

MOSBLOC MODULES

T-35-27

The MOSBLOC family of isolated modules are designed for high power industrial and commercial applications requiring improved ruggedness and efficiency. They are available with either IXYS' advanced MOSIGBTs or Power MOSFETs.

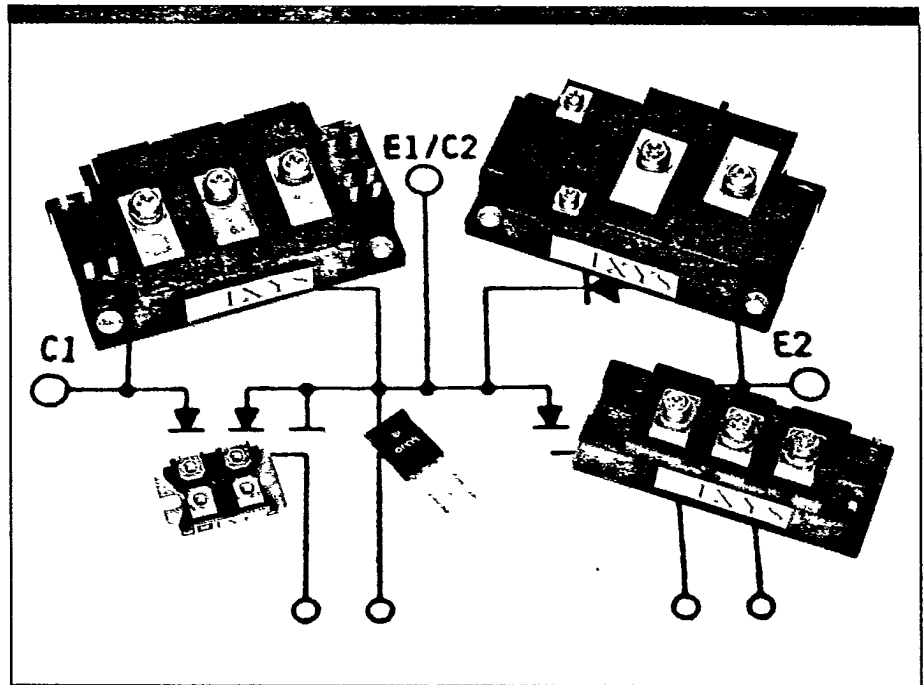
MOSBLOC modules incorporate a direct bond copper process for isolation which dramatically improves thermal resistance, power handling and power cycling capability compared to other isolation techniques. The modules are supplied in three standard package styles which meet U/L isolation standards.

MOSBLOC IGBT MODULES

The IXGQ series of MOSBLOC IGBT modules are configured in a half-bridge or "phase-leg" arrangement. They incorporate fast recovery rectifiers having typical "soft" reverse recovery times (t_{rr}) of 150 ns.

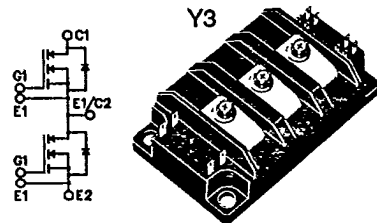
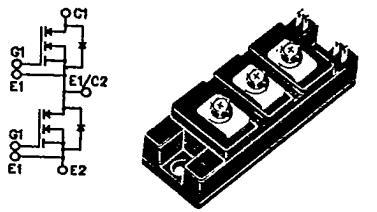
IGBTs combine the advantages of MOS gate drive simplicity with the high current handling of bipolar devices. The HDMOS process improves the peak current handling capability of these modules to allow for high current surges found in many motor drives and industrial control applications.

Our IXGQ inverter series of modules are capable of switching to 30 kHz while maintaining low conduction losses ($V_{CE(sat)}$ of 3.0 V typical). At 20 kHz operation, they are far superior in efficiency and drive simplicity than bipolar Darlington modules. This series is optimized for high power inverter applications such as UPS systems, welding, battery chargers, and DC motor drives.

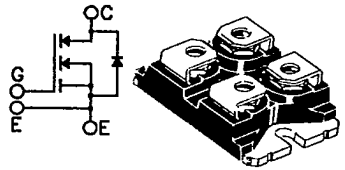


MOSIGBTs module package family.

MOSBLOC IGBT Phase-Leg Modules
Inverter Series (High Speed)

Part Number	Collector-Voltage V _{CEs} (Volts)	Collector Current I _p @ 25 °C Case		Saturation Voltage V _{CE(sat)} (Volts)	Current Fall Time t _f (nS)	Power Diss. P _c Max (Watts)	Circuit Configuration and Case Style
		I _c (Cont) (Amps)	I _c (Pulsed) (Amps)				
IXGQ200N100Y3	1000	200	400	4.0	800	800	
IXGQ150N100Y3	1000	150	300	4.0	800	600	
IXGQ100N100Y3	1000	100	200	4.0	800	400	
IXGQ200N60Y3	600	200	400	4.0	800	800	
IXGQ150N60Y3	600	150	300	4.0	800	600	
IXGQ75N100Y4	1000	75	150	4.0	800	350	
IXGQ50N100Y4	1000	50	100	4.0	800	300	
IXGQ25N100Y4	1000	25	50	4.0	800	125	
IXGQ100N60Y4	600	100	200	4.0	800	400	
IXGQ75N60Y4	600	75	150	4.0	800	350	
IXGQ50N60Y4	600	50	100	4.0	800	300	
IXGQ25N60Y4	600	25	50	4.0	800	125	

MOSBLOC IGBT Modules (Single MOSIGBT with fast recovery rectifier)

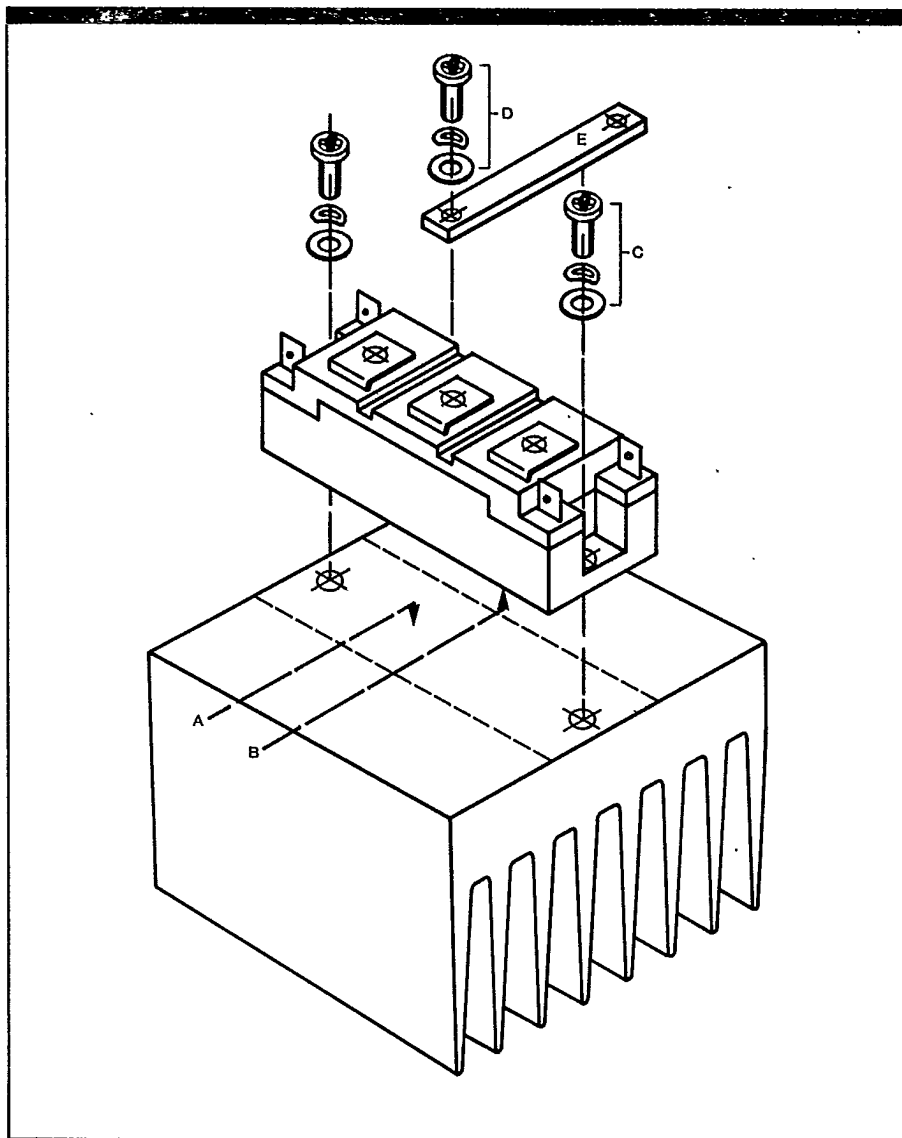
Part Number	Collector-Voltage V _{CEs} (Volts)	Collector Current I _p @ 25 °C Case		Saturation Voltage V _{CE(sat)} (Volts)	Current Fall Time t _f (nS)	Power Diss. P _c Max (Watts)	Circuit Configuration and Case Style
		I _c (Cont) (Amps)	I _c (Pulsed) (Amps)				
IXGN50N100U1 *	1000	50	100	3.7	1000	250	
IXGN75N60U1 *	600	75	150	3.2	800	250	
IXGN50N60U1 *	600	50	100	3.2	800	250	
IXGN75N50U1 *	500	75	150	3.2	800	250	
IXGN50N50U1 *	500	50	100	3.2	800	250	

* Available 4Q89

MODULE MOUNTING INSTRUCTIONS

MOSBLOC modules leave the factory in perfect working condition. Proper mounting is a prerequisite for reliable and trouble free operation. Therefore, the following instructions must be followed.

1. The heatsink mounting surface (A) must be free of all deposits. It should be plane convex and roughness should not exceed 0.03mm; 0.0004".
2. The contact surface (B) of the module must be free of deposits and should not be damaged. Apply a thin layer of heat conductive paste such as DC 340 evenly to the contact surface. Keep in mind that the most effective heat transfer is a metal to metal contact and the purpose of the conductive compound is to fill the voids in both the module surface and the heatsink surface. One of the best techniques is to apply the compound, spread it evenly, and then with a smooth rubber edge, remove as much as possible.
3. Place and fasten the module on the heatsink using 2 each, either M5 or M6 screws and washers (C). One of the washers should be a belleville type spring washer to provide a constant pressure over the temperature range expected at the heatsink surface. Tighten the screws slightly by hand and subsequently retighten them using a torque wrench 1.6 to 2.4 NM (14 to 21 in/lb). The depth of the thread required for aluminum heatsinks is greater than or equal to 12mm. For copper heatsinks it should be greater than or equal to 10MM.



4. Connect the main electrical terminals (1-2-3) with conductor bars (E) or cable lugs using the M5 screws and washers provided (D). The wiring diagram is provided on the label. Mount the conductor bars and heatsinks so that any additional pull or pressure on the module is avoided.
5. For power supply leads and load connectors, a cross sectional area according to DIN 46249 or IEC 48B Central Office 117, edition January 1979, is recommended.
6. Retighten the terminal screws with a torque wrench to 2.7-3.5 NM (22 to 33 in/lb). Be certain the screws fit easily into the threads, otherwise the total tightening torque will be reached without the necessary contact being achieved.
7. To ensure heat dissipation and proper insulation, heatsinks and insulated leads should be clean of all dirt and excess compounds.