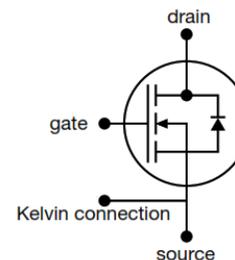
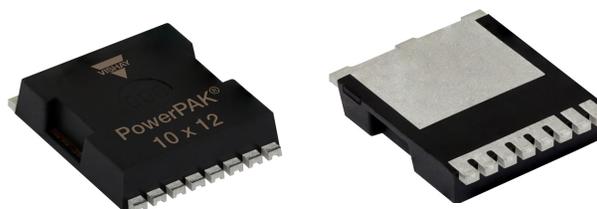


SiHK055N60EF

The Lowest $R_{DS(on)}$ in the PowerPAK® 10 x 12 Package

- 600 V SJ 4th generation EF series with fast body diode [View Product Page](#)
- Industry's lowest $R_{DS(on)} * Q_g$ FOM
- TOLL package
- Kelvin source connection for cleaner signal path: better efficiency, less electrical noise
- Suitable for switched-mode power supplies (SMPS), power factor correction (PFC) circuits, electric vehicle chargers, solar inverters, industrial motor drives, and lighting
- Competition: ST STW55NM60, Infineon CoolMOS™ 8



Part Numbers	V_{DS}	R_{DS} (max)	Q_g	Q_{gd}	$C_{o(tr)}$	$R_{DS} * Q_g$ FOM	$R_{DS} * C_{o(tr)}$ FOM	Status
SiHK045N60EF	600	52	70	15	1069	3.6	55.5	Released
SiHK055N60EF	600	58	60	14	749	3.5	43.4	Released

SUPERJUNCTION TECHNOLOGY OVERVIEW



A superjunction MOSFET is an advanced type of power MOSFET designed to overcome the limitations of traditional MOSFETs, especially in high voltage applications (typically above 600 V).

In Simple Terms:

- A regular MOSFET is like a one-lane road. It can carry a certain amount of power, but if you want it to handle high voltage, the road has to be really long, which slows things down and creates resistance and heat.
- A superjunction MOSFET is like a multilane highway. It can carry a lot more power without needing to be long or slow. This makes it much more faster and efficient.

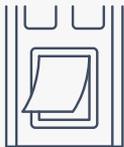
The SiHK055N60EF Has Low Gate Charge (Q_g) and Low $R_{DS(on)}$ (On-Resistance)

- **Low Gate Charge (Q_g)** reduces the amount of energy required to switch the MOSFET on and off. This results in lower switching losses, which are important in high frequency applications such as DC/DC converters.
- **Low $R_{DS(on)}$ (On-Resistance)** leads to higher efficiency in power applications by reducing heat generation and improving overall energy use.

In Simple Terms:

The SiHK055N60EF has a fast body diode — used in motor drivers, power supplies, and inverters.

Think of the body diode like a one-way flap door that opens to let current through when it's needed.



- A slow flap slams shut late — it causes clogs, heat, and noise.
- A fast flap snaps shut quickly — everything flows smoothly and cleanly.

The SiHK055N60EF has a Kelvin source pin to give the gate driver a clean signal path.

Imagine you're trying to have a phone call in at loud party.

- Without a Kelvin source = you're yelling over the crowd.
- With a Kelvin source = you have a private, quiet phone line with much clearer and faster communication."



RESOURCES



[Product Page](#)



[Infographics](#)