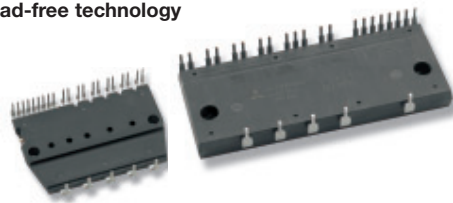


2.12 2nd Generation DIP and Mini-DIP-IPM

Features:

- Ultra Compact Transfer Mold Package
- Including Drive and Protection ICs (low and high voltage drive ICs)
- Low and High Speed Types
- All Mitsubishi DIP and Mini-DIP-IPMs have lead-free terminals
- From January 2006 onwards, all DIP and Mini-DIP-IPMs will be supplied with completely lead-free technology

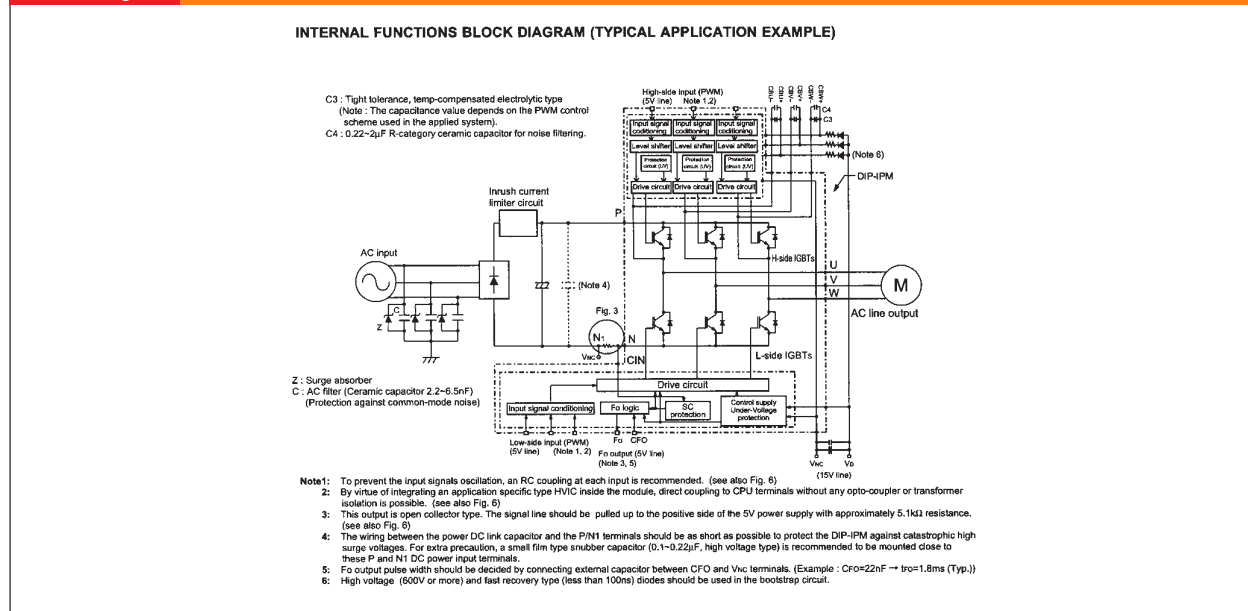


Line-up DIP & Mini-DIP-IPM

| Type | V_{CES} (V) | Isolation Voltage (V_{rms}) | Motor Rating (kW) | | | | | | |
|----------|-------------------------------|---------------------------------|-------------------|--|---------------------------------------|---------------------------------------|------------|------------|------------|
| | | | 0.1 | 0.2 | 0.4 | 0.75 | 1.5 | 2.0 | |
| DIP | Low speed f_{PWM} 5kHz | 600 | 2500 | | | | PS21244-EP | PS21245-EP | PS21246-EP |
| | High speed f_{PWM} 15kHz | | | | | | PS21254-EP | PS21255-EP | |
| Mini DIP | Low speed f_{PWM} 5kHz | 500 / 600 | | PS20341-GP PS20341-NP [#] | PS21342-GP PS21342-NP [#] | PS21343-GP PS21343-NP [#] | | | |
| | High speed f_{PWM} 15kHz | | | PS20351-GP PS20351-NP [#] PS21351-NP [#] | PS21352-GP PS21352-NP [#] | PS21353-GP PS21353-NP [#] | | | |

[#]: reduced t_{dead}

Circuit Diagram

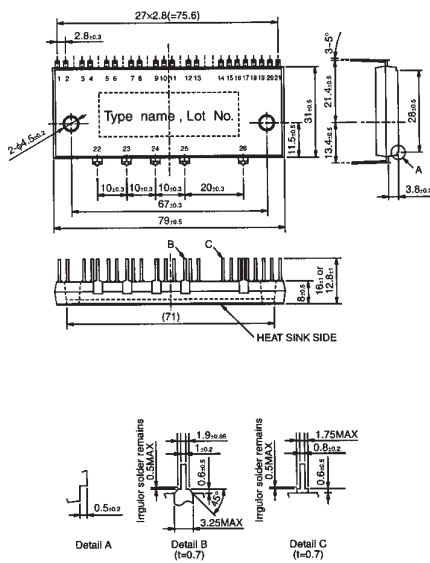


2.12 2nd Generation DIP and Mini-DIP-IPM (Dual-in-line Package Intelligent Power Modules)

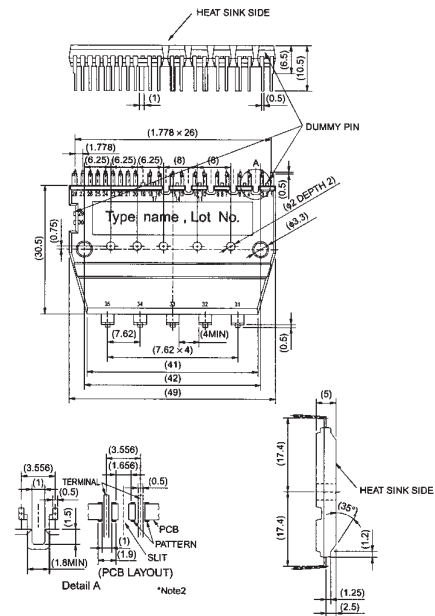
| Type Number | Electrical Characteristics | | | | | | | Thermal & Mechanical Characteristics | | | Package-No. |
|----------------------------------|----------------------------|-------------------------------|--------------------|----------------------|-----------------------|--|------|--------------------------------------|--------------------------------------|-----------------------------|-------------|
| | V _{CES} (V) | Applicable Motor Ratings (kW) | I _C (A) | f _C (kHz) | Isolation Voltage (V) | V _{CE(sat)} @ T _J = 25°C (V) | | IGBT R _{th(j-c)} (°C/W) | FW-Diode R _{th(j-c)} (°C/W) | R _{th(c-f)} (°C/W) | |
| | | | | | | Typ. | Max. | | | | |
| 600V DIP-IPMs | | | | | | | | | | | |
| P21244-EP | 600 | 0.75 | 15 | 5 | 2500 | 1.55 | - | 2.85 | 4.5 | 0.067 | D1 |
| PS21245-EP | 600 | 1.5 | 20 | 5 | 2500 | 1.55 | - | 2.20 | 4.5 | 0.067 | D1 |
| PS21246-EP | 600 | 2.0 | 25 | 5 | 2500 | 1.55 | - | 2.10 | 3.0 | 0.067 | D1 |
| PS21254-EP | 600 | 0.75 | 15 | 15 | 2500 | 1.80 | - | 2.85 | 4.5 | 0.067 | D1 |
| PS21255-EP | 600 | 1.5 | 20 | 15 | 2500 | 1.80 | - | 2.20 | 4.5 | 0.067 | D1 |
| 500V / 600V Mini-DIP-IPMs | | | | | | | | | | | |
| PS20341-GP | 500 | 0.1 | 3 | 5 | 2500 | 1.40 | 1.90 | 7.0 | 8.0 | - | D2 |
| PS20341-NP | 500 | 0.1 | 3 | 5 | 2500 | 1.40 | 1.90 | 7.0 | 8.0 | - | D2 |
| PS20351-GP | 500 | 0.1 | 3 | 15 | 2500 | 1.70 | 2.35 | 7.0 | 8.0 | - | D2 |
| PS20351-NP | 500 | 0.1 | 3 | 15 | 2500 | 1.70 | 2.35 | 7.0 | 8.0 | - | D2 |
| PS21342-GP | 600 | 0.2 | 5 | 5 | 2500 | 1.55 | 2.15 | 6.0 | 6.5 | - | D2 |
| PS21342-NP | 600 | 0.2 | 5 | 5 | 2500 | 1.55 | 2.15 | 6.0 | 6.5 | - | D2 |
| PS21343-GP | 600 | 0.4 | 10 | 5 | 2500 | 1.55 | 2.15 | 5.0 | 6.5 | - | D2 |
| PS21343-NP | 600 | 0.4 | 10 | 5 | 2500 | 1.55 | 2.15 | 5.0 | 6.5 | - | D2 |
| PS21351-NP | 600 | 0.1 | 3 | 15 | 2500 | 1.80 | 2.45 | 7.0 | 8.0 | - | D2 |
| PS21352-GP | 600 | 0.2 | 5 | 15 | 2500 | 1.80 | 2.45 | 6.0 | 6.5 | - | D2 |
| PS21352-NP | 600 | 0.2 | 5 | 15 | 2500 | 1.80 | 2.45 | 6.0 | 6.5 | - | D2 |
| PS21353-GP | 600 | 0.4 | 10 | 15 | 2500 | 1.80 | 2.45 | 5.0 | 6.5 | - | D2 |
| PS21353-NP | 600 | 0.4 | 10 | 15 | 2500 | 1.80 | 2.45 | 5.0 | 6.5 | - | D2 |

2.

Package D1



Package D2



Note1: (***) = Dummy Pin.

Note2: In order to increase the surface distance between terminals, cut a slit, etc. on the PCB surface

Dimensions in mm