

Application note of nHPD2

Packing description of the module

Notice: When reviewing the product, please confirm that this application note is the latest version.

Packing description of the module

1. Packing

- 1) Outer packing box is shown in Fig. 1.
- 2) Packing box is shown in Fig. 2.
- 3) IGBT module packing in packing box is shown in Fig. 3.
- 4) Packing box in outer packing box is shown in Fig. 4.

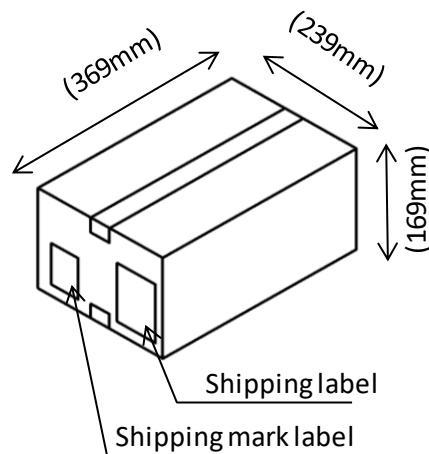


Fig. 1 Perspective view of outer packing box

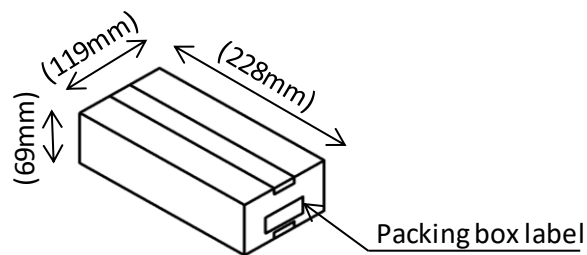


Fig. 2 Perspective view of packing box

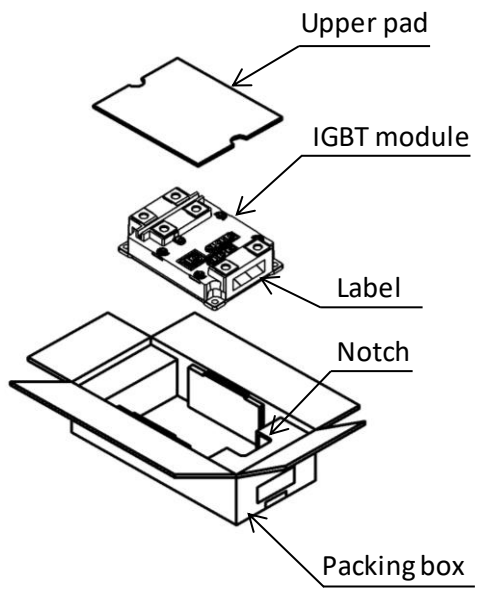


Fig. 3 Packing of nHPD2 module – Inner box

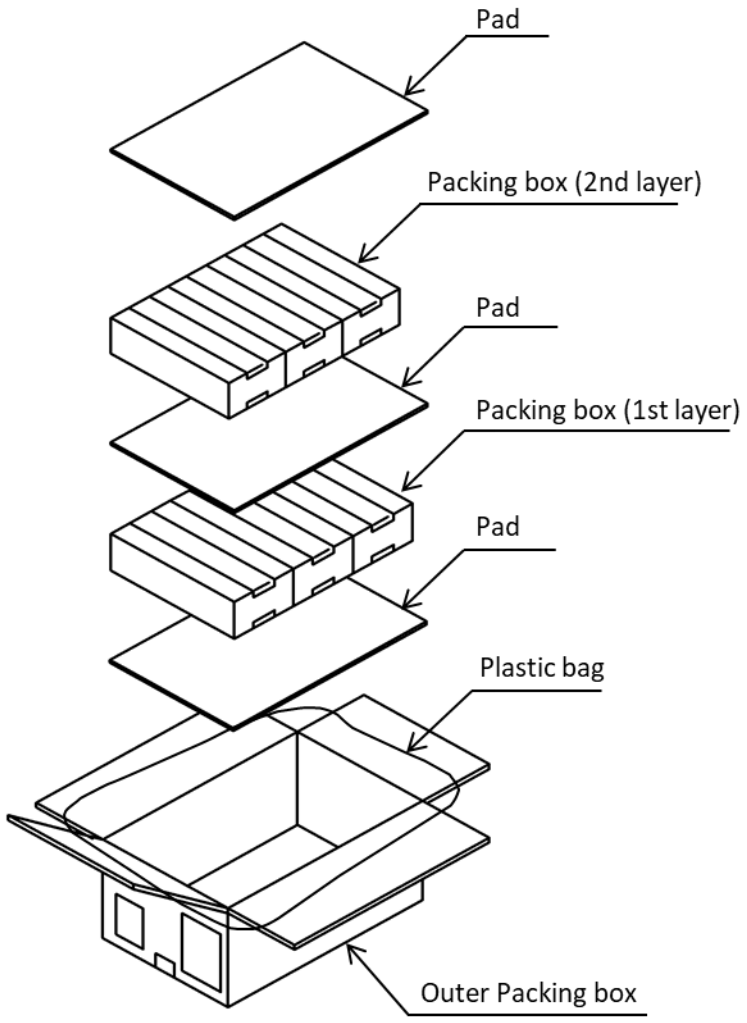


Fig. 4 Packing of outer boxes

2. Labelling

1) Packing box label

-Packing box label is shown in Fig. 5

2) Outer packing box

-Shipping mark label and shipping label are shown in Fig. 6

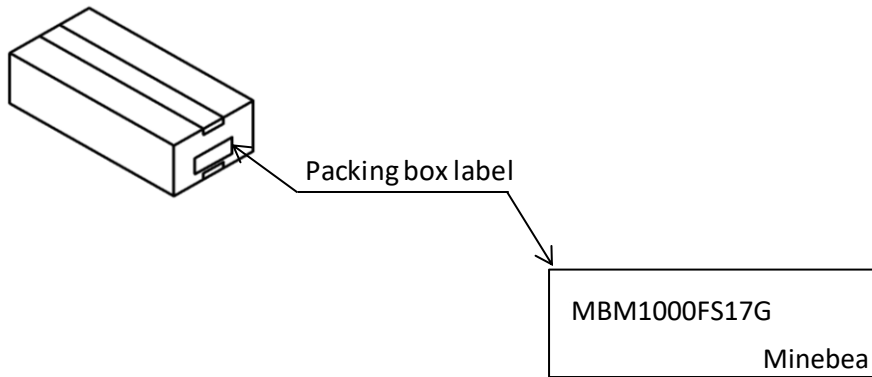
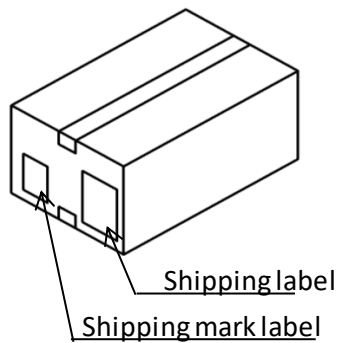


Fig. 5 Packing box label - example



(a) Outer packing box

PO#507**** CUSTOMER MBM1000FS17G C/No. 25-** MADE IN JAPAN G*****
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b) Shipping mark label

お客様名/Orderer		
送付先		
顧客形式/ Customer Part No.		契約No./Contract No.
形式/ Part No.		仕様No./Spec No.
出荷日/Shipping Date		NoPb Details
数量/ Qty	個口数/Box No./TTL (/)	
		Minebea Power Semiconductor Device Inc.

c) Shipping label

Fig. 6 Shipping mark label and shipping label - examples

Notices in packing and transportation

(1) Ambient storage conditions

- Please keep modules in the original packaging until parts are required for assembly.
- Please keep the ambient temperature between 5°C and 40°C.
- Please keep the ambient humidity RH60% or less.
- Dust: Please keep the modules in the inner box until point of assembly.
- Toxic substances: Corrosive gases, such as sulphurous anhydride gas or chloride gas, are prohibited in the storage room.
- Temperature change: Rapid changes in temperature may cause condensation on the IGBT modules. Avoid fluctuating temperature change in the storage room.
- Long time storage: In case of long time storage of the IGBT modules, desiccant air treatment is needed in the storage room. Please check for rust, discoloration, scratches or dirt on the terminals or baseplates of the IGBT modules after long time storage before assembling.
- Mechanical loads: External loads shall not be applied to modules in storage. When the modules are stacked in a storage area, avoid large heavy loads which may cause deformation of the terminals or break the plastic cases.
- Other notices: Please do not remove conductive sponge, metal or tape from the gate-emitter signal terminals until a gate driver is ready to be installed. Observe static protection protocols to avoid harmful damage to the module.

(2) Transportation conditions

- Please handle the modules with care and do not throw or drop them during transportation which may cause breakages. If any shock has been applied to a module, do not use the module.
- Please handle the packing box with the correct orientation. Avoid placing the box upside-down, or propped up against the wall, which may cause deformation of terminals or damage to the plastic case.
- Please observe any rules written on the packing box, e.g. "HANDLE WITH CARE" or "FRAGILE". Do not apply mechanical vibration or shock to the modules.
- Protect parts from rain or snow. Avoid water contact to the packing box(es).

(3) Notices to avoid electrostatic breakdown (ESD)

IGBT uses MOS gate structure which is sensitive to electrostatic voltage. Please pay attention to avoid ESD.

- Please do not remove the conductive sponges, metals, or the conductive tapes on the gate-emitter terminals until just before use of the modules.

- The handler of the module must be earthed by high resistance ($100\text{k}\Omega \sim 1\text{M}\Omega$). The handler must not touch the gate terminals.
- Please do not use cases which can easily store an electrical charge during transportation or warehouse storage.
- Static discharge of the packing before the unpacking is highly recommended.
- If the circuit between gate and emitter is open after the module is connected to the printed circuit board (PCB), the electrically charged PCB may cause the ESD to the module.