

2002

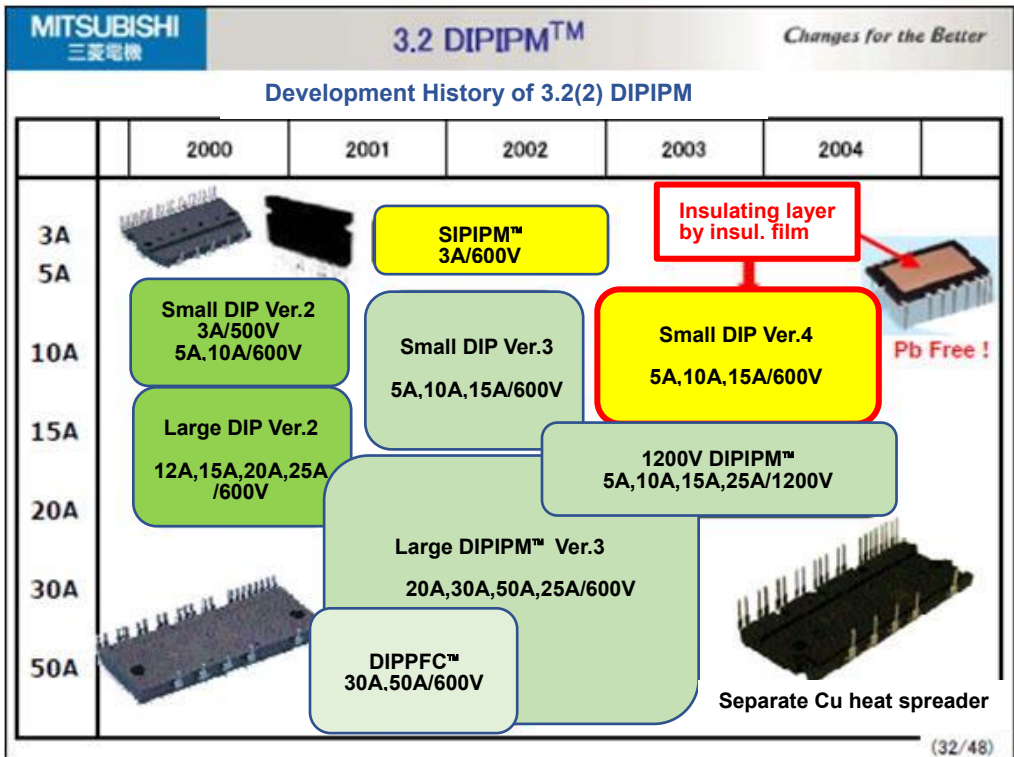
Expanded mass production of power semiconductor modules for inverters

~ Packaging ~

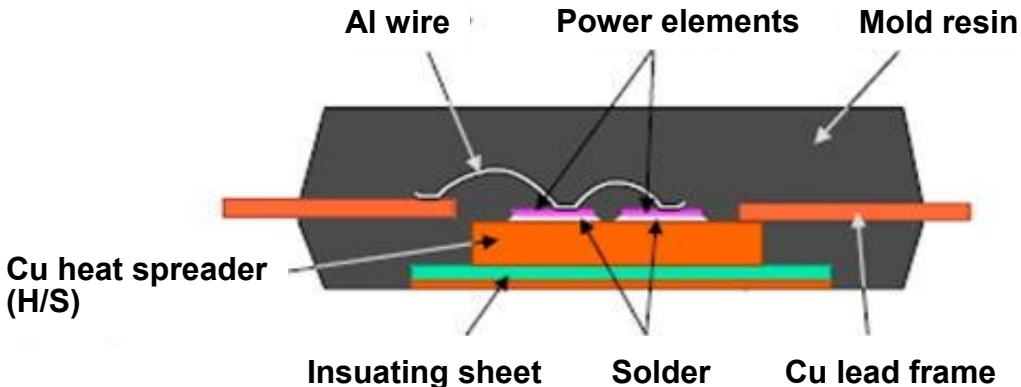
Around 2000, Mitsubishi developed a transfer-mold-type power semiconductors for the DC to AC conversion circuit to drive motors and compressors for white goods such as refrigerators, washing machines, and air conditioners and realized improvement of electric power usage and mounting work efficiency and others.

Mitsubishi transferred its main semiconductor division such as the LSI business division to Renesas Technology, a merged company with Hitachi, and it nurtured discrete semiconductor business such as power devices as its main semiconductor business. The company realized a low power consumption product line of power modules for inverter drive for white goods, and named it DIPIPM™ (Dual In-line Package Intelligent Power Module). Six pairs of IGBTs and freewheel diodes are mounted in the package, and a high voltage IC for driving the gate of the IGBT is mounted together on one lead frame.

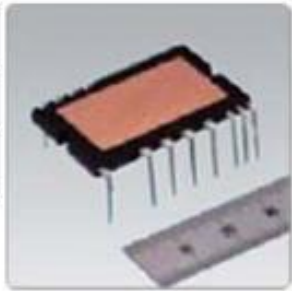
By around 2004, Mitsubishi developed a new structure of DIPIPM™ by enhancing both heat dissipation and electrical characteristics, and enriched the series of high heat radiation power semiconductor modules.



3.2 (5) New Structure DIPIP™ ... Application of Insulating Sheet



	Ins. Mat.	Filler Mat.	T ratio	Conduc. ratio
Conven.	Mold resin	Silica	1	1
New	Ins. sheet	BN	0.5	1.5~3



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Improve thermal conduction by the use of insulating sheet
⇒ package size is reduced to 1/2