

PHB33NQ20T

N-channel TrenchMOS standard level FET

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Product data sheet

1. Product profile

1.1 General description

Standard level N-channel enhancement mode Field-Effect Transistor (FET) in a plastic package using TrenchMOS technology. This product is designed and qualified for use in computing, communications, consumer and industrial applications only.

1.2 Features and benefits

- Higher operating power due to low thermal resistance
- Low conduction losses due to low on-state resistance
- Simple gate drive required due to low gate charge
- Suitable for high frequency applications due to fast switching characteristics

1.3 Applications

- DC-to-DC primary side switching

1.4 Quick reference data

Table 1. Quick reference

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|--------------------------------|----------------------------------|---|-----|-----|------|------------|
| V_{DS} | drain-source voltage | $T_j \geq 25\text{ °C}; T_j \leq 175\text{ °C}$ | - | - | 200 | V |
| I_D | drain current | $T_{mb} = 25\text{ °C}; V_{GS} = 10\text{ V};$ see Figure 1 ; see Figure 3 | - | - | 32.7 | A |
| P_{tot} | total power dissipation | $T_{mb} = 25\text{ °C};$ see Figure 2 | - | - | 230 | W |
| Dynamic characteristics | | | | | | |
| Q_{GD} | gate-drain charge | $V_{GS} = 10\text{ V}; I_D = 25\text{ A};$ $V_{DS} = 100\text{ V}; T_j = 25\text{ °C};$ see Figure 11 | - | 9.6 | - | nC |
| Static characteristics | | | | | | |
| $R_{DS(on)}$ | drain-source on-state resistance | $V_{GS} = 10\text{ V}; I_D = 15\text{ A};$ $T_j = 25\text{ °C};$ see Figure 9 ; see Figure 10 | - | 65 | 77 | m Ω |

