

TP44220HB – 650 V GaN Half-Bridge, 180 mΩ (Low-Side) + 180 mΩ (High-Side)

1.0 Features

- 650 V enhancement mode power HEMTs
- $R_{DS(on)}$: 180 mΩ (LS) + 180 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

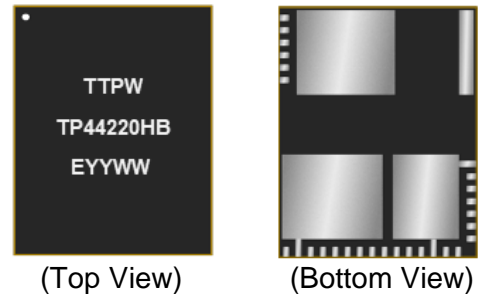


Figure 1 Device Image
(30 pin 8x10x0.8 mm QFN Package)

2.0 Topologies and Applications

- Ac-dc, dc-dc, dc-ac converters
- Totem-pole and bi-directional PFCs
- Half- and full-bridge LLC converters
- High-frequency electronic transformers
- LED and motor drives
- Server power supplies
- Inverters



RoHS/REACH/Halogen Free Compliance

3.0 Description

The TP44220HB 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.

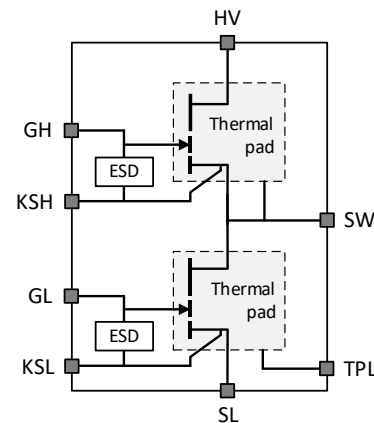


Figure 2 Functional Block Diagram

4.0 Ordering Information

Table 1 Ordering Information

Base Part Number	Package Type	Form	Qty	Reel Diameter	Reel Width	Orderable Part Number
TP44220HB	30 Pin 8x10x0.8 mm QFN	Tape and Reel	3000	13" (330 mm)	18 mm	TP44220HBTRPBF
Evaluation Board						TP44220HB-EVB