

# Power Management

## Semiconductor solutions for laptops and notebooks

Philips' robust portfolio of semiconductor products for power management and power supply gives designers of portable laptop and notebook computers innovative solutions for increasing power efficiency, lowering chip count, saving board space, and reducing weight.



Philips products for power management and supply  
(followed by part number)

### Laptops and notebooks (motherboard)

- > DDR termination regulator: NE57811
- > 20-50 V N-channel MOSFETs: PH3230, PH5330
- > Temperature sensors: LM75A, NE1617, NE1618, NE1619
- > Reset switches: MAX708, MAX709, MAX810

### Laptops and notebooks (AC adapter)

- > GreenChip™ II flyback (SMPS) controller: TEA1552



Backed by industry-leading research and world-class manufacturing, Philips power ICs deliver high performance in a wide range of functions. From the world's most efficient DC/DC converter to highly integrated, fully programmable power management units, Philips power products consistently provide higher efficiency, a smaller footprint, optimal use of board space, and lower cost. For portable computers such as laptops and notebooks, Philips offers innovative power solutions for DDR termination, 20-50V N-channel MOSFETs, SMPS controllers, reset switches, temperature sensors, and more.

### Single-chip DDR termination regulator

The Philips NE57811 single-chip DDR termination regulator improves signal integrity and I/O bandwidth in as little as 30 percent of the space required by discrete solutions. Its linear design eliminates the need for external inductors or switching FETs. It maintains termination voltage at one-half the memory supply voltage. Providing sustained current up to +/- 3.5 A, the NE57811 is compatible with today's 2.5 V memories and supports next-generation 1.8 V systems.

### 20-50 V N-channel MOSFETs in LFPACK packaging

For DC/DC converters used in high-frequency power switching applications, 20-50 V N-channel MOSFETs deliver cooler, more efficient performance through LFPACK, Philips' new 'loss-free' packaging technology. LFPACK improves on the thermal characteristics of the SO8 package, enabling the Philips PH3230 and PH5330 MOSFETs to minimize power dissipation by lowering the device operating temperature and transferring heat more efficiently. In addition, they lower resistance by about 50 percent and reduce package height by 40 percent.

# PHILIPS

# Power Management

## Semiconductor solutions for laptops and notebooks



*Philips offers a complete line of semiconductor products for handling power functions in laptops and notebook computers.*



### DESKTOP & WORKSTATION MOTHERBOARDS

- > DDR terminators
- > MOSFETs in LFPAK
- > temperature sensors
- > reset switches



### SERVERS

- > integrated buck converters
- > intelligent OR-ing switch
- > MOSFETS in LFPAK



### LAPTOPS & NOTEBOOKS

- > DDR terminators
- > MOSFETs in LFPAK
- > GreenChip II flyback controllers
- > temperature sensors
- > reset switches

### GreenChip II flyback (SMPS) controller

The energy-efficient Philips TEA1552 switch mode power supply (SMPS) controller operates at a standby power of one W with power levels of more than 75 W. This enables notebook manufacturers to meet strict regulatory requirements for low standby power. A member of the Philips GreenChip II family, the highly integrated TEA1552 operates directly from rectified universal mains (70-276 VAC). To minimize switching losses, true valley switching is enabled in all operating modes. There is a safe restart mode for system fault conditions, over- and under-voltage protection, and a cycle-skipping standby mode for no-load operation with less than 300 mW. Different operating modes for different power levels provides maximum efficiency.

### Reset switches

Philips reset switches monitor power-supply and battery functions over a range of voltages, improving system reliability and accuracy. Philips MAX70x and MAX810 active-high and active-low reset output switches are direct pin-for-pin replacements for industry-standard products.

### Temperature sensors

For monitoring temperature changes, the highly accurate Philips LM75A sensor supports a temperature resolution of 0.125 °C and includes a thermal Watchdog™. Programmable NE161x sensors monitor internal and remote temperatures.

### Philips Semiconductors

Philips Semiconductors is a worldwide company with over 100 sales offices in more than 50 countries. For a complete up-to-date list of our sales offices please e-mail [sales.addresses@www.semiconductors.philips.com](mailto:sales.addresses@www.semiconductors.philips.com). A complete list will be sent to you automatically. You can also visit our website <http://www.semiconductors.philips.com/sales>.

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