

# ComPack Family... Compact Package with highest power density

700 A / 1600 V PHASE-LEGS

May 2014

## Overview:

IXYS Corporation (NASDAQ: IXYS), a leader in power semiconductors and integrated circuits technologies for energy efficient products used in power conversion and motor control applications, announced today the introduction of a new bi-polar module for high power applications. The new ComPack family represents a compact package with the highest power density.

The ComPack design is resulting from the implementation of the newest assembly methods in combination with the well-proven, clip-soldered die technologies of IXYS. Different inner and outer features lead to a user-friendly product that fulfils the highest needs in reliability and functionality.

First products are phase-legs with varying topologies like dual thyristors, dual diode and thyristor/diode. The modules have a rated current of 700 Amperes per leg, improved surge rating and a maximum junction temperature of 140°C.

Internally the IXYS' Direct Copper Bonded (DCB) ceramic technology provides a high isolation voltage of 4800 V and represents the base to cover UL standards.

With the adapted copper base plate the ComPack concept achieves a very low thermal impedance that supports long-term reliability under highest power output usage.

Further the optimised DCB-Layout gives a perfect symmetrical internal design of the dies with the copper construction. This leads directly into an optimum for the terminal design providing M10 screw connections and a big surface to minimize the ohmic resistance.

Creepage and clearance distances are in line with the industrial standards and have been set to reduce additional efforts of the user to a minimum.

The ComPack family have a size and volume that is at least 1.5 times smaller compared with current products in this power class. With this reduction also the weight of the ComPack module has been improved to a value that is 3 times lower.

With this development IXYS is allowing the designer to switch more power than historically available, facilitating higher power densities, greater material efficiency and lower system cost and weight.

"These new IXYS rectifier modules are first in the line of modules that set a new benchmark for bi-polar power rectification, raising the standards and offering our customers innovation in extremely rugged, efficient product design." commented Dr. Nathan Zommer CEO and Chairman of IXYS.



## Features

- Optimized creepage & clearance distances
- Clip-soldered die technology
- Less weight
- Optimized heatsink & DCB construction
- 93 mm x 65 mm x 50 mm (L x W x H)
- M10 screw connections

## Applications

- Motor control, softstarter
- AC-Control
- UPS
- Input rectification
- Supplies for DC power equipment
- Field supply for DC motors

TYPE	$I_{TAVM}$	$V_{RRM}$
MCMA 700 P 1600CA	700	1600
MCMA 700 P 1600NCA	700	1600
MCMA 700 PD 1600CB	700	1600
MDMA 700 P 1600CC	700	1600

# SimBus F... flexible solutions for 2- and 3- level topologies

NEW 17 MM MODULE GENERATION

May 2014

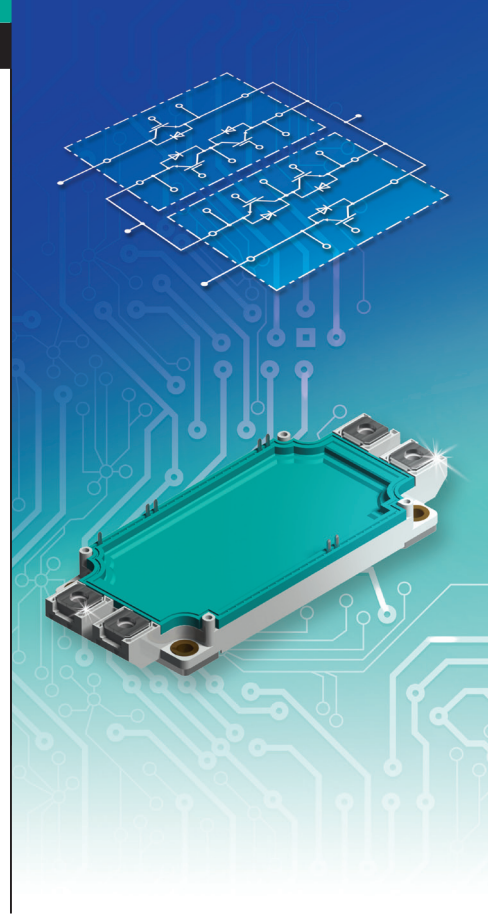
## Overview:

SimBus F represents one of the newest package developments of IXYS. This new generation of DCB-isolated copper base modules provide several new features. Combined with the benefits of well-proven technologies SimBus F is an optimized semiconductor product for power conversion with focus on 2-level and 3-level inverter applications. The outline of this package type using the industrial standard height of 17 mm facilitating easy bus bar connections between the rectifier and inverter stages. Direct Copper Bonded (DCB) substrates – also manufactured at IXYS – allow the user 4800 V isolation voltage between terminals and heat sink. Pressfit pins for the control contacts are under evaluation.

SimBus F is a standard module housing optimized for IGBT phase leg configuration featuring high current density and low stray inductance. Equipped with IXYS XPT IGBTs and SONIC free wheeling diodes SimBus F gives the customer a reliable solution which is 100% sourced by IXYS. Common applications for the SimBus F are solar inverters, motor drives, DC to DC chopper systems and UPS power inverters.

The first modules released are the 450A, 300A and 225A dual IGBT and the 225A brake/boost modules equipped with 1200V IXYS XPT IGBTs. The voltage range is extended to 650 V by the dual XPT IGBT 600 A MIXA600PF650TSF and further expanded by the MIXA600AF650TSF (common emitter) and MIXA600CF650TSF (common collector) options. Under development are 1700V, 300A and 450A dual IGBT in phase legs configuration.

MIXA430LD1200TSF is one half of a 3-level T-type (or NPC2 type) inverter topology using a combination of 650V and 1200V XPT IGBTs. Two of these modules in anti-parallel can form a simple solution for a T-type multi-level inverter featuring a reinforced switch to DC- neutral. With 1700V IGBTs and the combination of 1200V/1700V IGBTs, multi-level solutions are planned for 650V AC lines.



## Features

- Easy paralleling
- Rugged XPT design (Xtreme light Punch Through)
  - short circuit rated for 10  $\mu$ sec.
  - very low gate charge
  - square RBSOA @ 2 x  $I_c$
- SONIC™ diode
  - fast and soft reverse recovery
  - low operating forward voltage
- NTC included

## Applications

- AC motor control
- Solar inverter
- Soft starts
- UPS inverter
- Welding equipment
- Induction heating
- Pumps or fan controls

Products	$V_{ce}$ / V	$I_{c80}$ / A	Circuit
MIXA300PF1700TSF	1700	300	Phase leg
MIXA450PF1700TSF	1700	450	Phase leg
MIXA225PF1200TSF	1200	250	Phase leg
MIXA300PF1200TSF	1200	325	Phase leg
MIXA450PF1200TSF	1200	450	Phase leg
MIXA600PF1200TSF	1200	600	Phase leg
MIXA600PF650TSF	650	490	Phase leg
MIXA225RF1200TSF	1200	250	Brake / Boost
MIXA600AF650TSF	650	490	Common emitter
MIXA600CF650TSF	650	490	Common collector
MIXA430LD1200TSF	1200/650	430/345	Multi level (one half)

Coming soon

Coming soon

