Infineon TD330N16KOF

01 Thyristor / Diode Power Module / system role

Product function

Infineon TD330N16KOF provides controlled and rectifying semiconductor paths for a power-conversion assembly whose cooling, gate drive and protection are engineered together.

Selected configuration

The 330 A average on-state rating is specified at a case temperature of 85 °C. Thermal design must account for conduction losses and the actual waveform rather than using the current rating independently of cooling conditions.

Functional path

Power circuit	Gate-controlled semiconductor path	Thermal and protective design	Controlled converter output

Configuration	1600 V blocking-voltage class
Interface	330 A average current at 85 °C case temperature
Operating feature	Separate mounting and terminal torque requirements

The thyristor requires an appropriate gate-drive circuit and current-rise control. The specified trigger values, latching current and holding current describe different operating conditions and must not be treated as interchangeable gate-drive targets.

TD330N16KOF

02 Technical operating envelope

Repetitive blocking-voltage class	1600 V
Average on-state current	330 A at case temperature 85 °C
Maximum RMS on-state current	520 A
10 ms surge current at 25 °C	12500 A
10 ms surge current at maximum junction temperature	10000 A
Maximum junction temperature	130 °C

Gate trigger current	200 mA maximum at 25 °C, VD = 12 V
Gate trigger voltage	2 V maximum at 25 °C, VD = 12 V
Maximum on-state voltage	1.28 V at 800 A and maximum junction temperature
Mounting torque	5 N·m, ±15%
Power-terminal torque	12 N·m, ±10%
Insulation test voltage	3.0 kV RMS for 1 minute

Current, surge, gate and thermal values apply only at their stated waveform, temperature and test conditions. The optional TIM execution is not assumed.

Operating interpretation

Do not treat surge current, insulation tests or gate thresholds as continuous operating setpoints.

Configuration boundary

Match circuit topology, gate drive, cooling interface and protection coordination.

TD330N16KOF

03 System integration and applications

Phase-controlled conversion

The thyristor path operates with the converter's engineered gate-drive and commutation arrangement.

Rectifying power assemblies

The diode and thyristor circuit configuration forms part of the selected converter topology.

Thermally managed high-current stages

Heatsink and interface design support operation within the case and junction limits.

Protected semiconductor replacement

Surge and I^2t data assist the equipment-specific protection and replacement assessment.

System and supply context

Infineon TD330N16KOF operates within the following defined system context. Confirm the TD330N16KOF circuit arrangement and supplied thermal-interface execution.

Application boundary

Current, surge, gate and thermal values apply only at their stated waveform, temperature and test conditions. The optional TIM execution is not assumed.

Can the 12500 A value of TD330N16KOF be used as a continuous-current rating?

No. It is a 10 ms surge rating at 25 °C junction temperature. The corresponding hot-junction surge rating is 10000 A.

TD330N16KOF

04 Engineering selection decisions

At what case temperature is the 330 A rating of TD330N16KOF specified?

The average on-state current rating is stated at 85 °C case temperature. The actual waveform and cooling design must keep the junction within its limit.

Why are holding and latching current different for TD330N16KOF?

Latching current concerns sustaining conduction immediately after triggering, while holding current concerns remaining on once conduction is established. The gate circuit and load must satisfy the relevant conditions.

Are the mounting and electrical-terminal torques of TD330N16KOF the same?

No. Mounting torque is 5 N·m with ±15% tolerance, while the power-terminal connection torque is 12 N·m with ±10% tolerance.

What does the insulation test rating of TD330N16KOF establish?

The specified test is 3.0 kV RMS for one minute, with a separate 3.6 kV one-second value. It is not permission to ignore the equipment insulation, grounding and clearance design.

TD330N16KOF

05 Configuration boundary and references

Lifecycle and support

TD330N16KOF is active and preferred. Apter Power availability, offered condition and dispatch timing are confirmed separately in the quotation.

Replacement assessment

Match circuit topology, gate drive, cooling interface and protection coordination.

Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains selection and system context. The separate installation guide covers preparation, connection, tests and handover; use it together with the applicable manufacturer instructions.

Technical basis

Infineon TT330N / TD330N Technical Information, revision 3.5.

Related product navigation

- Infineon FZ1200R33KF2C
- Infineon FZ800R16KF4

These are related references, not confirmed substitutes or an automatically approved assembly.

Product enquiries