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GTO Thyristor devices that assure high reliability and equipment availability levels

Rigorous testing of functionalities on all Dynex's GTO Thyristor devices coupled with techniques used in design and manufacturing screens out early life failures. This means Dynex are able to provide the market with a highly reliable product for GTO traction requirements.

Dynex engineers carry out rigorous testing of blocking and switching functionalities on all GTO thyristor devices prior to shipping for end user applications to screen out early life failures. All Dynex's Gate Turn Off Thyristors are, therefore assured to give the highest reliability.

The end of line testing regime used involves GTO thyristors being subjected to conditions that simulates what they will be exposed to in the field environment. This rigorous regime coupled with techniques used in the product's design and manufacturing means Dynex have very low levels of field returns.

GTO thyristors are the highest performing and reliable Bipolar device with end user applications benefitting from reduced system costs, improved thermal characteristics, maximised system efficiency and reliable operation in severe environments.

Dynex range of Bipolar thyristors for extremely fast turn-on are based on its Gate Turn-Off (GTO) structures.

GTO thyristor devices range from 1300V and 4500V and current ratings of 225A to 1180A. These devices include parts specifically designed and developed for use in railway traction and light rail propulsion drives. The GTO thyristor devices are highly reliable reducing the need for maintenance and replacement throughout their years of service.

The manufacturing and diffusion techniques used to create a Gate Turn Off Thyristor offers a number of benefits such as optimal anode sizes and control of the size uniformity of the separate elements within a device. This results in a closely synchronized turn off of all elements, thus minmising an excessive current flow in any element and improving device lifetime .

March 2022- Dynex Semiconductor Ltd. Doddington Road, Lincoln, LN6 3LF,United

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GTO Thyristor Key Features

- ✓ Fully floating construction,
- ✓ Pulley wheel edge bevel technology – this enables 100% of blocking capability to be realized, this allows thinner silicon to be used.
- ✓ The use of an optimised silicon thickness allows both switching and other losses to be reduced.
- ✓ Double side cooling
- ✓ High reliability in service
- ✓ High voltage capability
- ✓ Fault protection without fuses
- ✓ High surge current capability

GTO Applications

- ✓ Induction heating
- ✓ Industrial converters - steel mills, Metal forming plants
- ✓ AC & DC motor drives
- ✓ Static Var compensators
- ✓ Traction propulsion converters