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Silicon Power Corporation

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*The annual listing of 10 companies that are at the forefront of providing  
Power Electronics solutions and transforming businesses*

# SILICON POWER CORPORATION POWER RESILIENCE FOR MAXIMUM UPTIME



Perry Schugart

**B**usinesses from across commercial, financial, and industrial backgrounds are increasing their number of mission-critical applications to reduce risk and remain competitive. But their aspirations are facing an unwelcome adversary as these applications experience increasing power failure events, resulting in facility downtime and loss of business value.

Although businesses are investing heavily on maintaining redundant power lines and using an automatic transfer switch to ensure consistent power supply, these relatively slow switches can be detrimental to facility uptime. Looking under the hood, there are two major forces at play. On one side, there are utilities that are increasingly using distributed energy systems such as wind, solar, and energy storage as part of their power portfolio. These distributed energy systems, however, fail to provide the rotational inertia of conventional generation, which plays a crucial role in helping the grid ride-through various faults. On the other side, the nature of the mission-critical loads is changing rapidly. There is an ever-increasing number of microprocessor-based devices, instruments, and systems that are ultimately connected to the A/C line, and they are increasingly becoming more susceptible to being disrupted by minor power fluctuations as they are continuously cost reduced by

their manufacturers. For businesses that can't afford power-related disruptions, the ability to select, or switch to, a source of higher power quality without the risk of disrupting operations is critical; this is what Silicon Power Corporation's Innova STS sub-cycle transfer switches have been doing for over 20 years.

Founded in 1994, Silicon Power has 25 years of experience in helping facilities running mission-critical applications tackle downtime due to power quality events with its pioneering medium voltage sub-cycle switches. As a vertically-integrated small company, Silicon Power has the agility to not only design and manufacture semiconductor devices but also customize their performance to the extent that the off-the-shelf products in the market cannot even come close to.

"We design, develop, and manufacture a wide portfolio that includes semiconductor devices, pulsed-power modules, industrial-grade systems, and power-resilience solutions," says Perry Schugart, Sr. VP Power Systems Marketing at Silicon Power. "Unlike other players in the market, our solutions can switch very quickly between medium-voltage power lines without interrupting facility operations. This has been possible because of our knowledge and experience in working with both semiconductors and high-power systems. Our solutions are implemented in facilities in a centralized manner to protect the entire facility." Silicon Power's solutions trump the existing solutions that are based on UPS, energy storage, and STATCOM in terms of cost, performance, and eco-friendliness.



Silicon Power offers Innova STS (sub-cycle transfer switches) that are used in critical facilities where there are two power feeds and where the facilities cannot afford to have a downtime due to power-related events. The company also offers medium-voltage, sub-cycle disconnect switches, Innova SDS, which provide very fast islanding, or disconnection, of a micro-grid from the main grid. Its solutions prove valuable to large manufacturers having a campus of facilities with distributed energy resources such as wind, solar, diesel gensets, and energy storage. "If the main grid experiences a fault and your microgrid disconnection isn't



**Our solutions are trusted by our customers to protect the people, property and profit they rely on**

fast enough, all of your microgrid energy resources will end up feeding the fault, and then your microgrid is going to collapse," says Schugart.

At the outset of client engagement, Silicon Power aims to comprehend the severity of the problem to have a clear picture of it. In cases where the client doesn't have two power feeds, it encourages the client to go for Innova SDS based solution; for a microgrid approach. "Our strategy is to set an architecture in the client environment that optimizes power resilience and efficiency," explains Schugart.

In a case study, one of Ford's facilities that was facing 17 power quality events, or shutdowns, in a year resolved the issue completely by using Silicon Power's sub-cycle transfer switch. The utility, which was supplying power to the facility, also saved \$360,000 in compensation penalties to Ford. Impressed, Ford recommended Silicon Power's sub-cycle transfer switch to another facility that was facing the same issue, and the results there too were consistently positive.

Silicon Power is focused on mission-critical applications across many different and diverse markets, such as pharmaceutical, industrial, financial, transportation, and utility markets. As a US-based, vertically-integrated organization (semiconductors through systems), Silicon Power is uniquely positioned to support our customers with electrical-grid security and resilience solutions based on current, advanced and future technologies; empowering its customers with the uninterrupted operations they desire. 