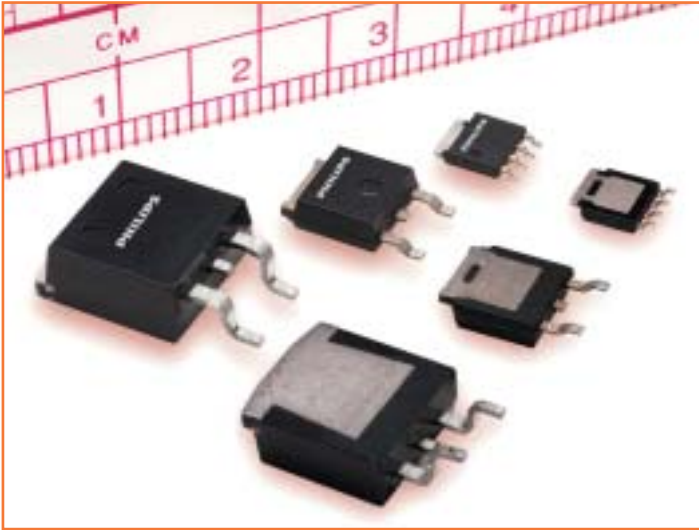


# Extending our LFPAK portfolio

Delivering superior thermal properties from a compact footprint, Philips' extended range of power MOSFETs in LFPAK improves the power and space efficiency of designs across applications in many market segments. And due to the LFPAK's low inductance, this new MOSFET range is also ideal for high-frequency applications.



## Key features

- Enhanced thermal properties
- Lower inductance (1.1 nH – 50% less than SO8)
- Small footprint
- Low profile (1.1 mm – 40% thinner than SO8)

## Key benefits

- Increases device efficiency
- Faster switching
- Cooler running applications

## Key applications

- DC/DC converters
- Notebook
- Computing equipment
- High frequency applications

# MOSFETs in Loss Free PAcKaging

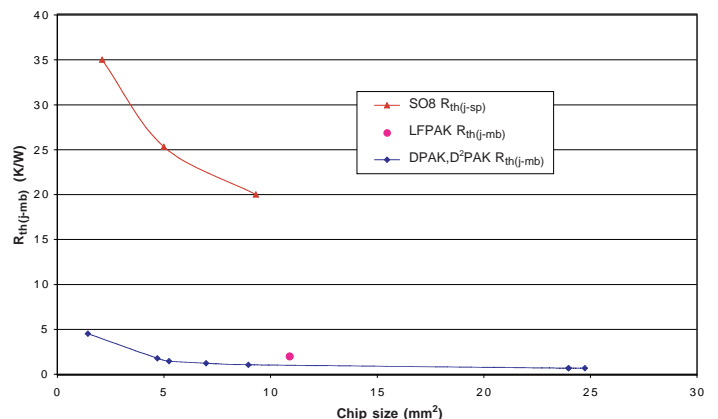
- smaller, faster, more efficient



Philips' SOT669 Loss Free PAcKage (LFPAK) blends the small-size advantages of SO8 with the superior thermal properties of much larger packages such as DPAK. Its enhanced thermal characteristics allow heat to be dissipated easily, maintaining the lowest possible operating temperatures. When combined with their improved performance, these new LFPAK MOSFETs offer minimal power loss, enabling manufacturers in all markets to develop smaller, more efficient designs.

For 'traditional' power packages such as D<sup>2</sup>PAK, the primary thermal pathway is vertically downwards through the mounting base of the package and into the PCB. However, LFPAK also dissipates a significant quantity of heat upwards through the top of the package. This makes optimal use of all available heatsinking options and delivers improved thermal resistances – much lower than SO8 and comparable with D<sup>2</sup>PAK or DPAK.

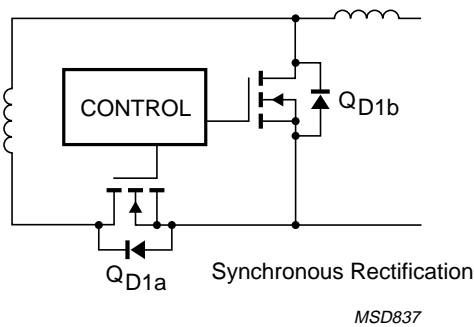
The internal construction of the LFPAK also gives it a lower inductance than comparable packages, improving MOSFET switching speeds. This makes our extended range of MOSFETs in LFPAK extremely well suited to high-frequency applications.



# PHILIPS

# Extending our LFAK portfolio

MOSFETs in Loss Free PAcKaging - smaller, faster, more efficient



## Typical application: DC/DC conversion

Modern DC/DC converter design is driven by the goal of increasing efficiency, to decrease power consumption. For isolated converters, a major source of inefficiency is the secondary side synchronous rectifier MOSFETs, while for non-isolated buck converters, significant losses can also occur in the converter MOSFETs. LFAK's improved thermal properties increase the efficiency of these MOSFETs and hence the complete converter.

Previously, various packages – typically D<sup>2</sup>PAK, DPAK and SO8 – have been used for both these applications. Now, our LFAK-housed MOSFETs deliver the best of both worlds, combining the performance of D<sup>2</sup>PAK with the small footprint of SO8.

Type Number	V <sub>DS</sub> (V)	Max R <sub>DS(on)</sub> (mΩ)			Q <sub>GD</sub> (nC)
		V <sub>GS</sub> = 10 V	V <sub>GS</sub> = 4.5 V	V <sub>GS</sub> = 2.5 V	
PH2520U	20		2.5	3.2	18
PH3120L	20	2.35	3.4		13
PH2925U	25		2.9	3.7	20
PH3230S	30	3.2	6.5		13
PH3830L	30	3.8	4.9		11
PH7030L	30	7.9	10		3.2
PH8230E	30	8.2	13.2		5
PH4530L	30	6.3	8		4.1
PH5330E	30	5.7	8.5		6
PH4840S	40	4.1	4.8 (7 V)		16
PH1955L	55	16	21		7

## Philips Semiconductors

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SCS 78

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