



## COSEL launches new generation of ultra-compact, high efficiency power supplies for industrial applications

Press Release

2023-10-31

- Wide Band Gap Gallium Nitride (GaN) power stage and planar magnetics
- 1x2.3 inch high power density design (TEP45F, 65F)
- 45W and 65W interoperable footprint
- High efficiency up to 93.5%
- 140% peak output current on 12V and 24V models
- Two versions with pins or connectors and dust protective case

Cosel Co, Ltd (6905: Tokyo) today announced the launch of a new generation of highly compact power supplies for industrial applications, the TE series. Using the most advanced technologies such as wide bandgap Gallium Nitride semiconductors, high-frequency planar transformers and enhanced flyback topology, the TE series embraces a 45W (TECS/TEPS45F) and a 65W (TECS/TEPS65F) fitting into 1x2.3 (TEPS) or 1x3 (TECS) inch footprints. The 12V and 24V output versions are able to deliver 140% power to sustain peak loads with an outstanding efficiency of up to 93.5%. Two versions, either with pins (TEPS) or connectors (TECS) are available with compatible footprints to ease system upgrades. Standard products are delivered as an open frame though an optional dust protection case will be available.

Responding to market demands for smaller footprints in industrial application, COSEL designers combined the best of the latest technologies to provide high power density power supplies with high efficiency and high reliability. Based on its long experience in designing high efficiency topologies, COSEL's R&D team developed a highly integrated power stage using Wide Band Gap (WBG) Gallium Nitride (GaN) semiconductors associated with a high frequency planar transformer. Taking the benefits of GaN performances in high frequency switching it has been possible to deliver 45 and 65W in a 1x2.3 inch (25.4 x 58.4mm Max) footprint at up to 93.5% efficiency.

Designed for flexibility, the TE series offers two interconnection versions, the TEPS with pins for PCB mounting and the TECS with crimp style JST connectors. In both cases the 45W and 65W are footprint interchangeable. Highly appreciated by systems designers, this feature simplifies layouts and provides upgrade options. COSEL also took into consideration the requirement to minimize the size of the power supply, and adopted a vertical assembly technique that combined with a higher switching frequency of up to 800KHz saves about 58% board space



compared to conventional technology whilst keeping a high level of power-conversion efficiency, higher by three points compared to conventional products.

Designed for worldwide applications, the TE series has an input voltage range of 85VAC to 264VAC single phase, and conforms to safety standards input voltage range of 100-240VAC (50/60Hz).

The TECS/TEPS45F and TECS/TEPS65F are available in three fixed output voltages, 5V, 12V and 24V with respective currents up to 45W and 65W. To accommodate the inrush current associated with DC motors, capacitor banks and similar applications, a 140% peak current option (H) will be available in Yr. 2024 for the 12V and 24V versions.

The TECS/TEPS45-65F benefit from an optimized switching topology conferring it an efficiency of up to 93.5% at 230VAC and rated load.

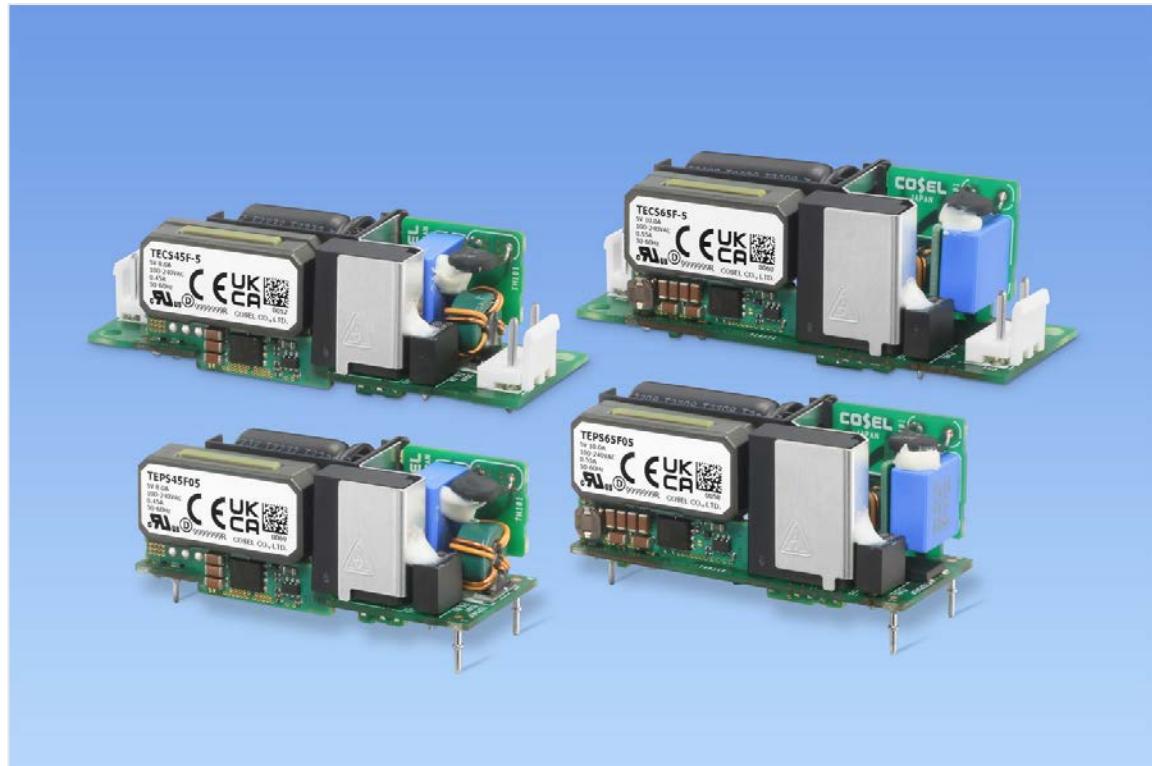
The units are designed to operate from -10 to +70 degrees Centigrade, and they can be mounted in any orientation, although depending on the ambient temperature and environment a derating may apply. The units have a 3,000VAC input to output isolation voltage and a leakage current of 0.25mA max complying with the IEC62368 specification.

COSEL's TECS/TEPS45-65F units are ideal for Class II equipment and are able to achieve a low noise performance without requiring any ground connection. With attention to detail regarding energy preservation, at no load the TECS/TEPS45-65F power consumption is as low as 200 milliwatts.

Designed for use in demanding applications where space is often limited, the TECS/TEPS measures (W x H x D): TECS45F: 25.4 x 23.5 x 76.2 mm (1.00 x 0.93 x 3.00 inches) ; TEPS45F: 25.4 x 24.0 x 58.5 mm (1.00 x 0.94 x 2.30 inches) ; TECS65F: 25.4 x 27.0 x 76.2 mm (1.00 x 1.06 x 3.00 inches) and the TEPS65F: 25.4 x 27.5 x 58.5 mm (1.00 x 1.08 x 2.30 inches). For applications requiring dust protection, a version with plastic case will be available, option (N), in Yr. 2024.

The TECS/TEPS45-65F meet the safety agency approval UL62368-1 and c-UL (equivalent to CAN/CSA-C22.2 No.62368-1), EN62368-1. The products also comply with the Japanese Electrical Appliance and Material Safety Act DEN-AN

The TECS/TEPS45-65F are suitable for a wide range of applications including measurement and analysis equipment, machine tools, industrial printers, display equipment, and ticketing machines. They comply with the RoHS and Low Voltage directives and carry the CE mark and UKCA.



Based on the latest power electronics technologies e.g., GaN, planar-magnetics the COSEL TECS/TEPS 45W and 65W saves up to 58% board space for industrial applications.

**Related links:**

TECS : <https://en.cosel.co.jp/product/powersupply/TECS/>

TEPS : <https://en.cosel.co.jp/product/powersupply/TEPS/>



#### **About COSEL:**

Established in Japan 1969, COSEL is one of the world's leading designers and manufacturers of high performance AC-DC Power Supplies, DC-DC Converters and EMI Filters. With quality, reliability & flexibility as our main focus, we pride ourselves on developing some of the highest quality and most reliable products seen anywhere in the world today. The Cosel Group is a \$255 million global company employing some 710 staff with sales offices throughout Japan, Asia, Europe and North America. Our product range is aimed mostly at demanding applications within the Industrial, Factory Automation, Medical, Telecoms, Lighting, Audio/Broadcast & Renewable Energy sectors. A flexible approach with full in-house design means we deliver products using the very latest technology meeting the growing demands of our customers.

<https://en.cosel.co.jp>

#### **Press contact**

Head Office COSEL CO., LTD.

Email:sales@cosel.co.jp

Tel: +81-764-32-8152