TP44440HB – 650 V GaN Half-Bridge, 360 mΩ (Low-Side) + 360 mΩ (High-Side)

1.0 Features

- 650 V enhancement mode power HEMTs
- R_{DSON}: 360 mΩ (LS) + 360 mΩ (HS)
- Adjustable turn-on/off speed
- Reverse conduction capability
- Zero reverse-recovery loss
- High (>10 MHz) switching frequency capability
- Interfaces with 6 V and ≥12 V drivers (see Application Information)
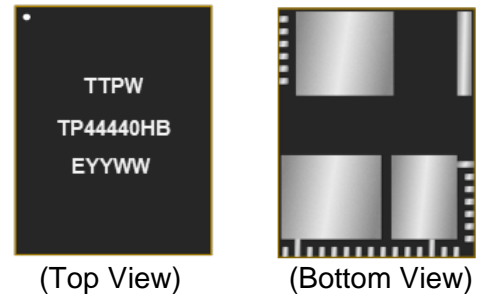- Low-side thermal-pad LV-isolated from the source for better thermal connection even with current-sense resistors

(Top View)   (Bottom View)

Figure 1 Device Image
(30 pin 8×10×0.8 mm QFN Package)

2.0 Topologies and Applications

- Ac-dc, dc-dc, dc-ac converters
- PFC and inverter applications
- ACF and AHB based power supplies
- High frequency LLC resonant converters
- Mobile chargers and laptop adapters
- Half- and full-bridge dc-dc converters
- LED and motor drives

RoHS/REACH/Halogen Free Compliance

3.0 Description

The TP44440HB is a half-bridge consisting of two 650 V GaN HEMT power devices. The low-side (LS) and the high-side (HS) devices are of 180 mΩ each. This co-packaged solution minimizes inductance in the power loop enabling clean switching even at high-current high-frequency operations. As provided in the application information, simple external interface circuit can be used to drive this part both from dedicated 6 V GaN drivers as well as more traditional 12 V drivers. Resistors in the individual gate path can be used to control the switching speeds of the low-side/high-side for the best EMI performance. The solution is well suited for all half-bridge applications with a view towards high performance and compact solution.
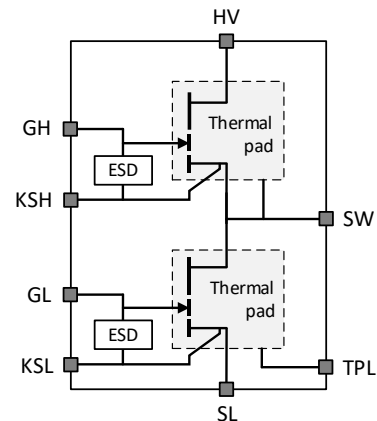

Figure 2 Functional Block Diagram

4.0 Ordering Information

Table 1 Ordering Information

Base Part Number	Package Type	Form	Qty	Reel Diameter	Reel Width	Orderable Part Number
TP44440HB	30 Pin 8×10×0.8 mm QFN	Tape and Reel	3000	13" (330 mm)	18 mm	TP44440HBTRPBF
Evaluation Board						TP44440HB-EVB