| 5   | SCL        | Clock Line for Serial ID.                                                          | 2     |
| 6   | MOD_ABS    | Module Absent. Grounded within the module.                                         | 2     |
| 7   | RS0        | No Connection Required.                                                            |       |
| 8   | LOS        | Loss of Signal Indication. “Logic 0” indicates normal operation.                   |       |
| 9   | RS1        | No Connection Required.                                                            |       |
| 10  | VeeR       | Receiver Ground (Common with Transmitter Ground).                                  | 1     |
| 11  | VeeR       | Receiver Ground (Common with Transmitter Ground).                                  | 1     |
| 12  | RD-        | Receiver Inverted Data Out. AC Coupled.                                            |       |
| 13  | RD+        | Receiver Non-Inverted Data Out. AC Coupled.                                        |       |
| 14  | VeeR       | Receiver Ground (Common with Transmitter Ground).                                  | 1     |
| 15  | VccR       | Receiver Power Supply.                                                             |       |
| 16  | VccT       | Transmitter Power Supply.                                                          |       |
| 17  | VeeT       | Transmitter Ground (Common with Receiver Ground).                                  | 1     |
| 18  | TD+        | Transmitter Non-Inverted Data In. AC Coupled.                                      |       |
| 19  | TD-        | Transmitter Inverted Data In. AC Coupled.                                          |       |
| 20  | VeeT       | Transmitter Ground (Common with Receiver Ground).                                  | 1     |

### Notes:

1. The circuit ground is isolated from the chassis ground.
2. Should be pulled up with 4.7k $\Omega$  to 10k $\Omega$  on the host board to a voltage between 2V and 3.6V.

## Electrical Pad Layout



Top of Board



Bottom of Board



## Block Diagram of Transceiver



**Mechanical Specifications**



Unmarked Tolerance  $\pm 0.2$   
Unit: mm

## **OptioConnect**

### **Innovation for the Future of High-Speed Networking**

#### **Who We Are**

OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

#### **What We Do**

At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

#### **Smarter Networks by Design**

Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

#### **Our Team**

Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

#### **Our Mission**

To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

#### **Let's Connect**

Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.

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