

## 40 V N-ch power MOSFETs U-MOSIX-H series

“TPH1R204PB” is a low spike voltage N channel power MOSFET product in the “U-MOSIX-H series”, using the 40 V SOP Advance package. The new product is able to maintain low spike voltage which is generated between the drain and the source at the switching operation, making it suitable for synchronous rectification in a secondary side of switching power supplies that require low EMI. Both low EMI and highly efficient products have been lined up in the U-MOSIX-H series, so users can choose products that are suitable for their applications.



### Features

- Industry-leading low On-resistance<sup>[1]</sup>:  $R_{DS(ON)}=1.2\text{ m}\Omega$  (max) @ $V_{GS}=10\text{ V}$
- Low Spike voltage
- Low output charge:  $Q_{oss}=56\text{ nC}$  (typ.)

### Applications

- Efficient DC-DC converters
- Efficient AC-DC converters
- Power supplies
- Motor drives



Power supplies



Motors

### Product Specifications

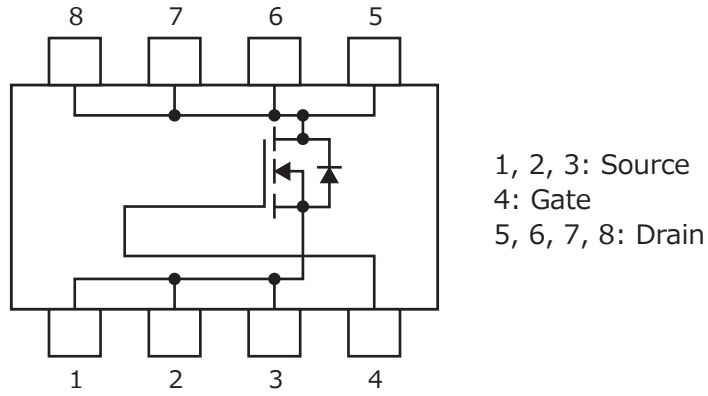
(Unless otherwise specified, @ $T_a=25^\circ\text{C}$ )

Part number	Polarity	Absolute maximum ratings		Drain-source On-resistance $R_{DS(ON)}$ max (m $\Omega$ )		Total gate charge $Q_g$ typ. (nC)	Output charge $Q_{oss}$ typ. (nC)	Input capacitance $C_{iss}$ typ. (pF)	Package	Series
		Drain-source voltage $V_{DSS}$ (V)	Drain current (DC) $I_D$ @ $T_c=25^\circ\text{C}$ (A)	@ $V_{GS}=10\text{ V}$	@ $V_{GS}=6\text{ V}$					
				TPH1R204PB	N-ch					

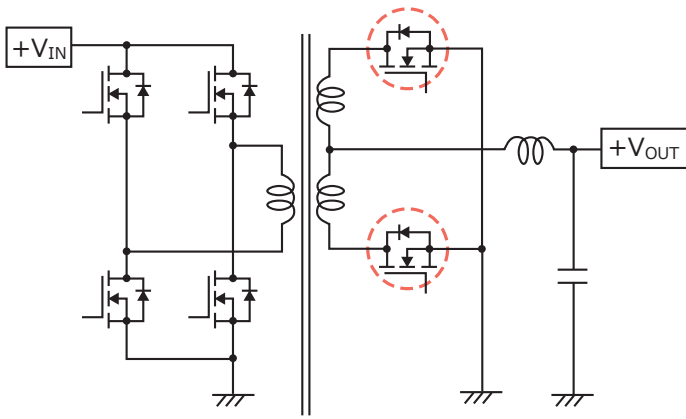
Note:

[1] As of June 2017, from a survey by Toshiba.

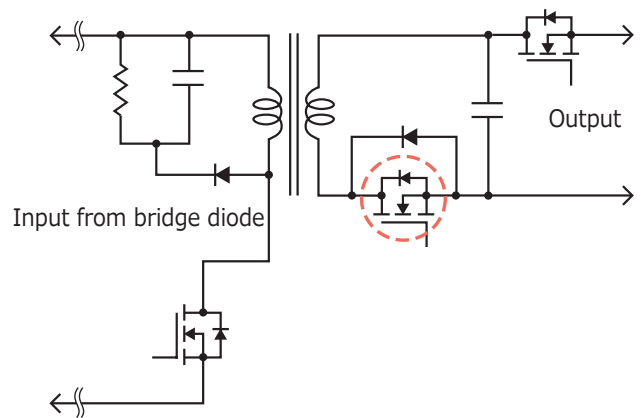
# Internal Circuit



# Application Circuit Example



**Power supplies (Full bridge converter)**



**Power supplies (Flyback converter)**

The application circuits shown in this document are provided for reference purposes only. Thorough evaluation is required, especially at the mass-production design stage. Toshiba Electronic Devices & Storage Corporation does not grant any license to any industrial property rights by providing these examples of application circuits.

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