

IXYS UK Westcode introduces a new 2.2kV distributed gate thyristor



IXYS UK Westcode Ltd. announces a new pressure contact distributed gate thyristor with increased power density. This new fast thyristor with turn-off time of as little as 25µs and current rating 1605A, is symmetrical blocking with V_{drm}/V_{rrm} equal to 2200V and therefore suitable for both voltage and current fed applications.

This new fast thyristor has been introduced to complement the asymmetric blocking R1700MC device and is based on the same die size, gate geometry and silicon design; however with the option of fully symmetrical blocking voltage up to the maximum available voltage of 2200V. The new device has a competitive current rating of 1605 amperes, which representing a significant improvement when compared to previous IXYS UK designs in the same mechanical footprint; with 25 percent more current rating than the equivalent voltage in the older designs. . In common with other recently introduced fast thyristors based on the 56mm die this new device has an improved pilot thyristor design and a redesigned distributed gate geometry for the main thyristor which gives improved gate trigger characteristics and transfer of current from the pilot device while retaining the requirement for high di/dt capability. The 56mm diameter silicon die are bonded to a metal disc to ensure the best steady state and thermal transient performance. The die is encapsulated in fully hermetic 50mm electrode contact diameter ceramic packages, with an industry standard overall diameter of 74mm. Provided the correct thermal conditions are observed, with a repetitive di/dt rating of 1000A/µs the device can be used in applications with repetitive frequency up to 10kHz.

The full symmetrical blocking device is available in five different switching classes at two standard voltage grades, part number designations are as follows: 2000 volt parts are R1605MC20E with tq 25µs, R1605MC20F with tq 30µs, R1605MC20G with tq 35µs, R1605MC20H with tq 40µs and R1605MC20J with tq 50µs; 2200 volt parts are R1605MC22E with tq 25µs, R1605MC22F with tq 30µs, R1605MC22G with tq 35µs, R1605MC22H with tq 40µs and R1605MC22J with tq 50µs.

Typical applications for this device include: Induction power supplies for melting, billet heating and surface treatments; as well as resonant power supplies and pulse switches for applications including high power magnets and lasers.

For more information, please contact

IXYS UK Westcode Ltd

Author—Mr. Frank Wakeman

E-mail—f.wakeman@ixysuk.com



Langley Park Way

Chippenham, SN15 1GE, United Kingdom

Tel: +44 (0)1249 444524

Fax: +44 (0)1249 659448

E-mail: sales@ixysuk.net

www.ixysuk.com