

# 5<sup>th</sup> Generation IPMs for Photovoltaic Application



## Features

- 5<sup>th</sup> Generation trench chip (CSTBT™) for lower saturation voltage  $V_{CE(sat)} = 1.55V(\text{typ.})$  at rated current and  $T_j = 125^\circ C$
- Integrated high speed control ICs for switching frequencies up to 30kHz
- Low noise (controlled di/dt)
- On-chip temperature sensing and individual OT protection
- Compact L-Series IPM package with screw and pin terminals
- 0, 1 or 2 boost converters built in for multi-string operation
- 50A / 600V modules good for approximately 7.5kW (16kHz) fed to mains
- Rated currents of 50A and 75A with a rated voltage of 600V



L1-Series IPM for PV-Application available as well (mounting surface reduced by about 30%)

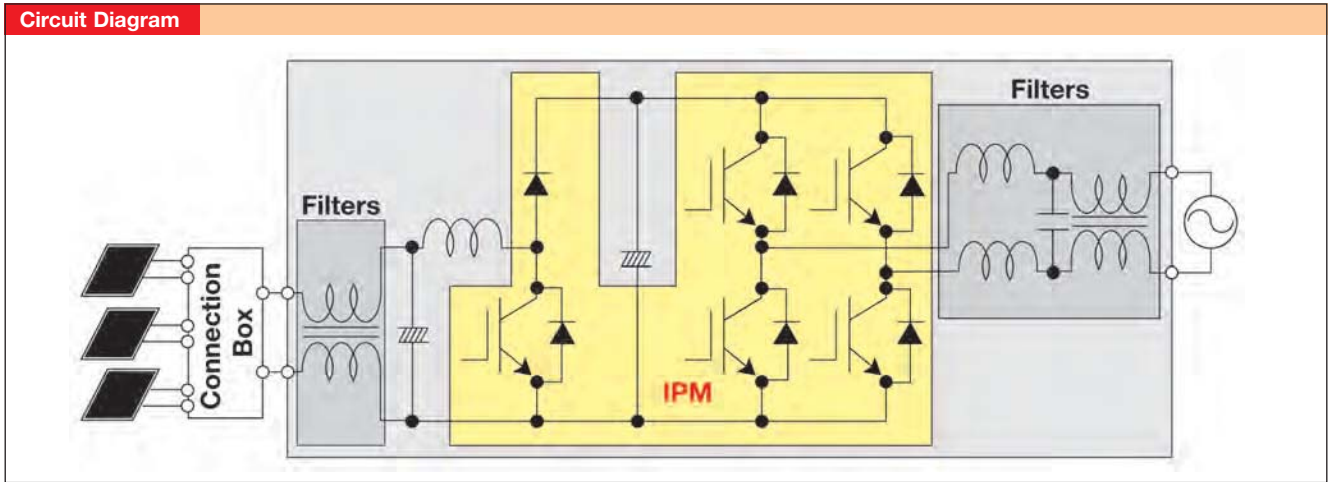


## Line-up (600V)

I <sub>c</sub> (A)	Circuit	Terminal	Package	Type name
50	1 Inverter	Screw	L1	PM50B4LA060
		Pin	L2	PM50B4LB060
	1 Inverter & 1 Chopper	Screw	L1	PM50B5LA060
		Pin	L2	PM50B5LB060
	1 Inverter & 2 Chopper	Screw	L1	PM50B6LA060
		Pin	L2	PM50B6LB060
75	1 Inverter	Screw	L1	PM75B4LA060
		Pin	L2	PM75B4LB060
	1 Inverter & 1 Chopper	Screw	L1	PM75B5LA060
		Pin	L2	PM75B5LB060
	1 Inverter & 2 Chopper	Screw	L1	PM75B6LA060
		Pin	L2	PM75B6LB060

## 2.06 5<sup>th</sup> Generation IPMs for Photovoltaic Application

**Circuit Diagram**

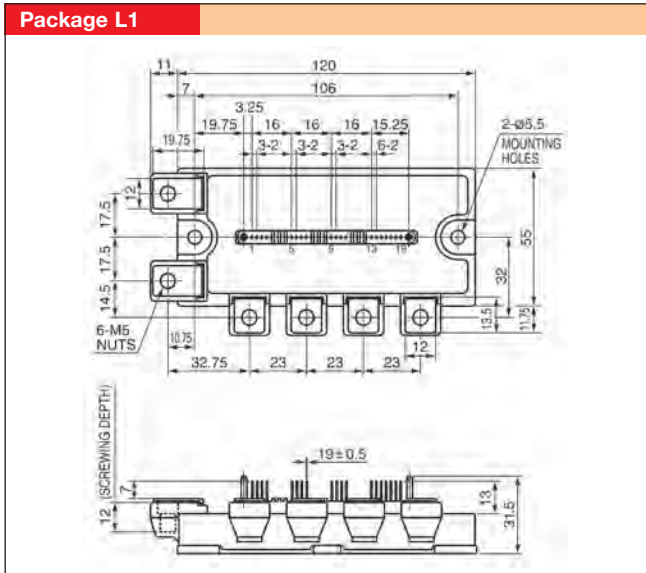


Type Number	Maximum Ratings		Electrical Characteristics						Thermal Characteristics			Typical Protection Functions			Package-No.
	V <sub>CE(sat)</sub> (V)	I <sub>C</sub> (A)	V <sub>CE(sat)</sub> @ T <sub>J</sub> = 125°C (V)	Typical Switching Times					IGBT R <sub>th(j-c)</sub> (°C/W)	Diode R <sub>th(j-c)</sub> (°C/W)	R <sub>th(c-f)</sub> (°C/W)	SC* (A)	OT (°C)	UV (V)	
				t <sub>on</sub> (μs)	t <sub>c(on)</sub> (μs)	t <sub>off</sub> (μs)	t <sub>c(off)</sub> (μs)	t <sub>rr</sub> (μs)							
<b>600 Volt IPM for Solar Power</b>															
PM50B4LA060	600	50	1.55	0.7	0.2	0.9	0.2	0.1	0.95	1.61	0.038	100	145	12	L1
PM50B4LB060	600	50	1.55	0.7	0.2	0.9	0.2	0.1	0.95	1.61	0.038	100	145	12	L2
PM50B5LA060	600	50	1.55	0.7	0.2	0.9	0.2	0.1	0.95	1.61	0.038	100	145	12	L1
PM50B5LB060	600	50	1.55	0.7	0.2	0.9	0.2	0.1	0.95	1.61	0.038	100	145	12	L2
PM50B6LA060	600	50	1.55	0.7	0.2	0.9	0.2	0.1	0.95	1.61	0.038	100	145	12	L1
PM50B6LB060	600	50	1.55	0.7	0.2	0.9	0.2	0.1	0.95	1.61	0.038	100	145	12	L2
PM75B4LA060	600	75	1.55	0.7	0.2	0.9	0.2	0.1	0.32	0.53	0.038	150	145	12	L1
PM75B4LB060	600	75	1.55	0.7	0.2	0.9	0.2	0.1	0.32	0.53	0.038	150	145	12	L2
PM75B5LA060	600	75	1.55	0.7	0.2	0.9	0.2	0.1	0.32	0.53	0.038	150	145	12	L1
PM75B5LB060	600	75	1.55	0.7	0.2	0.9	0.2	0.1	0.32	0.53	0.038	150	145	12	L2
PM75B6LA060	600	75	1.55	0.7	0.2	0.9	0.2	0.1	0.32	0.53	0.038	150	145	12	L1
PM75B6LB060	600	75	1.55	0.7	0.2	0.9	0.2	0.1	0.32	0.53	0.038	150	145	12	L2

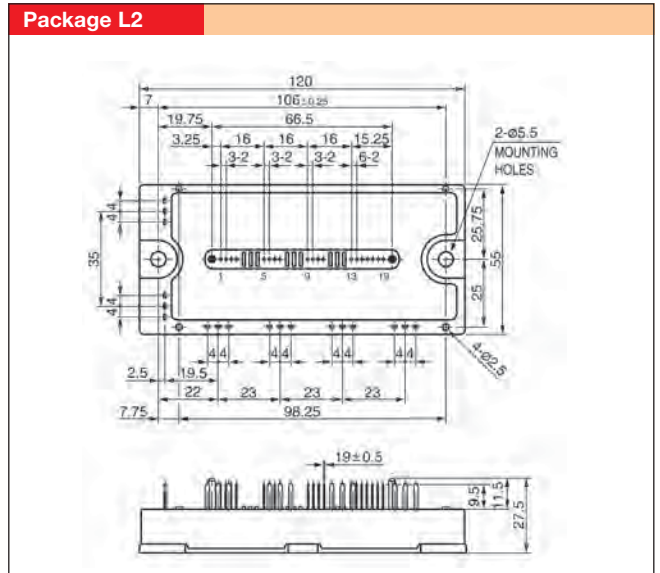
\*minimum trip values

**OC:** over-current prot. / **SC:** short-circuit prot. / **OT:** over-temperature prot. / **UV:** under-voltage lock prot.

**Package L1**



**Package L2**



Dimensions in mm