

# $\mu$ TrenchMOS™

## 100, 30 and 20 V N-channel

# A new dimension in power MOSFETs in SOT23

Continuing Philips commitment to expand the innovative  $\mu$ TrenchMOS portfolio, the new PMV series of 100, 30 and 20 V N-channel MOSFETs brings this family's performance benefits to the industry standard SOT23 package. Ideal for a host of applications, the PMV series also provides 100 V designers with a new space saving option.



### Key features

- Low  $V_{GS(th)}$  (1.8 V) capability
- Low  $R_{DS(ON)}$
- Enhanced thermal and electrical properties

### Key benefits

- High performance from a small footprint
- Lower power dissipation
- Cooler running applications
- Greater efficiency

### Key applications

- Battery powered motor control
- Load switch in notebook PC's
- High speed switch in set-top box power supplies
- Driver FET in DC/DC converters

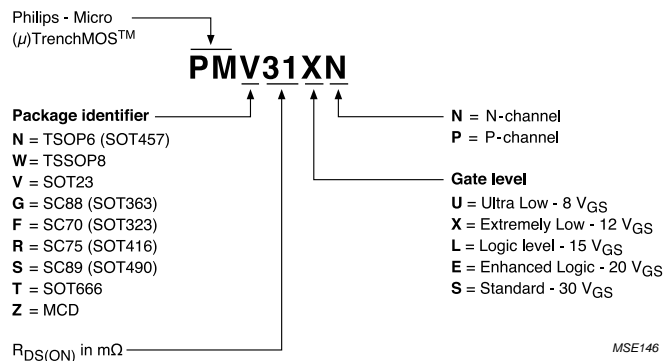
The rapidly growing market for portable and hand held electronic products fuels a voracious appetite for ever smaller, lighter and more efficient electronic components. Philips has a long track record of understanding these customer needs and delivering innovative solutions. The latest new range of  $\mu$ TrenchMOS ultra small MOSFETs draws upon Philips Semiconductors' core strengths of leading edge TrenchMOS™ Technology and package miniaturization.

The PMV series of SOT23 miniature Power MOSFET's are suitable for a wide range of applications including Load Switching, Motor Control and ultra compact DCDC conversion.

Type Number	$V_{DS}$ Max [V]	$R_{DS(ON)}$ @ $V_{GS} =$			
		10 V typ [m $\Omega$ ]	4.5 V typ [m $\Omega$ ]	2.5 V typ [m $\Omega$ ]	1.8 V typ [m $\Omega$ ]
PMV213SN	100	213	-	-	-
PMV117EN	30	75	115	-	-
PMV60EN	30	47	60	-	-
PMV45EN	30	35	45	-	-
PMV56XN	20	-	56	77	-
PMV31XN	20	-	31	44	-
PMV40UN	30	-	40	45	55
PMV30UN	20	-	30	36	44

By customer request two types have been added to the range of  $\mu$ TrenchMOS products in SOT23 package

### $\mu$ TrenchMOS™ part numbering



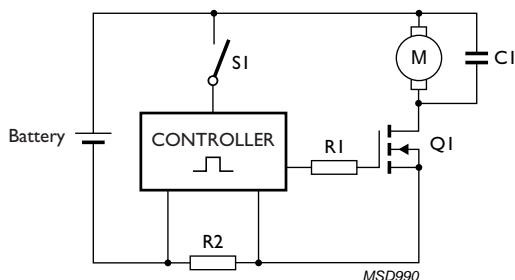
# PHILIPS

# $\mu$ TrenchMOS™ a new dimension in power

## 100, 30 and 20 V N-channel MOSFETs in SOT23



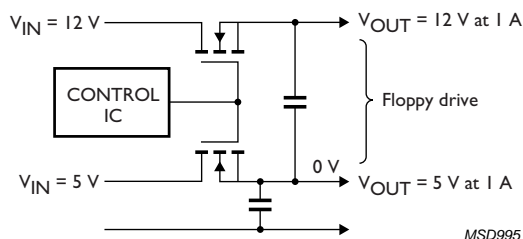
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### Battery powered motor control

Small motor control is a common requirement of many domestic and industrial devices and a typical application circuit is illustrated to the left. Despite variations in the motor load – which varies the current through the MOSFET – the speed of the motor must remain constant. Observing the current through the motor and the MOSFET by monitoring the voltage developed across R2, the controller can maintain a highly stable motor speed, irrespective of load. In this circuit the MOSFET gate current can be limited and any spikes generated by the motor are suppressed.

### Peripheral load switch



### Load/supply routing switches in notebook PCs

Effective power saving in today's notebook PCs is essential, both to conserve battery life and because of wider environmental concerns. To achieve this power is often routed to different parts of the motherboard in different modes. For example, the charging circuit can be disabled and the external supply inputs isolated when the laptop is powered from the battery, while peripheral devices such as the hard drive, floppy drive, LCD screen are turned off when not used for prolonged periods of time. The low power dissipation of Philips'  $\mu$ TrenchMOS delivers this in an extremely small footprint, often the second important design requirement in this market area.

## Philips Semiconductors

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