



## **SVT Power Cords in the Data Center: The Case for Using Them**



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## Introduction

Reliable and safe power is critical for the success of every data center. While it can be easy to think about power distribution units (PDU) and uninterruptible power supplies (UPS) as part of the power ecosystem and overlook the role of power cords, they are a vital part of the energy infrastructure—the last mile of the data center.

Although there is interest, largely among telecom enterprises, to use DC power in data centers, AC is the standard power supply in most facilities. When looking for AC power cords to run computing equipment, installers and engineers have two options—SVT or SJT cords. They are both portable, and designed for light-duty and office equipment. The major difference between the two is the jacket that protects the shielding and conductor in the cable.

Many data centers use SJT cords by habit. The original design and classification of SVT power cables has led to some confusion about acceptable uses, and some data centers are less inclined to use them. Because the jackets on SJT power cords are thicker, that has led to a belief that they are safer than SVT cords in a data center environment. As a result, many data centers are missing out on the unique benefits of SVT power cords in their facility.

## Market driver

To achieve this mission critical performance and be able to deliver the latest technology to their organizations and clients, data centers are changing how they operate. This includes a focus on increasing server density, and providing more computing power in the same, or smaller, amount of space. This, in turn, leads to expanded power needs for each rack. According to AFCOM<sup>1</sup>, 62% of data centers report their rack density has increased over the past three years, with 25% reporting an average rack density of 7-10kW (up from an average density of about 5kW per rack in 2018).

▶ SVT Service, Vacuum,  
Thermoplastic

▶ SJT Service, Junior,  
Thermoplastic

<sup>1</sup> [https://www.datacenterworld.com/sites/default/files/AFCOM\\_State%20of%20the%20Data%20Center\\_FINAL\\_2021\\_5-10-21.pdf](https://www.datacenterworld.com/sites/default/files/AFCOM_State%20of%20the%20Data%20Center_FINAL_2021_5-10-21.pdf)

Fitting more racks into smaller spaces extends computing capabilities in the data center, while also putting pressure on cord and cable management, and making it more complex. More servers require additional PDUs, and more power cords between the equipment and the PDU. A single rack of equipment could require 50 or more power cords; and each additional cord takes up more space in the available cable pathways.

## Choosing the right power cord

The right power cord for this critical computing equipment is one that delivers the electric load safely in a data center environment, is flexible enough to fit into server racks and throughout delicate equipment, and is color coded to enable easy organization, prevent accidental disconnects during moves, and manage the distribution of electricity demands across circuits.

Since both SVT and the traditional SJT cords are durable, portable power cords that come in a variety of lengths, and transmit the same loads and withstand the heat of a data center, the primary difference between them is cord thickness. With thinner insulation and a thinner jacket, SVT cords are more flexible, have a better bend radius, and are available in smaller gauge sizes than SJT. This makes SVT cords easier to install in the small spaces typical of high-density facilities and edge data centers, which are often located in small server closets, without any negative impact on performance.

Because the original use for SVT cords was to power small tools and appliances, like vacuum cleaners or office equipment, data center engineers have been hesitant to use them, despite their other benefits.

## Thinner is better

Thinner cords also save costs, which can really add up in large, high-density data center facilities. The cost savings begin with purchase: SVT cords are less expensive than SJT for the same lengths.

### SVT + SJT similarities

- ▶ UL approved
- ▶ RoHS approved
- ▶ North American color code
- ▶ 60° C rating
- ▶ 300V rating
- ▶ Resistant to oil, water, alkali



Every inch of space matters in a data center. Thinner cables—from the server, switches, and routers to the PDU, and from the PDU to the uninterruptible power supplies (UPS)—reduce clutter and make power distribution easier. Cables with a thinner outside diameter (OD) take up less space and can lead to increased airflow around the equipment. This, in turn, can lead to improved cooling of the data center, reducing power demands, and costs, for cooling infrastructure.

Current supply chain issues are impacting the delivery of SJT cords, making them less available as SVT. Data centers can feel confident that SVT cords will meet their power needs, safely and efficiently.

## UNC Group

The most requested cord at the UNC Group is 18awg, C13-C14 SVT power cord, available only in 10amp, used primarily to power network equipment in the data center. Guaranteed for life, this cord enables data centers to customize their power supply—these cords are offered in a variety of colors for easy identification in the high-stress setting of a high-density data center; and in lengths from 1 to 25 feet.

Several Fortune 100 companies have been using UNC 10 amp, 18awg, C13-C14 SVT power cords for over a decade to power their hyperscale data centers. They each chose SVT cords specifically due to the density demands of their facilities. With the smaller outside diameter, thanks to the thinner PVC jacket, the cords are more pliable and easier to work with, and take less time to install.

**For more information or to speak with an installation expert, contact us today.**

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We look forward to helping with your data center's high-density power supply needs.

### Connectors

- ▶ C14—power supply inlet for most switches, servers and desktop computer equipment
- ▶ C13—power supply socket

### UNC C13 to C14 power cord

- ▶ Jacket Rating SVT
- ▶ Connector A C13
- ▶ Connector B C14
- ▶ Amps 10 amps
- ▶ Volt 250V
- ▶ Gauge (AWG) 18 AWG
- ▶ Approvals UL, RoHS, REACH
- ▶ Temperature Rating -20°C to +105°C
- ▶ Warranty Lifetime
- ▶ ECCN EAR99