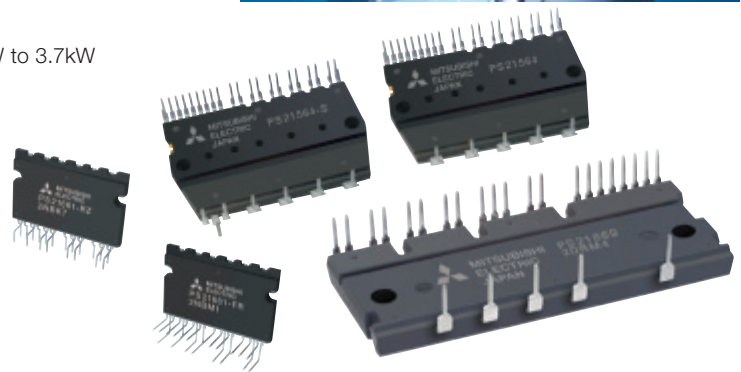


## 2.10 3<sup>rd</sup> Generation DIP and Mini-DIP-IPM (Dual-in-line Package Intelligent Power Modules)

### Features:

- Employing 5<sup>th</sup> generation planar IGBT chips with 0.6 $\mu$ m design rule or CSTBT™ technology with superior loss performance
- Ultra compact dual or single-in-line transfer mold package (compatible with 2<sup>nd</sup> generation)
- Including driver and protection circuitry (UV, SC)
- DIP-IPM with reduction of thermal resistance by 20%
- 2500V<sub>rms</sub> isolation voltage
- High-active interface logic for direct connection to a 3V or 5V MCU
- Highest reliability and optimised EMI performance
- Available from 3A to 50A / 600V for motor ratings from 0.1kW to 3.7kW
- Optional with open emitter topology for vector control
- 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 & SIP-IPM

Type	Isolation Voltage (V)	V <sub>CES</sub> (V)	Motor Rating (kW)						
			0.1	0.2	0.4	0.75	1.5	2.2	3.7
Super-DIP	2500	600					PS21065	PS21067	PS21069
DIP						PS21864-P	PS21865-P	PS21867-P	PS21869-P
Mini-DIP			PS21562-P PS21562-SP*	PS21563-P PS21563-SP*	PS21564-P PS21564-SP*				
SIP			PS21661-FR PS21661-RZ						

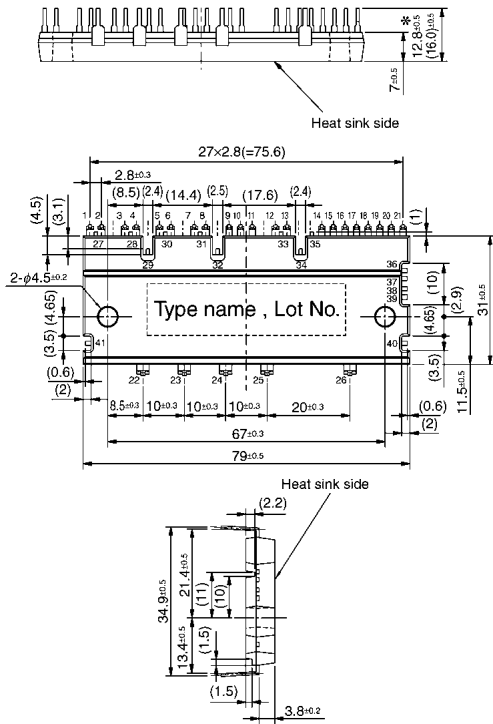
\* Open Emitter Topology

Type Number	Electrical Characteristics											Thermal & Mechanical Characteristics		Package-No.	
	V <sub>CES</sub> (V)	Applicable Motor Ratings (kW)	I <sub>C</sub> (A)	f <sub>C</sub> (kHz)	Isolation Voltage (V)	V <sub>CE(sat)</sub> @ T <sub>J</sub> =25°C (V)		Typical Switching Times					IGBT R <sub>th(j-f)</sub> (°C/W)		Diode R <sub>th(j-f)</sub> (°C/W)
						Typ.	Max.	t <sub>on</sub> (μs)	t <sub>rr</sub> (μs)	t <sub>c(on)</sub> (μs)	t <sub>off</sub> (μs)	t <sub>c(off)</sub> (μs)			
<b>Mini-DIP-IPM 600 Volt</b>															
PS21562-P	600	0.2	5	20	2500	1.6	2.1	1.20	0.30	0.40	1.30	0.50	6.0	6.5	D4
PS21563-P	600	0.4	10	20	2500	1.6	2.1	1.20	0.30	0.40	1.40	0.50	5.0	6.5	D4
PS21564-P	600	0.75	15	20	2500	1.45	1.95	1.20	0.30	0.40	1.50	0.50	4.5	6.5	D4
<b>DIP-IPM 600 Volt</b>															
PS21864-P	600	0.75	15	20	2500	1.7	2.2	1.50	0.30	0.50	1.40	0.50	2.30	3.2	D3
PS21865-P	600	1.5	20	20	2500	1.6	2.1	1.30	0.30	0.40	1.60	0.50	1.90	3.0	D3
PS21867-P	600	2.2	30	20	2500	1.6	2.1	1.30	0.30	0.40	1.70	0.50	1.65	3.0	D3
PS21869-P	600	3.7	50	20	2500	1.5	2.0	1.30	0.30	0.40	2.00	0.65	1.42	2.0	D3
<b>Mini-DIP-IPM 600 Volt With Open Emitter Topology</b>															
PS21562-SP	600	0.2	5	20	2500	1.6	2.1	1.20	0.30	0.40	1.30	0.50	6.0	6.5	D5
PS21563-SP	600	0.4	10	20	2500	1.6	2.1	1.20	0.30	0.40	1.40	0.50	5.0	6.5	D5
PS21564-SP	600	0.75	15	20	2500	1.45	1.95	1.20	0.30	0.40	1.50	0.50	4.5	6.5	D5
<b>Super-DIP-IPM 600 Volt With Open Emitter Topology/SIP-IPM 600 Volt</b>															
PS21065	600	1.5	20	20	2500	1.6	2.1	1.30	0.30	0.40	1.60	0.50	1.90	2.85	D6*
PS21067	600	2.2	30	20	2500	1.6	2.1	1.30	0.30	0.40	1.70	0.50	1.65	2.55	D6*
PS21069	600	3.7	50	20	2500	1.5	2.0	1.30	0.30	0.40	2.00	0.65	1.42	2.30	D6*
<b>SIP-IPM 600 Volt</b>															
PS21661-RZ/-FR	600	0.1	3	15	2500	1.6	2.15	0.85	0.20	0.35	1.00	0.55	9.0	9.0	SIP1

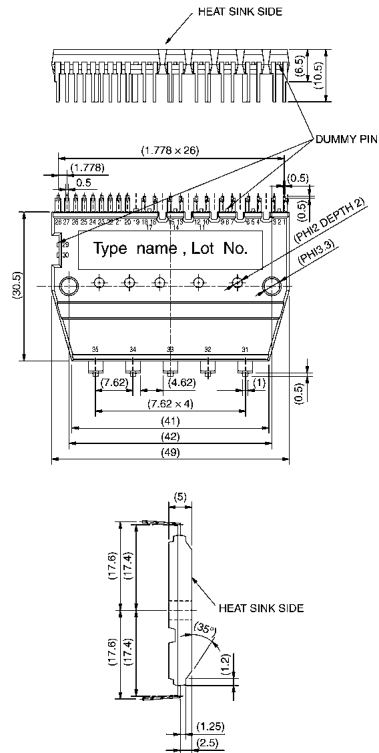
\* Package drawing D6 see under 2.8. 1200V DIP-IPM, p. 50

## 2.10 3<sup>rd</sup> Generation DIP and Mini-DIP-IPM

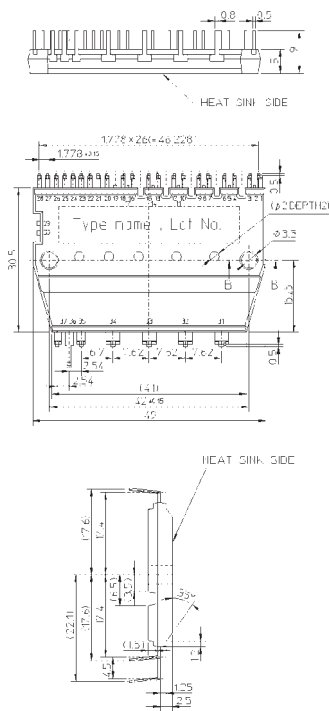
Package D3



Package D4



Package D5



Package SIP1

