Fuji Electric
Innovating Energy Technology

Power Semiconductors
Selection Guide

05|2025

www.fujielectric.com
www.fujielectric-europe.com

About Us

Fuji Electric Co., Ltd. was established in 1923 in Japan as a capital and technology alliance between Furukawa Electric Co., Ltd. and Siemens AG. The company name was derived from these two companies, with „Fu“ and „Si“ and the highest mountain in Japan mount Fuji.

The Fuji Electric Europe GmbH was founded 1984 in Germany and is a 100% subsidiary of Fuji Electric Co., Ltd. based in Japan. For more than 30 years, Fuji Electric has successfully supplied the European market with power semiconductors for power conversion systems.

With a strong team of sales, application and development engineers, we always support our customers from all over Europe in commercial and technical matters. Furthermore, our international distribution network ensures a special service quality and proximity to customers.

Fuji Electric offers innovative energy technologies to make a sustainable contribution to social and industrial infrastructure worldwide. Population growth and rapid industrial advances are making energy management and environmental protection increasingly important.

Therefore, Fuji Electric strives continuously the development and improvement of existing technologies. Our innovative products in energy and environmental technology achieve high added value, outstanding eco-friendliness and energy with maximum efficient use.

Our Services

Application Portfolio

For a long while, the main applications of our power semiconductors were the electric drive technology (frequency converters, servo drives) and the uninterruptible power supply (UPS). The foundation stone was placed based on these applications for outstanding quality, high reliability and implementation of the latest technologies.
The application portfolio is growing steadily and it includes new applications today such as: renewable energy (wind energy, photovoltaic), hybrid/electric mobility, energy supply and distribution (smart grid), traction, etc. Technology development always requires new technical and efficient solutions with long service life as well as highest quality.

Our state-of-the-art production sites in front-end, back-end and warehouse locations enable us to supply the world‘s growing number of customers with power semiconductors.

Our 7th IGBT generation (X series) is currently replacing older generations in the market. The new products can easily replace existing products due to their electrical and mechanical compatibility while they are continuing to reduce losses.

Logistic Services

Our logistic center in Frankfurt offers our customers high availability and enables short delivery times as well as extensive logistics services.

Technical Support

Our competent application engineering team offers application support from A to Z, as well as special technical solutions. Furthermore, our development engineers support professionally and reliably with on-site design-in solutions.

Service for Thermal Interface Material (TIM)

Our automated printing process guarantees consistent printing and improved thermal conductivity through accurate printing equipment, optimized module-specific printing patterns and software monitoring.

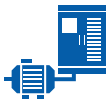
Fuji Electric provides Power Semiconductors well suited for various applications

LV-INV

Inverters (LV-I NV)

Semiconductor products best suited for general-purpose inverters that carry out variable-speed operation of motors in products such as belt conveyors, fans and pumps.

MV-INV



Medium – Voltage Inverters (MV-INV)

Semiconductor products suitable for medium-voltage inverters that drive 3-phase AC 3 kV/ 6 kV / 6.6 kV high-voltage motors used in iron and steel plants, textile plants and paper mills.

TRAIN

Railroads (TRAIN)

Semiconductor products suited for the power electronics of railroad cars such as the main motor drive and auxiliary power supply equipment of rolling stock.

SERVO

NC / Servos (SERVO)

Semiconductor products best suited to NC and servos that carry out speed control and positioning of machine tools, as well as robots that have multi-spindle control features used in assembly, welding and conveyance.

ELEVATOR

Elevator / Escalator

Semiconductor products suited for the inverters to drive elevators or escalators. Parts can be used for integrated solutions or machine room installations.

WIND

Wind Power Generation (WIND)

Semiconductor products suitable for AC/DC converters that convert the AC power output from wind turbine generators to DC power, as well as for inverters that convert DC power to AC power of commercial frequencies.

WELDING

Welding Machines (WELDING)

Semiconductor products suitable for switching circuits that generate resistance heat in welding machines to melt and integrate by adding heat or pressure to two or more metallic members.

SOLAR

Solar (SOLAR)

Semiconductor products best suited for power conditioners that convert solar panel generated DC power into AC power to enable the residential consumption, as well as to facilitate the recovery of the power to the power systems of power companies.

PC SERVER

PC / Servers (PC+SERVER)

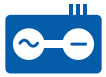
Semiconductor products suitable for the power supplies of increasingly high-performance desktop PCs and servers, as well as of increasingly compact and lightweight notebook PCs.

UPS

UPS (UPS)

Semiconductor products ideal for the power conversion circuits of UPS (uninterruptible power supply) that prevent system shutdown during power outages and instantaneous power failures.

PSU



Switching Power Supplies (PSU)

Semiconductor products best suited for general-purpose switching power supplies used in a wide variety of applications such as equipment for general consumers and OA and communication devices.

WHITE GOODS

White Goods

Semiconductor products which suits best to the needs of white goods, like low power (650 V rating), compact size and integrated drive and protection functions.

More information on products for each application can be found on our website:
https://www.fujielectric.com/products/semiconductor/

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Fuji Electric Power Semiconductors contributing energy management in various fields

Fuji Electric provides Power Semiconductors enabling high-efficiency energy usage in various fields such as industrial machinery, automobile, railroad, social infrastructure, renewable energy, consumer electronics and information equipment in order to achieve a low carbon society.

RENEWABLE ENERGY

INDUSTRY

PUBLIC TRANSPORTATION

Index

* Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.

Thermal Interface Material (TIM)

Fuji Electric‘s printing process of pre-applied TIM is automated and carried out by a computer controlled printing line under clean environment.

Precise printing equipment and optimized module specific printing patterns guarantee a uniform print and maximum thermal conductivity.

3D-imaging tests ensure the compliance of our specified TIM thickness.

The whole process is controlled by our traceability system and qualified staff to ensure our high-quality standards.

Features

+ Optimized pattern for Fuji modules
+ Increase lifetime of IGBT
+ Advanced IGBT power density

New TIM

+ Capable for T_C up to 150 °C
+ Higher thermal conductivity
+ High reliability

Process - Benefits

+ Outsourcing of a dirty process
+ Stable quality level
+ Increased system reliability

Thermal - Benefits

+ Higher thermal conductivity
+ Uniform thermal resistance
+ Higher reliability and lifetime

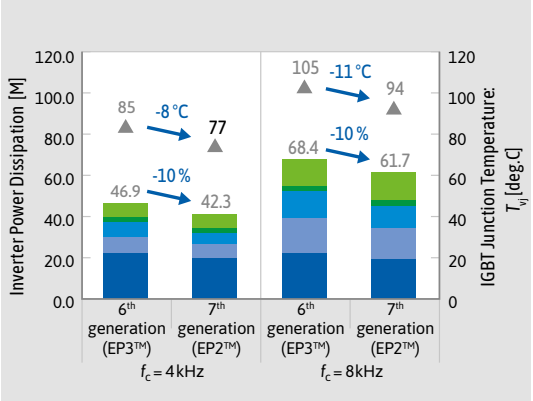
The range of modules with preapplied TIM is being continually expanded.
For latest availability status please contact us:
info.semi@fujielectric-europe.com

Features of IGBT Module X Series

1. Low Power Dissipation

The module has been optimized by reducing the thickness and miniaturizing the structure of the IGBT chip and diode chip that make up the module. This reduces power losses during inverter operation compared to the previous 6th generation V series.

Reduced inverter power dissipation by 10 % and chip temperature by 10 °C compared with the 6th generation V series EP3™ package (75A, at f_c = 8 kHz).



■ P_{rr} : Reverse recovery loss
■ P_f : FWD conduction loss
■ P_{on} : Turn-on loss
■ P_{off} : Turn-off loss
■ P_{sat} : IGBT conduction loss
▲ T_{vj} : Junction temperature

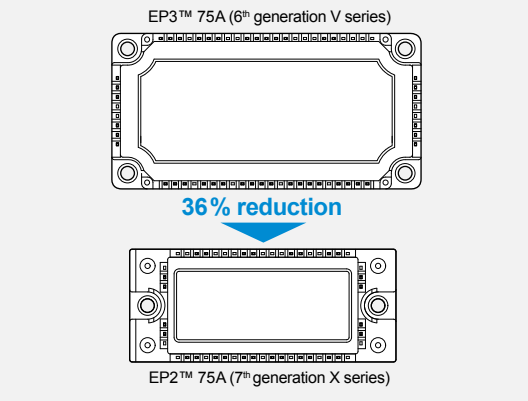
V_{DC} : 600 V, I_O : 35 Arms, f_O : 50 Hz,
Power factor = +0.9, modulation factor = 1.0,
Reverse recovery dv/dt = 10 kV/μs

2. Miniaturization

The application of the newly developed insulating board has improved the heat dissipation of the module.

A smaller footprint of about 36 % has been achieved by reducing power loss and suppressing heat generation compared with the previous product.

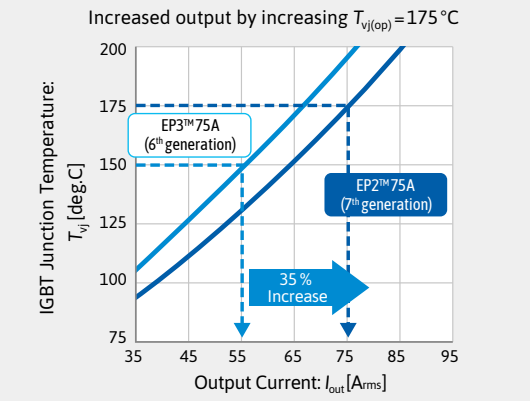
Application Example



3. High temperature operation

Achieves continuous operation at 175 °C through chip optimization and improved package reliability and heat resistance.

- Up to 35 % more output than the previous generation
- ΔT_{vj} power cycle capability improvement (twice as high as before)



Note: PrimePACK™, EconoPIM™ and EconoPACK™ are registered trademarks of Infineon Technologies AG, Germany

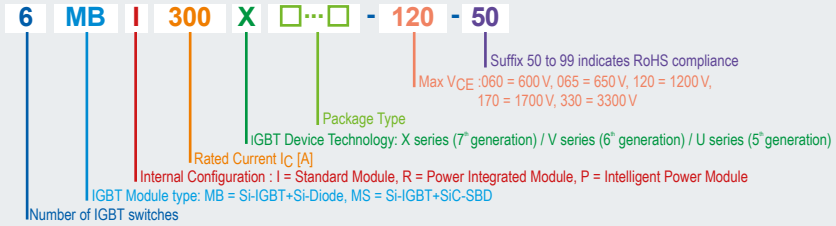
Product Portfolio

Number of Switches	Products Category	Internal Configuration						Max V_{CE} (V_{RRM})						Rated Current						Page
		IGBT Module			Discrete IGBT	Rectifier Diode	Discrete SiC-SBD	600 V	650 V	1200 V	1700 V	2300 V	3300 V	≤50 A	>50 A ≤150 A	>150 A ≤300 A	>300 A ≤600 A	>600 A ≤1200 A	>1200 A	
		Standard Module	Power Integrated Module	Intelligent Power Module																
7	Small PIM		•						•	•				•						15
	EconoPIM™		•						•	•				•	•					16/17
6	6-Pack EconoPACK™	•						•		•	•			•	•	•	•			18
2	Standard 2-Pack	•						•	•	•	•				•	•	•	•		19/20
1,2	PrimePACK™	•								•	•						•	•	•	21/22
	High Power next Core	•									•	•						•	•	22
2,6	SiC Module	•								•	•	•	•	•	•	•	•	•	•	23
4,12	T/I-type NPC 3-Level	Reverse-Blocking IGBTs are integrated.						•		•	•			•	•	•	•	•		24/25
6,7	Small IPM / IPM			•				•	•	•				•	•	•	•			25-29
1	Discrete IGBT				•			•	•	•				•	•					30
	SiC-SBD						•		•	•				•						31

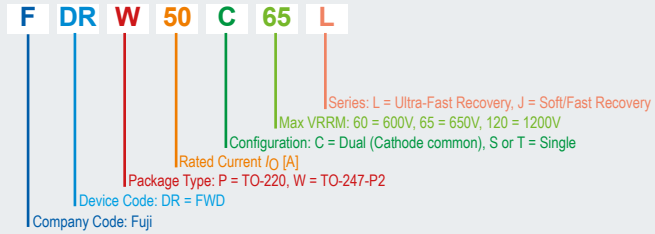
Note: PrimePACK™, EconoPIM™ and EconoPACK™ are registered trademarks of Infineon Technologies AG, Germany

Type Name Explanation

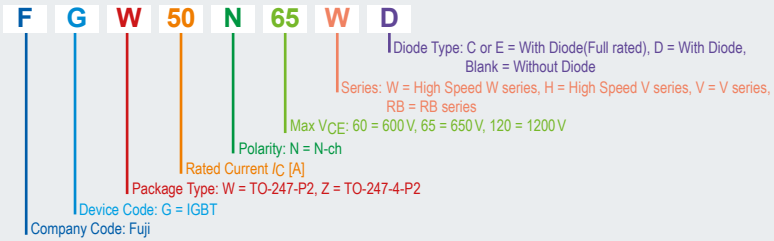
IGBT Module Production Number



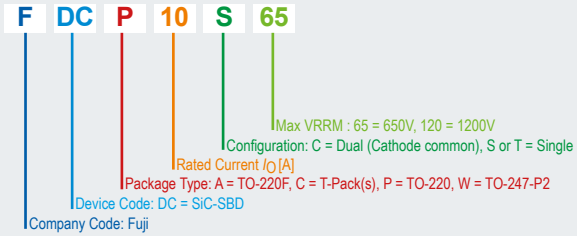
Rectifier Diode Production Number



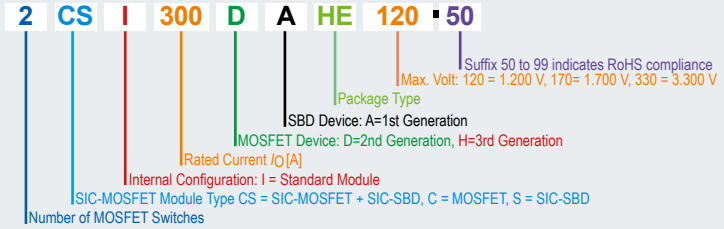
Discrete IGBT Production Number



SiC Schottky-Barrier Diode Production Number



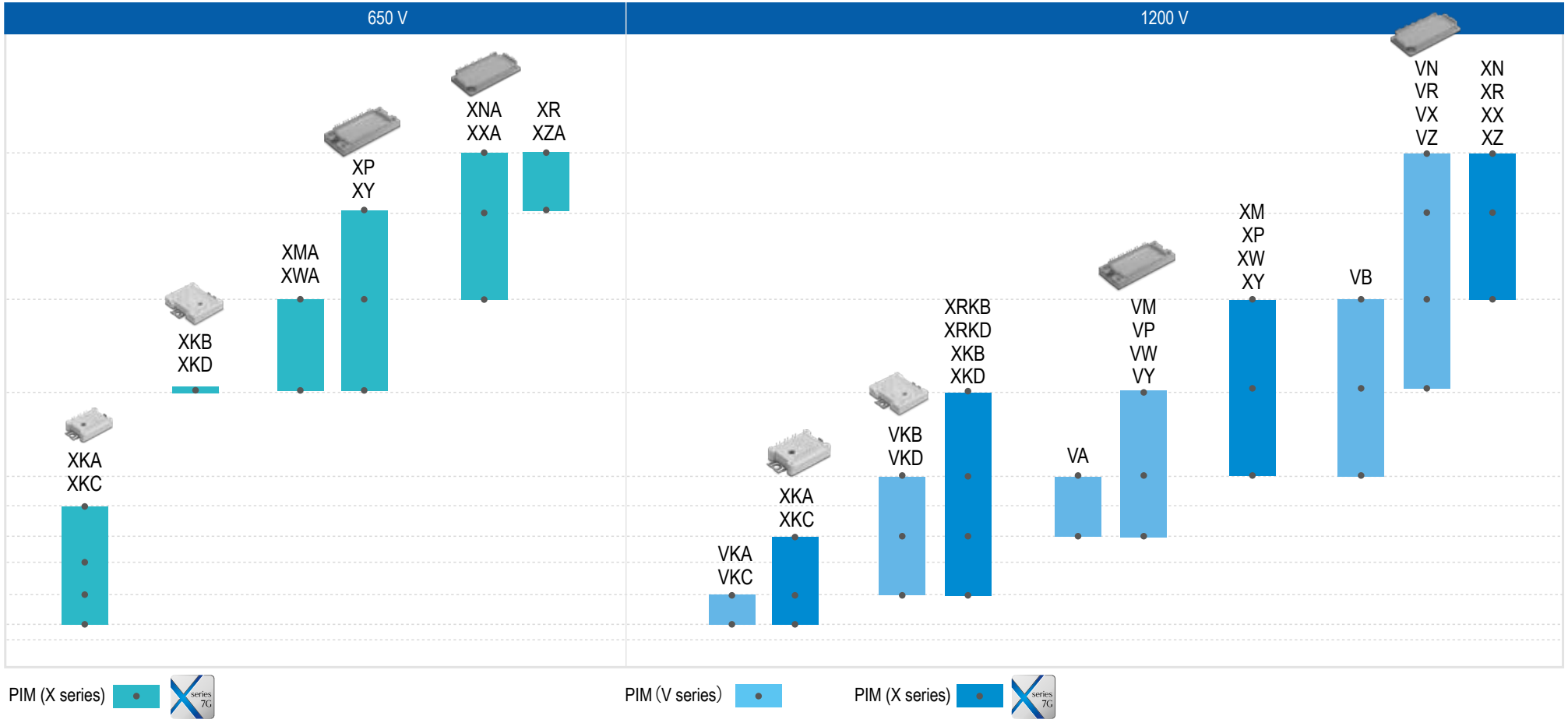
All-SiC Module Production Number



PIM (Power Integrated Modules) Product Map

7MBR	V series		X series		Size	Product Category	Page
	Solder pins	Press fit pins	Solder pins	Press fit pins			
Package Type	VKC	VKA	XKC	XKA	33.8 × 62.8 mm		15
	VKD	VKB	XKD, XRKD	XKB, XRKB	56.7 × 62.8 mm		15
	VA, VM, VP	VW, VY	XM , XP	XW , XY	45 × 107.5 mm	EconoPIM™	16/17
	VB, VN, VR	VX, VZ	XN , XR	XX , XZ	62 × 122 mm		16/17

Note: EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.



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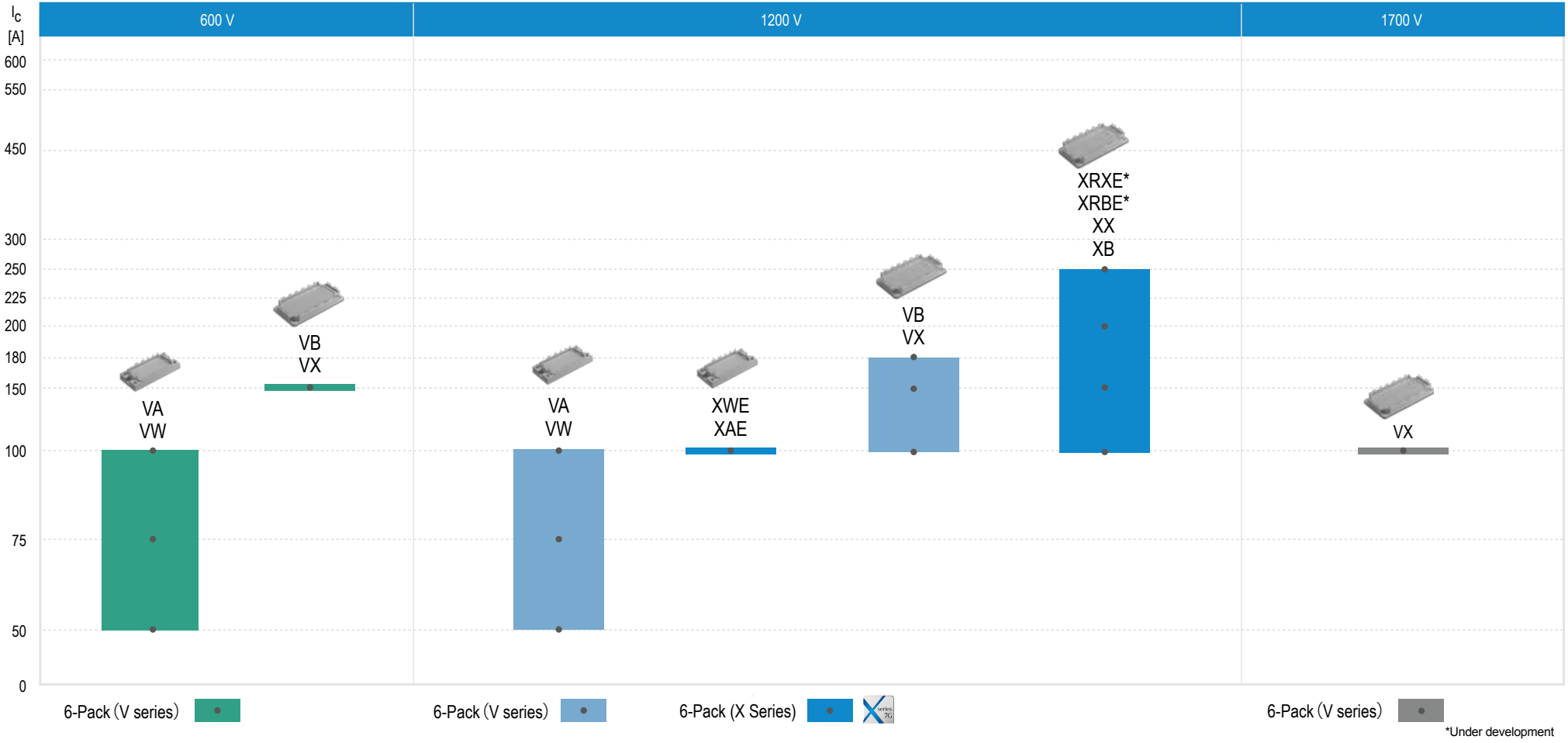
6-Pack Product Map

6MBI	V series		X series		Size	Product Category	Page
	Solder pins	Press fit pins	Solder pins	Press fit pins			
Package Type	VA	VW	XAE	XWE	45 × 107.5 mm	EconoPACK ™	18
	VB	VX	XB, XRBE*	XX, XRXE*	62 × 122 mm		18

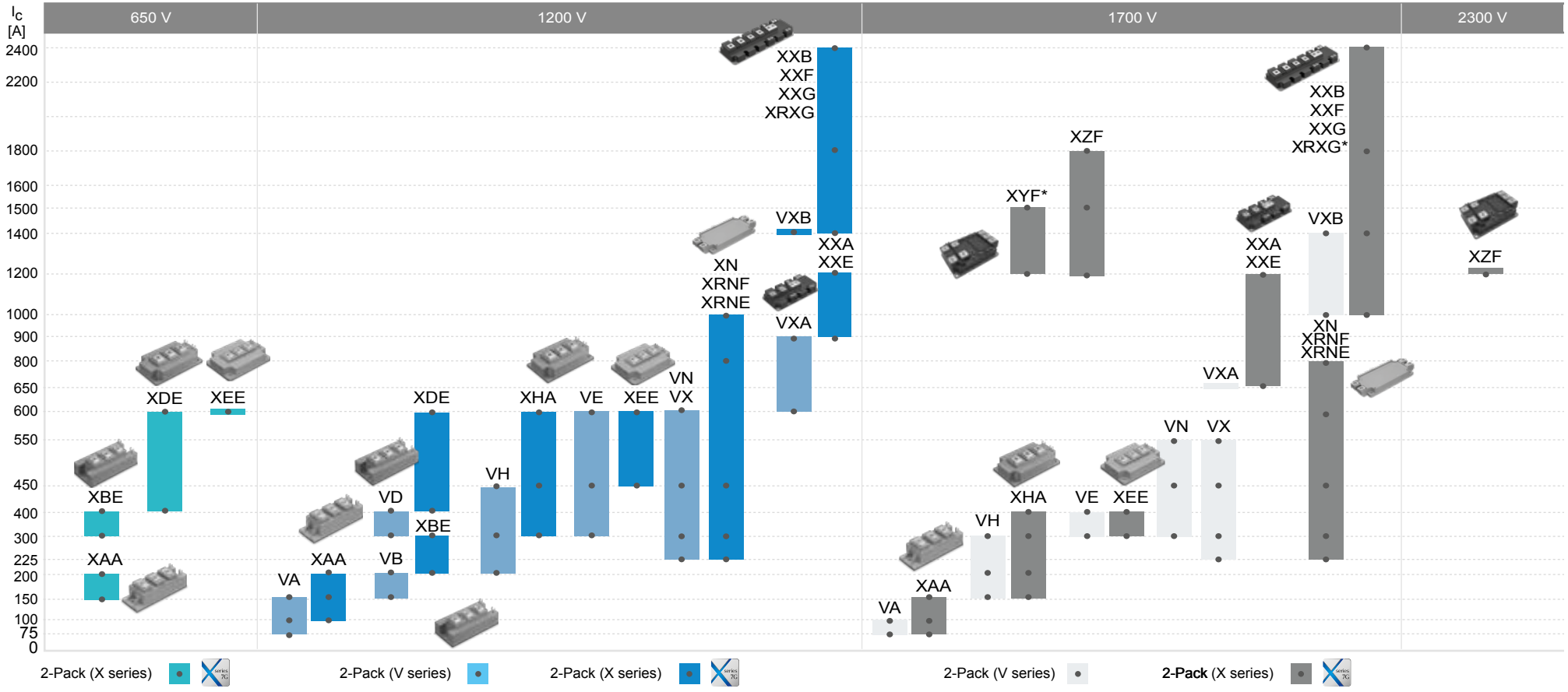
Note: EconoPACK™ is registered trademark of Infineon Technologies AG, Germany.



*Under development

2-Pack Product Map

2MBI	V series	X series	Size	Product Category	Page
Package Type	VA	XAA	34 × 94 mm	Standard Pack	19
	VB	XBE	45 × 92 mm		19
	VD	XDE	62 × 108 mm		19
	VE	XEE	80 × 110 mm		19
	VH	XHA	62 × 108 mm		19
	VN, VX	XN, XRNE, XRNF	62 × 150 mm	Dual XT	20
		XYF*, XZF	99.5 × 144 mm	HPnC	22
	VXA	XXA, XXE	89 × 172 mm	PrimePACK™	21/22
	VXB	XXB, XXF, XXG, XRXG	89 × 250 mm		21/22



*Under development

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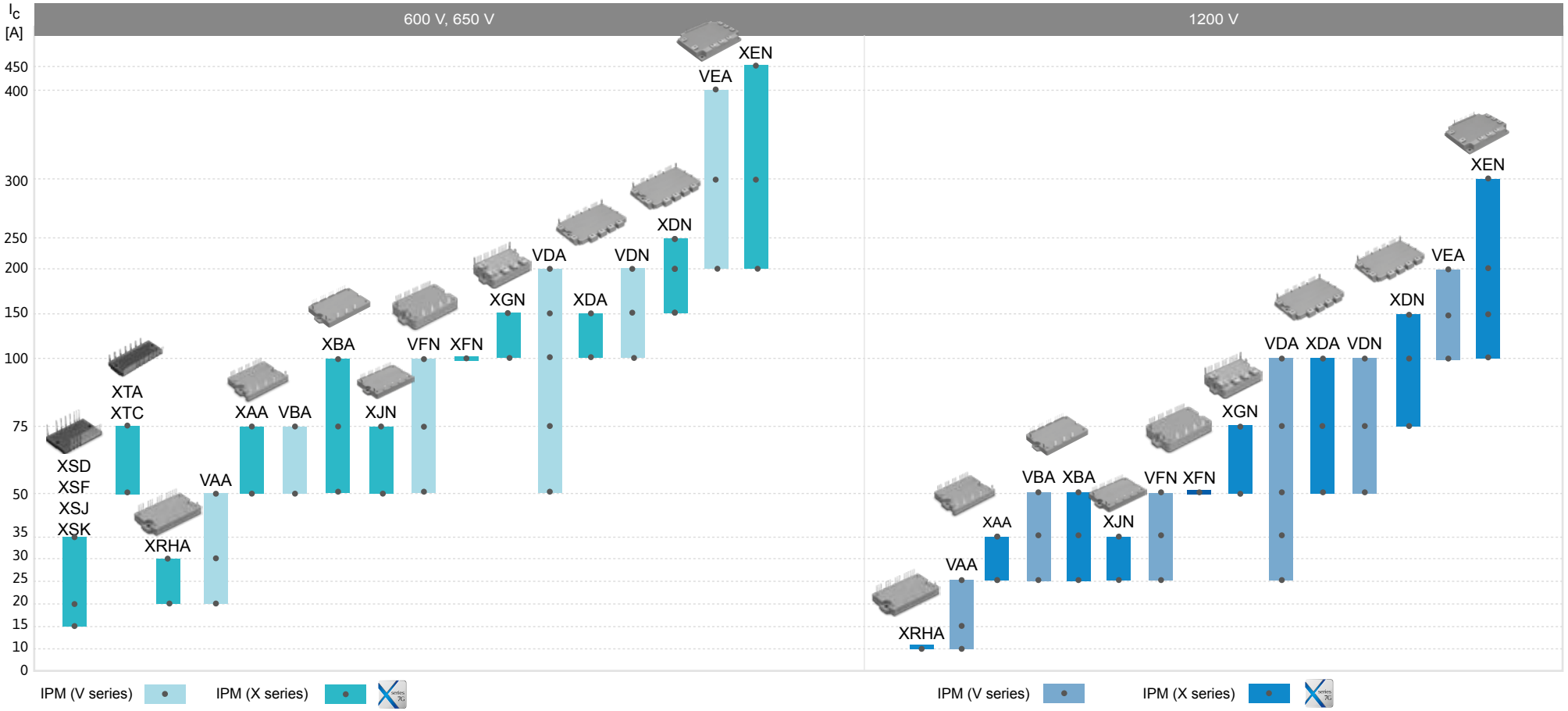
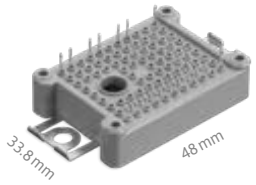
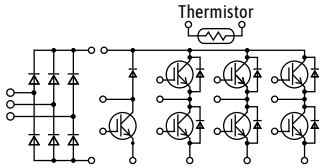
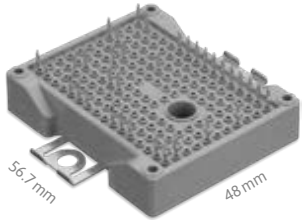
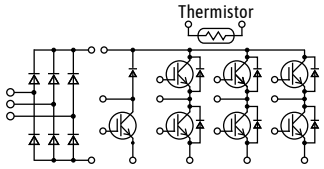
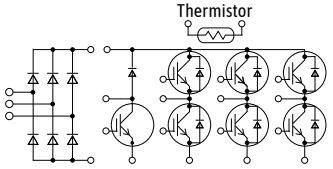
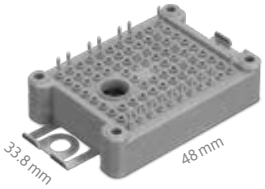
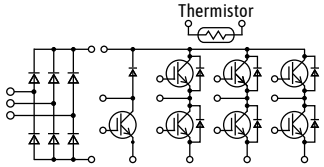
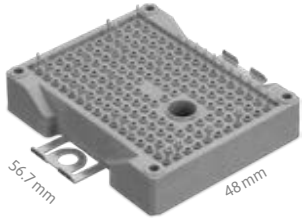
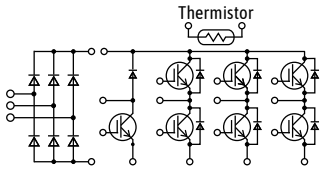
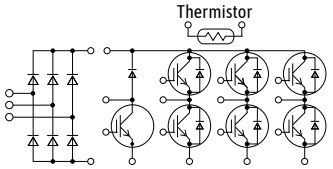
IPM (Intelligent Power Modules) Product Map

6/7MBP	V series	X series	V series		X series		Size	Page
			7 in 1	6 in 1	7 in 1	6 in 1		
Package Type		XSD, XSF, XSJ, XSK				•	26 × 43 mm	25
		XTA, XTC				•	79 × 31 mm	25
		XRHA				•	36 × 70 mm	26
	VAA	XAA		•		•	49.5 × 70 mm	26
	VBA	XBA		•		•	50.2 × 87 mm	26
		XJN			•		50.2 × 87 mm	26
	VFN	XFN	•	•	•	•	55 × 90 mm	27
		XGN				•	55 × 90 mm	27
	VDA, VDN	XDA, XDN	•	•	•	•	84 × 128.5 mm	28
	VEA	XEN	•	•	•	•	110 × 142 mm	29



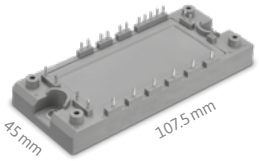
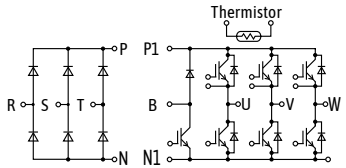
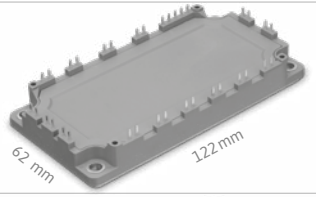
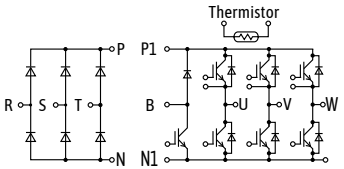
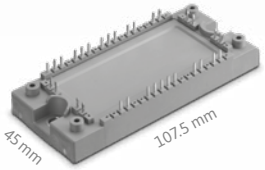
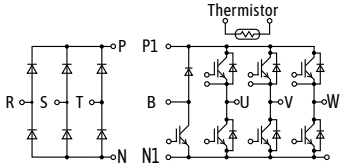
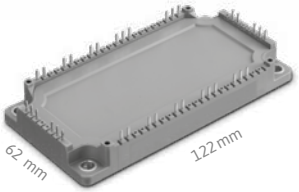
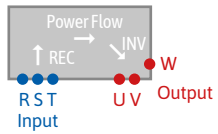
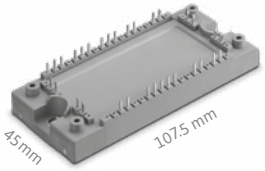
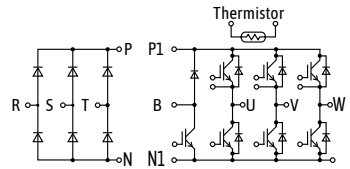
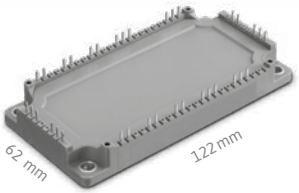
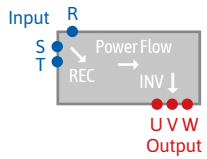
Small PIM (Power Integrated Modules)

				650 V	1200 V	
			I_C	X series	V series	X series
With NTC, press fit pins	 V: M726, X: M730		10 A	7MBR10XKA065-50	7MBR10VKA120-50	7MBR10XKA120-50
			15 A	7MBR15XKA065-50	7MBR15VKA120-50	7MBR15XKA120-50
			20 A	7MBR20XKA065-50		
			25 A			7MBR25XKA120-50
			30 A	7MBR30XKA065-50		
	 V: M727, X: M731	 XKB, VKB	15 A		7MBR15VKB120-50	7MBR15XKB120-50
			25 A		7MBR25VKB120-50	7MBR25XKB120-50
			35 A		7MBR35VKB120-50	7MBR35XKB120-50
			50 A	7MBR50XKB065-50		7MBR50XRKB120-50*
		 XRKB				
With NTC, solder pins	 V: M728, X: M732		10 A	7MBR10XKC065-50	7MBR10VKC120-50	7MBR10XKC120-50
			15 A	7MBR15XKC065-50	7MBR15VKC120-50	7MBR15XKC120-50
			20 A	7MBR20XKC065-50		
			25 A			7MBR25XKC120-50
			30 A	7MBR30XKC065-50		
	 V: M729, X: M733	 XKD, VKD	15 A		7MBR15VKD120-50	7MBR15XKD120-50
			25 A		7MBR25VKD120-50	7MBR25XKD120-50
			35 A		7MBR35VKD120-50	7MBR35XKD120-50
			50 A	7MBR50XKD065-50		7MBR50XRKD120-50*
		 XRKD				

*RC-IGBT

PIM (Power Integrated Modules) EconoPIM™

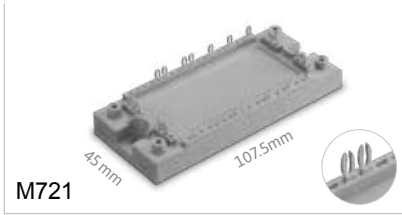
With NTC, solder pins. PIM

		I_C	650 V X series	1200 V V series	1200 V X series
M711	 	25 A		7MBR25VA120-50	
		35 A		7MBR35VA120-50	
M712	 	35 A		7MBR35VB120-50	
		50 A		7MBR50VB120-50	
		75 A		7MBR75VB120-50	
M719	 	25 A		7MBR25VM120-50	
		35 A		7MBR35VM120-50	7MBR35XMA120-50
		50 A	7MBR50XMA065-50	7MBR50VM120-50	7MBR50XMA120-50
		75 A	7MBR75XMA065-50		7MBR75XME120-50
M720	 	50 A		7MBR50VN120-50	
		75 A	7MBR75XNA065-50	7MBR75VN120-50	7MBR75XNA120-50
		100 A	7MBR100XNA065-50	7MBR100VN120-50	7MBR100XNA120-50
		150 A	7MBR150XNA065-50	7MBR150VN120-50	7MBR150XNE120-50
M719	 	25 A		7MBR25VP120-50	
		35 A		7MBR35VP120-50	7MBR35XPA120-50
		50 A	7MBR50XPA065-50	7MBR50VP120-50	7MBR50XPA120-50
					7MBR50XPE120-50
		75 A	7MBR75XPA065-50		7MBR75XPE120-50
		100 A	7MBR100XPE065-50		
M720	 	50 A		7MBR50VR120-50	
		75 A		7MBR75VR120-50	7MBR75XRA120-50
					7MBR75XRE120-50
		100 A	7MBR100XRA065-50	7MBR100VR120-50	7MBR100XRA120-50
					7MBR100XRE120-50
		150 A	7MBR150XRA065-50	7MBR150VR120-50	7MBR150XRE120-50
			7MBR150XRE065-50		

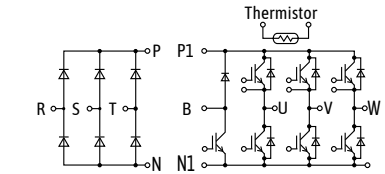
Note 1: Pin assignment of output terminals changes within the range of colored position depending on output current.
Note 2: EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.

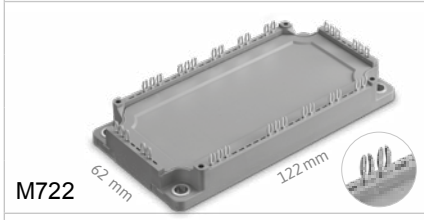
PIM (Power Integrated Modules) EconoPIM™

With NTC, press fit pins

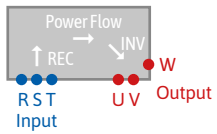


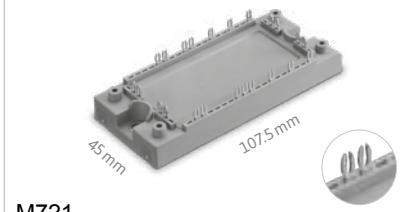
M721



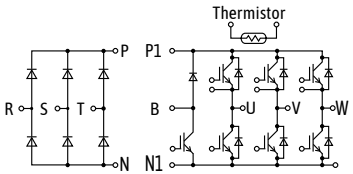


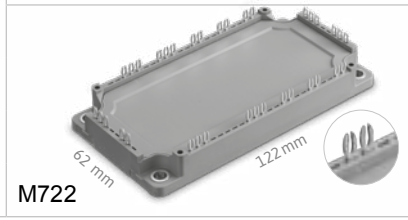
M722



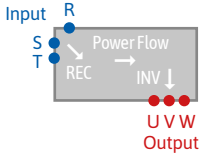


M721





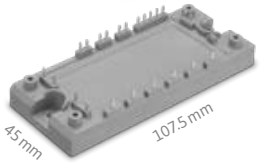
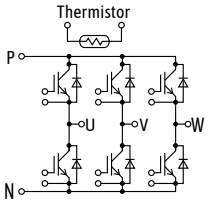
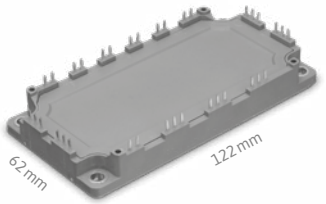
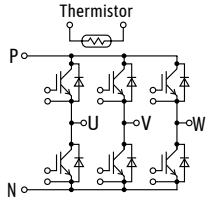
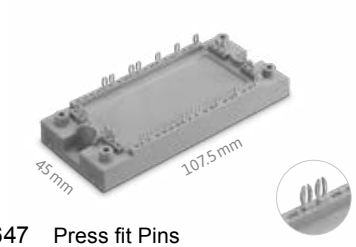
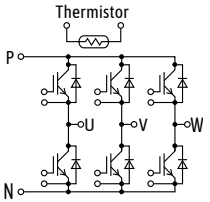
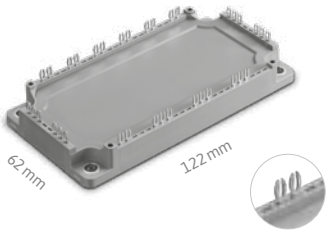
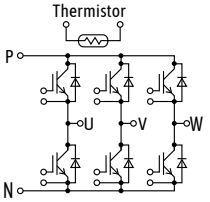
M722



I_C	650 V X series	1200 V V series	1200 V X series
25 A		7MBR25VW120-50	
35 A		7MBR35VW120-50	7MBR35XWA120-50
50 A	7MBR50XWA065-50	7MBR50VW120-50	7MBR50XWA120-50
75 A	7MBR75XWA065-50		7MBR75XWE120-50
50 A		7MBR50VX120-50	
75 A	7MBR75XXA065-50	7MBR75VX120-50	7MBR75XXA120-50
100 A	7MBR100XXA065-50	7MBR100VX120-50	7MBR100XXA120-50
150 A	7MBR150XXA065-50	7MBR150VX120-50	7MBR150XXE120-50
25 A		7MBR25VY120-50	
35 A		7MBR35VY120-50	7MBR35XYA120-50
50 A	7MBR50XYA065-50	7MBR50VY120-50	7MBR50XYA120-50
75 A	7MBR75XYA065-50		7MBR75XYE120-50
100 A	7MBR100XYE065-50		
50 A		7MBR50VZ120-50	
75 A		77MBR75VZ120-50	7MBR75XZA120-50
100 A	7MBR100XZA065-50	7MBR100VZ120-50	7MBR100XZA120-50
150 A	7MBR150XZA065-50	7MBR150VZ120-50	7MBR150XZE120-50

Note 1: Pin assignment of output terminals changes within the range of colored position depending on output current.
Note2: EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.

6-Pack EconoPACK™

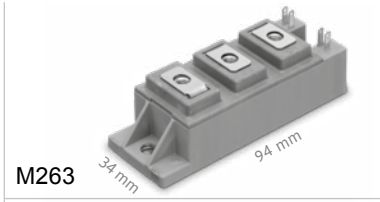
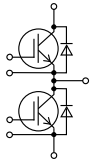
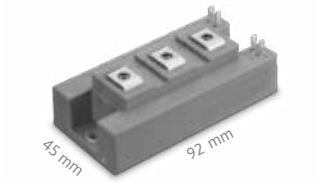
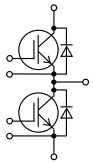
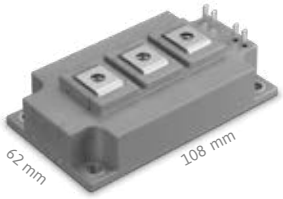
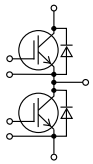
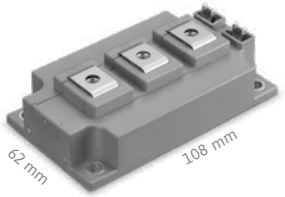
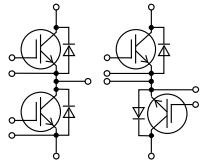
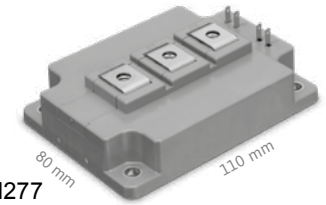
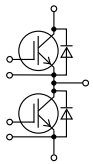
			I_C	600 V	1200 V		1700 V
				V series	V series	X series	V series
With NTC, solder pins	 V: M636, X: M669 Solder Pins		50 A	6MBI50VA-060-50	6MBI50VA-120-50		
			75 A	6MBI75VA-060-50	6MBI75VA-120-50		
			100 A	6MBI100VA-060-50	6MBI100VA-120-50	6MBI100XAE120-50	
	 V: M633, X: M668 Solder Pins		100 A		6MBI100VB-120-50	6MBI100XBA120-50	
			150 A	6MBI150VB-060-50	6MBI150VB-120-50	6MBI150XBA120-50	
			180 A		6MBI180VB-120-50		
					6MBI180VB-120-55 *1		
			200 A			6MBI200XBA120-50	
						6MBI200XBE120-50	
			250 A			6MBI250XRBE120-50*2	
With NTC, press fit pins	 M647 Press fit Pins		50 A	6MBI50VW-060-50	6MBI50VW-120-50		
			75 A	6MBI75VW-060-50	6MBI75VW-120-50		
			100 A	6MBI100VW-060-50	6MBI100VW-120-50	6MBI100XWE120-50	
	 M648 Press fit Pins		100 A		6MBI100VX-120-50	6MBI100XXA120-50	6MBI100VX-170-50
			150 A	6MBI150VX-060-50	6MBI150VX-120-50	6MBI150XXA120-50	
			180 A		6MBI180VX-120-50		
					6MBI180VX-120-55		
			200 A			6MBI200XXA120-50	
						6MBI200XXE120-50	
			250 A			6MBI250XRXE120-50*2	

Note: EconoPACK™ is registered trademark of Infineon Technologies AG, Germany.

*1) 6MBI180VB-120-55, 6MBI180VX-120-55; 6MBI200XBE120-50; 6MBI200XXE120-50 ; Premium type (Low Thermal Impedance Version)

*2) RC-IGBT

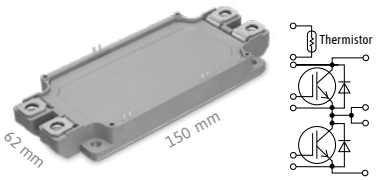
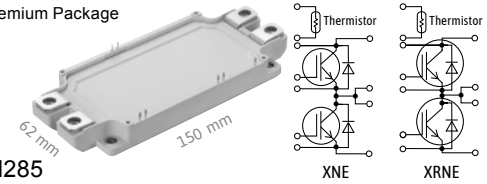
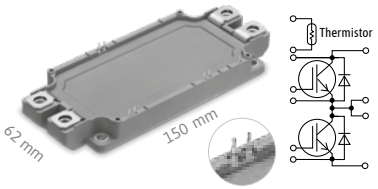
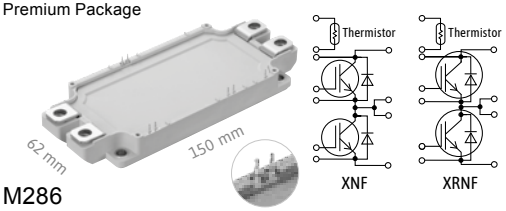
Standard 2-Pack

		I_C	650 V X series	1200 V V series	1200 V X series	1700 V V series	1700 V X series
2-Pack	  M263	75 A		2MBI75VA-120-50		2MBI75VA-170-50	2MBI75XAA170-50
		100 A		2MBI100VA-120-50	2MBI100XAA120-50	2MBI100VA-170-50	2MBI100XAA170-50
		150 A	2MBI150XAA065-50	2MBI150VA-120-50	2MBI150XAA120-50		2MBI150XAA170-50
		200 A	2MBI200XAA065-50		2MBI200XAA120-50		
	  M274	150 A		2MBI150VB-120-50			
		200 A		2MBI200VB-120-50	2MBI200XBE120-50		
		300 A	2MBI300XBE065-50		2MBI300XBE120-50		
		400 A	2MBI400XBE065-50				
	  M275	300 A		2MBI300VD-120-50			
		400 A	2MBI400XDE065-50	2MBI400VD-120-50	2MBI400XDE120-50		
		600 A	2MBI600XDE065-50		2MBI600XDE120-50		
	  M276	150 A				2MBI150VH-170-50	2MBI150XHA170-50
		200 A		2MBI200VH-120-50		2MBI200VH-170-50	2MBI200XHA170-50
		300 A		2MBI300VH-120-50	2MBI300XHA120-50	2MBI300VH-170-50	2MBI300XHA170-50
		400 A					2MBI400XHA170-50
							2MBI400XHA170-81*
		450 A		2MBI450VH-120-50	2MBI450XHA120-50		
				2MBI450VH-120F-50*	2MBI450XHA120-81*		
		600 A			2MBI600XHA120-50		
					2MBI600XHA120-81*		
	  M277	300 A		2MBI300VE-120-50		2MBI300VE-170-50	2MBI300XEE170-50
		400 A				2MBI400VE-170-50	2MBI400XEE170-50
		450 A		2MBI450VE-120-50	2MBI450XEE120-50		
		600 A	2MBI600XEE065-50	2MBI600VE-120-50	2MBI600XEE120-50		

* Under development

Note: „-81“: Pre-applied Thermal-Interface-Material for -50

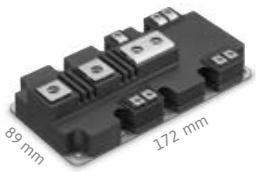
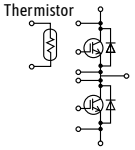
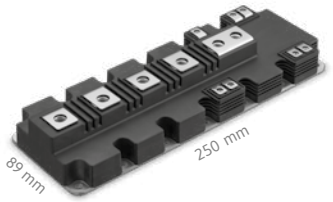
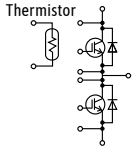
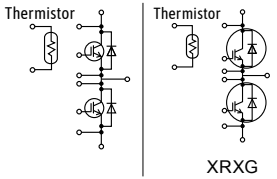
Standard 2-Pack

		I_C	1200 V			1700 V		
			V series	V series with SIN-substrate*1	X series	V series	V series with SIN-substrate*1	X series
With NTC, solder pins	 M254	225 A	2MBI225VN-120-50	2MBI225VN-120S-50	2MBI225XNA120-50			2MBI225XNA170-50
					2MBI225XNA120-81*			
		300 A	2MBI300VN-120-50	2MBI300VN-120S-50	2MBI300XNA120-50	2MBI300VN-170-50		2MBI300XNA170-50
		450 A	2MBI450VN-120-50	2MBI450VN-120S-50	2MBI450XNA120-50	2MBI450VN-170-50		2MBI450XNA170-50
		550 A					2MBI550VN-170-50*1	
		600 A		2MBI600VN-120-50	2MBI600XNG120-50*1			2MBI600XNG170-50*1
	Premium Package  M285	600 A			2MBI600XNE120-50			2MBI600XNE170-50
		800 A			2MBI800XNE120-50			2MBI800XRNE170-50*2
		1000 A			2MBI1000XRNE120-50*2			
With NTC, press fit pins	 M282	225 A	2MBI225VX-120-50		2MBI225XNB120-50	2MBI225VX-170-50		2MBI225XNB170-50
		300 A	2MBI300VX-120-50		2MBI300XNB120-50	2MBI300VX-170-50		2MBI300XNB170-50
					2MBI300XNB120-81*			
		450 A	2MBI450VX-120-50		2MBI450XNB120-50	2MBI450VX-170-50		2MBI450XNB170-50
					2MBI450XNB120-81*			
		550 A					2MBI550VX-170-50	
		600 A		2MBI600VX-120-50	2MBI600XNH120-50*1			2MBI600XNH170-50*1
					2MBI600XNH120-81*1			
	Premium Package  M286	600 A			2MBI600XNF120-50			2MBI600XNF170-50
		800 A			2MBI800XNF120-50			2MBI800XRNF170-50*2
		1000 A			2MBI1000XRNF120-50*2			
					2MBI1000XRNF120-81*2			

Premium Package:
- High isolation capability
- High thermal performance

*1) Low thermal impedance version
*2) RC-IGBT
Note: „-81“: Pre-applied Thermal-Interface-Material for -50

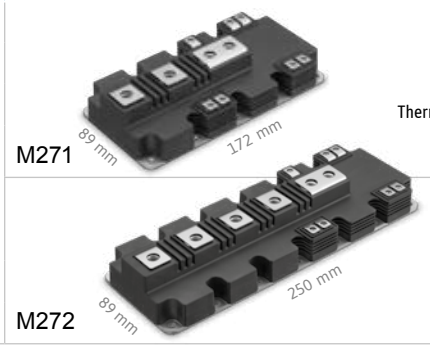
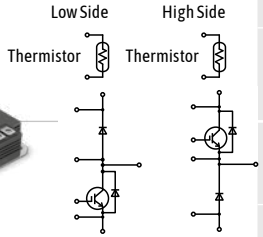
PrimePACK™

		I_C	1200 V			1700 V		
			V series		X series	V series		X series
			Low switching loss	Soft turn off		Low switching loss	Soft turn off	
2-Pack	  M271	600 A	2MBI600VXA-120E-50					
			2MBI600VXA-120E-54					
		650 A				2MBI650VXA-170E-50		2MBI650XXA170-50
						2MBI650VXA-170E-54		
						2MBI650VXA-170EA-50		
						2MBI650VXA-170EA-54		
		900 A	2MBI900VXA-120E-50	2MBI900VXA-120P-50	2MBI900XXA120P-50			
			2MBI900VXA-120E-54	2MBI900VXA-120P-54	2MBI900XXA120P-81*1			
		1200 A			2MBI1200XXE120P-50			2MBI1200XXE170-50
	  M272	1000 A				2MBI1000VXB-170E-50		2MBI1000XXB170-50
						2MBI1000VXB-170E-54		
						2MBI1000VXB-170EA-50		
						2MBI1000VXB-170EA-54		
		1400 A	2MBI1400VXB-120E-50	2MBI1400VXB-120P-50	2MBI1400XXB120P-50	2MBI1400VXB-170E-50	2MBI1400VXB-170P-50	2MBI1400XXB170-50
			2MBI1400VXB-120E-54	2MBI1400VXB-120P-54	2MBI1400XXB120P-81*1	2MBI1400VXB-170E-54	2MBI1400VXB-170P-54	
		1800 A			2MBI1800XXF120P-50			2MBI1800XXF170-50
	  M291	1800 A			2MBI1800XXG120P-50			2MBI1800XXG170-50
					2MBI1800XXG120P-81*1			2MBI1800XXG170-81
		2400 A			2MBI2400XRXG120-50*2			2MBI2400XRXG170-50*1,2
					2MBI2400XRXG120-81*2			

*1) Under development
*2) RC-IGBT

Note 1: The products with 'EA' on this page have large FWD.
Note 2: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.
Note 3: The products with suffix '-54' on this page are labeled to specify the rank of V_{sat} and V_F.
Note 4: „-81“: Pre-applied Thermal-Interface-Material for -50
Note 5: The range of modules with pre-applied TIM(Thermal-Interface-Material) is being continually expanded.

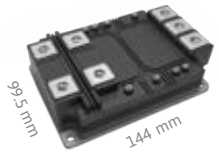
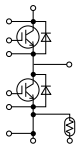
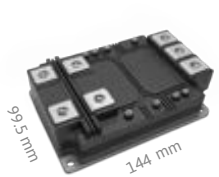
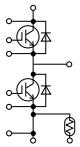
PrimePACK™

			1200 V		1700 V	
			V series		V series	
		I_C	Low side configuration	High side configuration	Low side configuration	High side configuration
Chopper	 	650 A			1MBI650VXA-170EL-50	1MBI650VXA-170EH-50
					1MBI650VXA-170EL-54*2	1MBI650VXA-170EH-54*2
		900 A	1MBI900VXA-120PD-50 *1	1MBI900VXA-120PC-50 *1		
			1MBI900VXA-120PD-54*2	1MBI900VXA-120PC-54 *2		
		1000 A			1MBI1000VXB-170EL-50	1MBI1000VXB-170EH-50
					1MBI1000VXB-170EL-54*2	1MBI1000VXB-170EH-54*2
		1400 A			1MBI1400VXB-170PL-50	1MBI1400VXB-170PH-50
			1MBI1400VXB-120PL-54*2	1MBI1400VXB-120PH-54*2	1MBI1400VXB-170PL-54*2	1MBI1400VXB-170PH-54*2

*1) Antiparallel diode current rating is 120 A. Application circuit is Boost/Buck chopper only.
*2) The products with suffix '-54' on this page are labeled to specify the rank of V_{sat} and V_F.

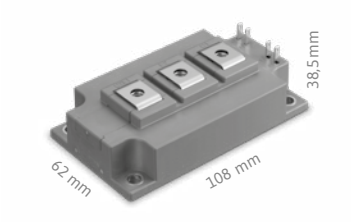
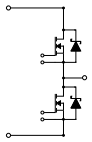
Note 1: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.
Note 2: The range of modules with pre-applied TIM(Thermal-Interface-Material) is being continually expanded.

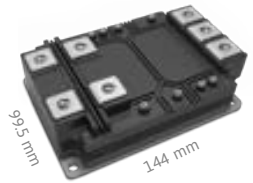
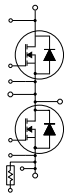
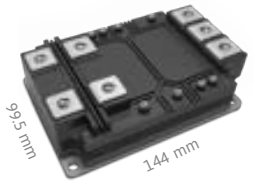
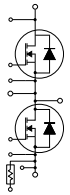
High Power next Core (HPnC)

			1700 V	2300 V
			X series 7th generation	X series 7th generation
		I_C		
2-Pack	For traction use   M297*1,2	1200 A	2MBI1200XYF170-50*1	
		1500 A	2MBI1500XYF170-50*1	
	For industrial use   M298*3	1200 A	2MBI1200XZF170-50	2MBI1200XZF230-50
		1500 A	2MBI1500XZF170-50	
		1800 A	2MBI1800XZF170-50	

*1) Under development
*2) Traction variant with MgSiC baseplate
*3) Industrial variant with Cu baseplate

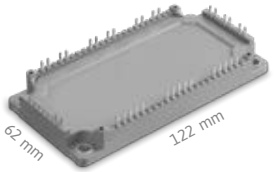
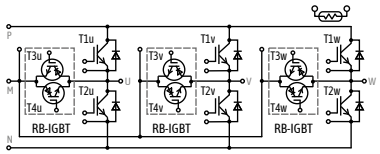
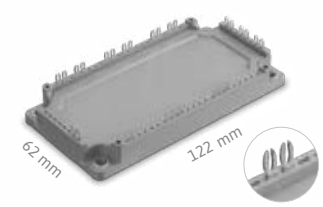
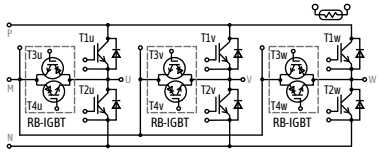
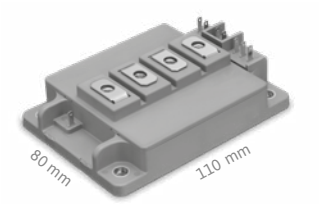
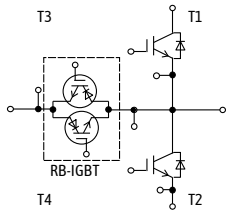
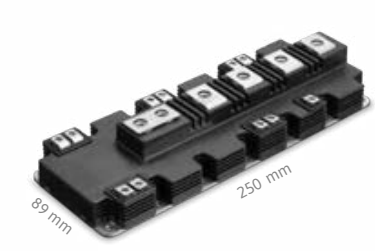
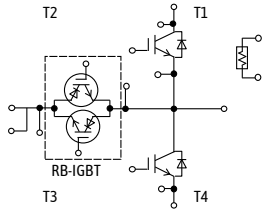
Silicon Carbide (SiC) Modules

			1200V	1700V
		I_C	SiC MOSFET	SiC MOSFET
62mm STD 2 in 1	  M295	200 A		2CSI200DAHE170-50
		300 A	2CSI300DAHE120-50	2CSI300DAHE170-50
		400 A		2CSI400DAHE170-50
		450 A	2CSI450DAHE120-50	
		600 A	2CSI600DAHE120-50	

			1700 V	2300 V	3300 V
		I_C	SiC MOSFET	SiC MOSFET	SiC MOSFET
2-Pack	For traction use   M297*1,2	850 A			2CI850HYF330-50*1
		1000 A	2CI1000HYF170-50*1		
		1500 A	2CI1500HYF170-50*1		
		1800 A	2CI1800HYF170-50*1		
	For industrial use   M298*1,3	1000 A	2CI1000HZF170-50*1		
		1200 A		2CI1200HZF230-50*1	
		1500 A	2CI1500HZF170-50*1		
		1800 A	2CI1800HZF170-50*1		

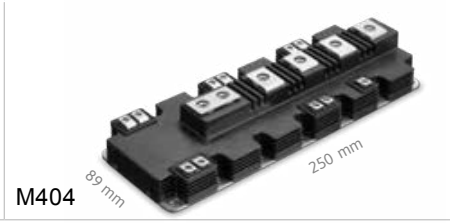
*1) Under development
*2) Traction variant with MgSiC baseplate
*3) Industrial variant with Cu baseplate

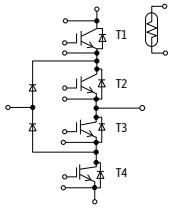
Advanced T-type NPC 3-Level Modules

				I_C	1200 V		1700 V	
					V series	RB-IGBT	V series	RB-IGBT
3 Phase With NTC, solder pins	M1203			50 A	12MBI50VN-120-50	600 V		
				75 A	12MBI75VN-120-50	600 V		
				100 A	12MBI100VN-120-50	600 V		
3 Phase With NTC, press fit pins	M1202			50 A	12MBI50VX-120-50	600 V		
				75 A	12MBI75VX-120-50	600 V		
				100 A	12MBI100VX-120-50	600 V		
1 Phase	M403			220 A			4MBI220VF-170R2-50	1200V
				300 A	4MBI300VG-120R-50	600 V		
					4MBI300VG-120R1-50	900 V		
				340 A	4MBI340VF-120R-50	600 V		
				400 A	4MBI400VF-120R-50*1	600 V		
					4MBI400VG-060R-50	600 V		
1 Phase	M404			450 A	4MBI450VB-120R1-50	900 V	4MBI450VB-170R2-50	1200V
					4MBI450VB-120R1-60*4	900 V	4MBI450VB-170R2-60*4	1200V
				600 A			4MBI600VB-170R2-50	1200V
							4MBI600VB-170R2-60*4	1200V
				650 A	4MBI650VB-120R1-50	900 V		
					4MBI650VB-120R1-60*4	900 V		
				900 A	4MBI900VB-120R1-50	900 V		
					4MBI900VB-120R1-60*4	900 V		
					4MBI900VB-120RA-50	900 V		
					4MBI900VB-120RA-60*4	900 V		

Note: AT-NPC (Advanced T-type Neutral-Point-Clamped) 3-level Module integrates RB-IGBT (Reverse Blocking-IGBT) in addition to ordinary IGBT and FWD in single package.
*1) Particular for Inverter of UPS or PCS *2) Particular for Converter of UPS *3) Under development *4) The products with suffix '-60' on this page are labeled to specify the rank of V_{sat} and V_F.

I-type NPC 3-Level Module

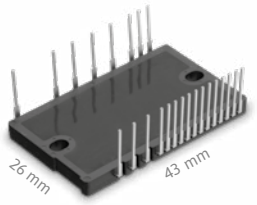
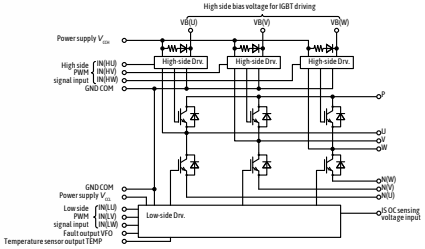
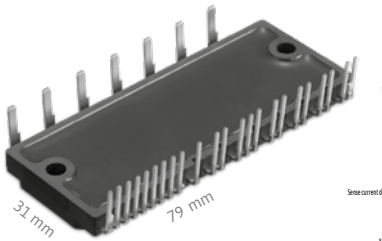
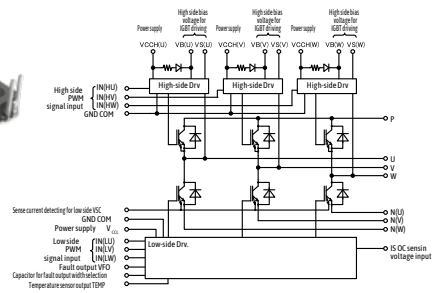
		I_C	1200 V V series
1 Phase	 M404	600 A	4MBI600VC-120-50



Small IPM (Intelligent Power Modules)

Built-in protection functions

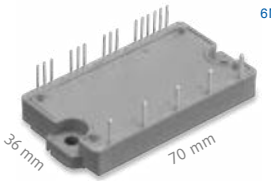
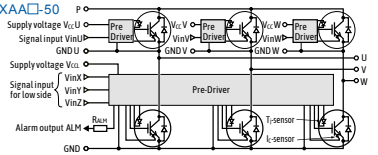
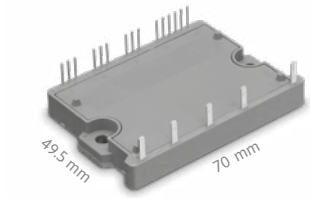
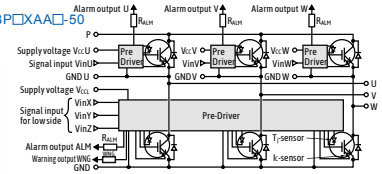
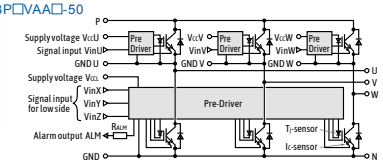
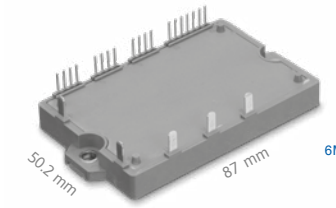
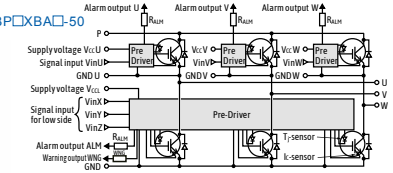
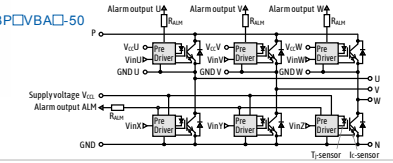
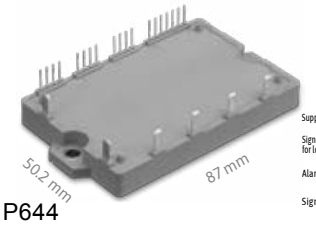
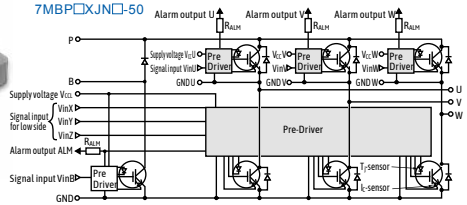
- N-side fault status output (Alarm)
- Under voltage protection (self-shutdown)
- Over current protection (self-shutdown)
- Overheating protection (self-shutdown)
- Temperature sensor output (Vtemp, out)

								600 V
							I_C	X series
Small IPM with High Voltage Driver-Ic without Brake-Chopper	 P633A			•		•	•	•	15 A	6MBP15XSD060-50
									20 A	6MBP20XSD060-50
									30 A	6MBP30XSD060-50
									35 A	6MBP35XSD060-50
				•	•	•	•	•	15 A	6MBP15XSF060-50
									20 A	6MBP20XSF060-50
									30 A	6MBP30XSF060-50
									35 A	6MBP35XSF060-50
	 P642			•		•	•	•	50 A	6MBP50XTA065-50
									75 A	6MBP75XTA065-50
				•	•	•	•	•	50 A	6MBP50XTC065-50
									75 A	6MBP75XTC065-50

IPM (Intelligent Power Modules)

Built-in protection functions

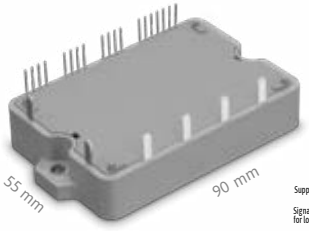
- P-side fault status output (Alarm)
- N-side fault status output (Alarm)
- Under voltage protection (self-shutdown)
- Over current protection (self-shutdown)
- Overheating protection (self-shutdown)

								I_C	600 V V series	650 V X series	1200 V V series	1200 V X series
Without Brake-Chopper	 P639	6MBP□XAA□-50 	•	•	•	•		10 A				6MBP10XRHA120-50
								20 A		6MBP20XRHA065-50		
								30 A		6MBP30XRHA065-50		
	 P629	6MBP□XAA□-50  6MBP□VAA□-50 	•	•	•	•		10 A			6MBP10VAA120-50	
								15 A			6MBP15VAA120-50	
								20 A	6MBP20VAA060-50			
								25 A			6MBP25VAA120-50	6MBP25XAA120-50
								30 A	6MBP30VAA060-50			
								35 A				6MBP35XAA120-50
								50 A	6MBP50VAA060-50	6MBP50XAA065-50		
								75 A		6MBP75XAA065-50		
	 P626	6MBP□XBA□-50  6MBP□VBA□-50 	•	•	•	•	•	25 A			6MBP25VBA120-50	6MBP25XBA120-50
								35 A			6MBP35VBA120-50	6MBP35XBA120-50
								50 A	6MBP50VBA060-50	6MBP50XBA065-50	6MBP50VBA120-50	6MBP50XBA120-50
								75 A	6MBP75VBA060-50	6MBP75XBA065-50		
								100 A		6MBP100XBA065-50		
With Brake-Chopper	 P644	7MBP□XJN□-50 	•	•	•	•	•	25 A				7MBP25XJN120-50
								35 A				7MBP35XJN120-50
								50 A		7MBP50XJN065-50		
								75 A		7MBP75XJN065-50		

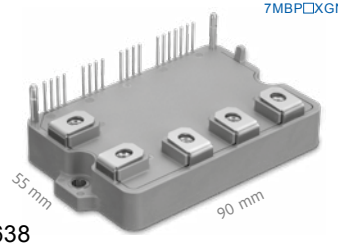
IPM (Intelligent Power Modules)

Built-in protection functions
- P-side fault status output (Alarm)
- N-side fault status output (Alarm)
- Under voltage protection (self-shutdown)
- Over current protection (self-shutdown)
- Overheating protection (self-shutdown)

							600V	650V	1200V	
						Ic	V series	X series	V series	X series
Without Brake -Chopper	6MBP□XFN□-50	•	•	•	•	•	25A			6MBP25VFN120-50	
							35A			6MBP35VFN120-50	
							50A	6MBP50VFN060-50		6MBP50VFN120-50	6MBP50XFN120-50
							75A	6MBP75VFN060-50			
							100A	6MBP100VFN060-50	6MBP100XFN065-50		
	6MBP□VFN□-50										
With Brake- Chopper	7MBP□XFN□-50	•	•	•	•	•	25A			7MBP25VFN120-50	
							35A			7MBP35VFN120-50	
							50A	7MBP50VFN060-50		7MBP50VFN120-50	7MBP50XFN120-50
							75A	7MBP75VFN060-50			
							100A	7MBP100VFN060-50	7MBP100XFN065-50		
	7MBP□VFN□-50						25A				
							35A				
							50A				
							75A				
							100A				
Without Brake -Chopper	7MBP□XGN□-50	•	•	•	•	•	25A				
							35A				
							50A				6MBP50XGN120-50
							75A				6MBP75XGN120-50
							100A		6MBP100XGN 065-50		
							150A		6MBP150XGN065-50		



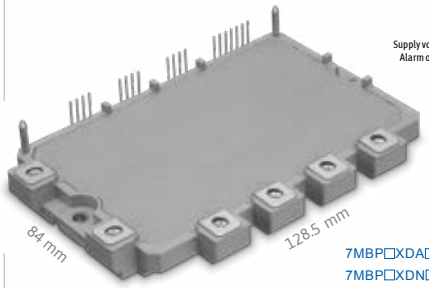
P636



P638

IPM (Intelligent Power Modules)

Built-in protection functions
- P-side fault status output (Alarm)
- N-side fault status output (Alarm)
- Under voltage protection (self-shutdown)
- Over current protection (self-shutdown)
- Overheating protection (self-shutdown)



P630

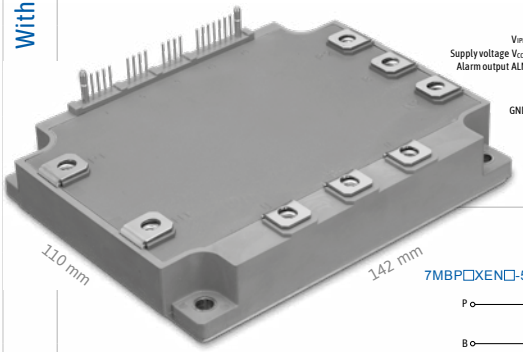
		I_C	600 V	650 V	1200 V	
			V series	X series	V series	X series
Without Brake-Chopper	6MBP□XDA□-50 6MBP□XDN□-50	25 A			6MBP25VDA120-50	
		35 A			6MBP35VDA120-50	
		50 A	6MBP50VDA060-50		6MBP50VDA120-50	6MBP50XDA120-50
					6MBP50VDN120-50	
		75 A	6MBP75VDA060-50		6MBP75VDA120-50	6MBP75XDA120-50
					6MBP75VDN120-50	6MBP75XDN120-50
	6MBP□VDA□-50 6MBP□VDN□-50	100 A	6MBP100VDA060-50	6MBP100XDA065-50	6MBP100VDA120-50	6MBP100XDA120-50
			6MBP100VDN060-50		6MBP100VDN120-50	6MBP100XDN120-50
		150 A	6MBP150VDA060-50	6MBP150XDA065-50		
			6MBP150VDN060-50	6MBP150XDN065-50		6MBP150XDN120-50
		200 A	6MBP200VDA060-50			
			6MBP200VDN060-50	6MBP200XDN065-50		
		250 A				
				6MBP250XDN065-50		
With Brake-Chopper	7MBP□XDA□-50 7MBP□XDN□-50	25 A			7MBP25VDA120-50	
		35 A			7MBP35VDA120-50	
		50 A	7MBP50VDA060-50		7MBP50VDA120-50	7MB P50XDA120-50
					7MBP50VDN120-50	
		75 A	7MBP75VDA060-50		7MBP75VDA120-50	7MBP75XDA120-50
					7MBP75VDN120-50	7MBP75XDN120-50
	7MBP□VDA□-50 7MBP□VDN□-50	100 A	7MBP100VDA060-50	7MBP100XDA065-50	7MBP100VDA120-50	7MBP100XDA120-50
			7MBP100VDN060-50		7MBP100VDN120-50	7MBP100XDN120-50
		150 A	7MBP150VDA060-50	7M BP150XDA065-50		
			7MBP150VDN060-50	7MBP150XDN065-50		7MBP150XDN120-50
		200 A	7MBP200VDA060-50			
			7MBP200VDN060-50	7MBP200XDN065-50		
		250 A				
				7MBP250XDN065-50		

Note 1: The products with 'VDN'/'XDN' on this page have high heat dissipation characteristics.
Note 1: The products with 'VDN' on this page have high heat dissipation characteristics.

IPM (Intelligent Power Modules)

Built-in protection functions

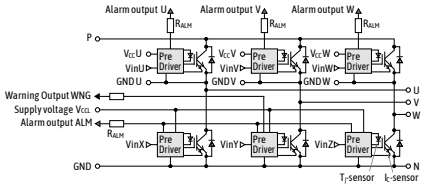
- P-side fault status output (Alarm)
- N-side fault status output (Alarm)
- Under voltage protection (self-shutdown)
- Over current protection (self-shutdown)
- Overheating protection (self-shutdown)



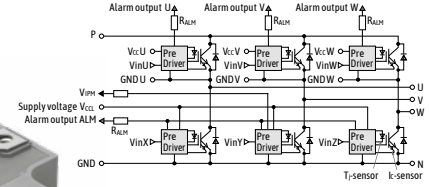
P631

Without Brake-Chopper

6MBP□XEN□-50

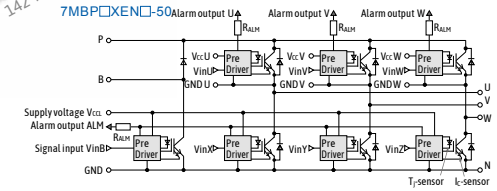


6MBP□VEA□-50

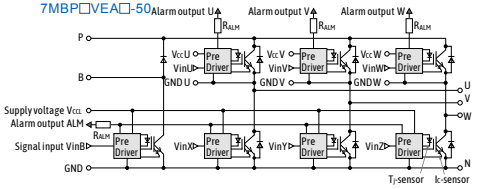


With Brake-Chopper

7MBP□XEN□-50



7MBP□VEA□-50



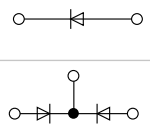
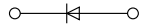
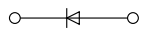
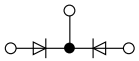
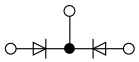
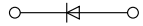
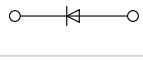
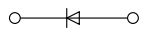
	I_C	600 V V series	650 V X series	1200 V V series	1200 V X series
Without Brake-Chopper	100 A			6MBP100VEA120-50	6MBP100XEN120-50
	150 A			6MBP150VEA120-50	6MBP150XEN120-50
	200 A	6MBP200VEA060-50	6MBP200XEN065-50	6MBP200VEA120-50	6MBP200XEN120-50
	300 A	6MBP300VEA060-50	6MBP300XEN065-50		6MBP300XEN120-50
	400 A	6MBP400VEA060-50	6MBP450AEN065-50		
	450 A				
With Brake-Chopper	100 A			7MBP100VEA120-50	7MBP100XEN120-50
	150 A			7MBP150VEA120-50	7MBP150XEN120-50
	200 A	7MBP200VEA060-50	7MBP200XEN065-50	7MBP200VEA120-50	7MBP200XEN120-50
	300 A	7MBP300VEA060-50	7MBP300XEN065-50		7MBP300XEN120-50
	400 A	7MBP400VEA060-50			
	450 A		7MBP450XEN065-50		

Discrete IGBT

		600 V		650 V	1200 V	
	I_C	V series	RB series	XS series	XS series	V series
TO-247 (Type:B)	30 A			FGW30XS65		
	40 A			FGW40XS65	FGW40XS120	
	50 A			FGW50XS65		
	75 A			FGW75XS65	FGW75XS120	
	15 A					FGW15N120VD
	25 A					FGW25N120VD
	30 A	FGW30N60VD		FGW30XS65C		
	40 A			FGW40XS65C	FGW40XS120C	FGW40N120VD
	50 A	FGW50N60VD		FGW50XS65D		
				FGW50XS65C		
	75 A			FGW75XS65D	FGW75XS120C	
				FGW75XS65C		
RB-IGBT	85 A		FGW85N60RB			
TO-247Plus-3	100 A				FGWP100XS120C*	
	140 A				FGWP140XS120C*	
TO-247-4	75 A			FGZ75XS65C	FGZ75XS120C	
TO-247Plus-4H	100 A				FGZP100XS120C*	
	140 A				FGZP140XS120C*	

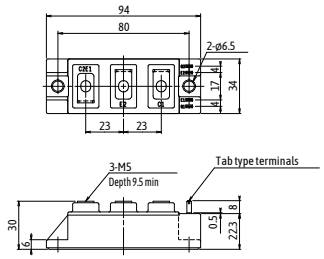
*1) Under development

SiC-SBD

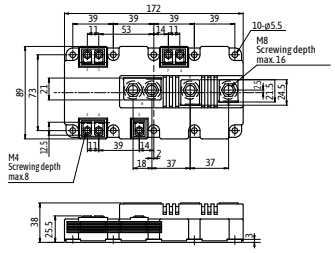
	I_C	650 V		1200 V	
		SiC-SBD 2G	SiC-SBD 1G	SiC-SBD 2G	SiC-SBD 1G
  T-Pack(s)	10 A		FDCC10S65		
	20 A				
	25 A		FDCC25S65		
	20 A		FDCC20C65		
  TO-220-2 (Type:A)	6 A	FDC2PT06S65			
	8 A	FDC2PT08S65			
	10 A	FDC2P10S65			
  TO-220-2 (Type:B)	10 A		FDCP10S65		
	25 A		FDCP25S65		
  TO-220	20 A		FDCP20C65		
  TO-220F	20 A		FDCA20C65		
  TO-220F-2	6 A	FDC2AT06S65			
	8 A	FDC2AT08S65			
	10 A	FDC2AT10S65	FDCA10S65		
	18 A				FDCA18S120
	25 A		FDCA25S65		
  TO-247 (Type:A)	10 A		FDCY10S65		
	18 A				FDCY18S120
	25 A		FDCY25S65		
	20 A		FDCY20S65		
	36 A				FDCY36C120
	50 A		FDCY50C65		
  TO-247-2	18 A				FDCW18T120
	20 A			FDC2WT20S120	
	40 A			FDC2WT40S120	

Package Outlines (in mm)

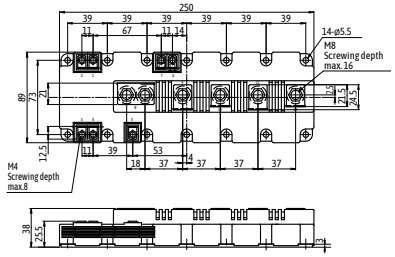
M263



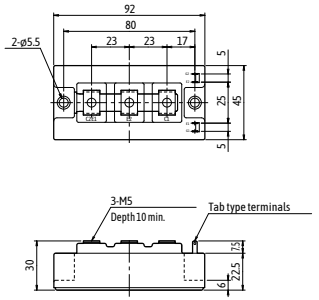
M271



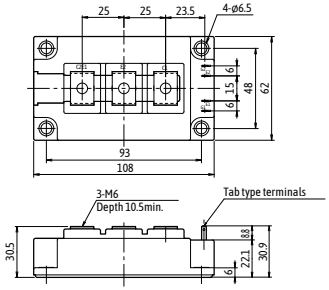
M272



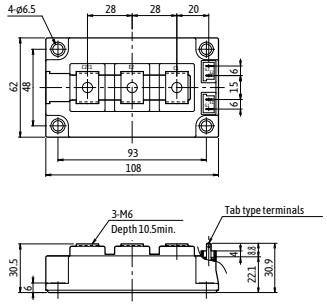
M274



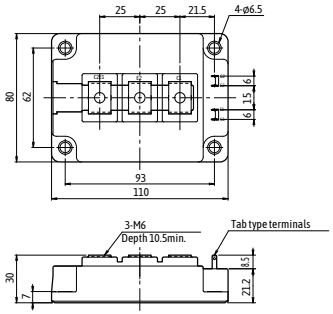
M275



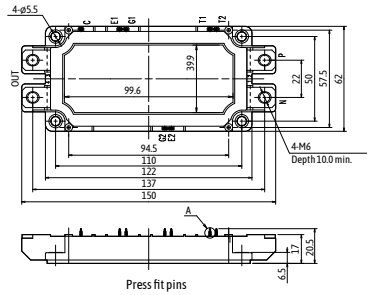
M276



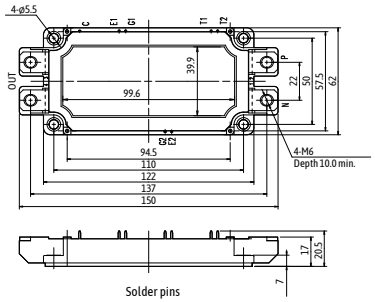
M277



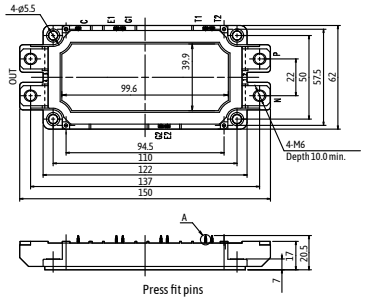
M282



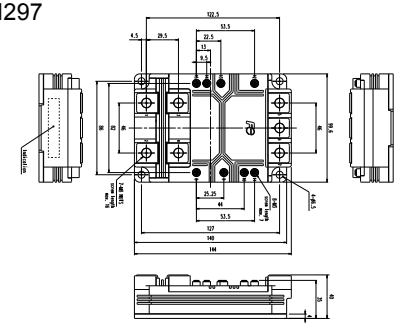
M285



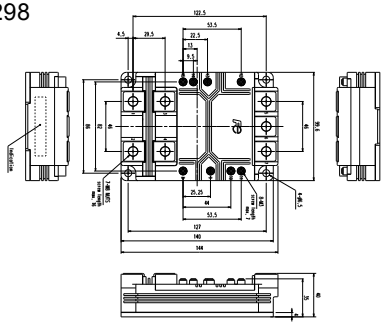
M286



M297

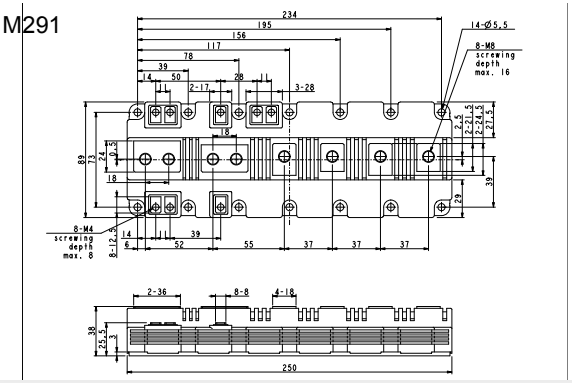


M298

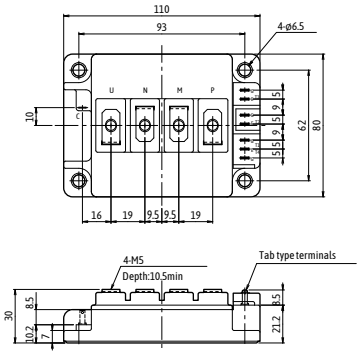


Package Outlines (in mm)

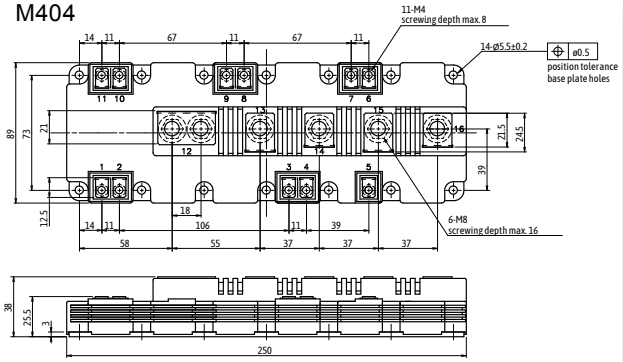
M291



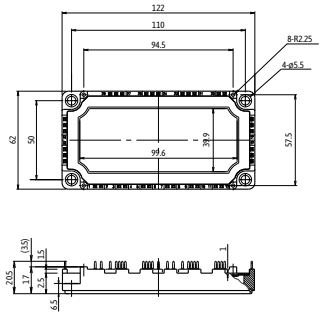
M403



M404

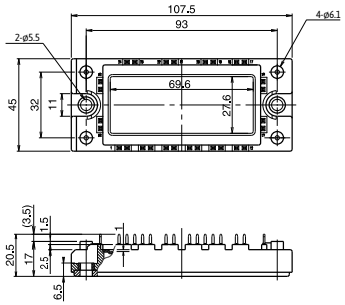


M633



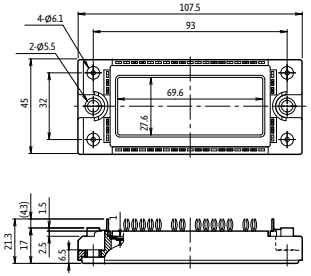
Solder pins

M636



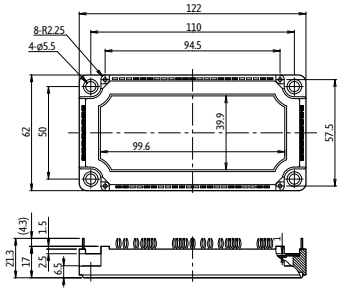
Solder pins

M647



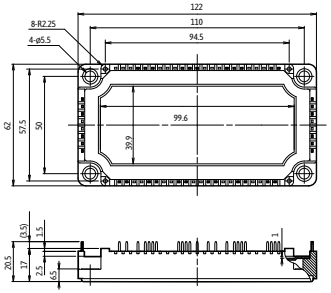
Press fit pins

M648



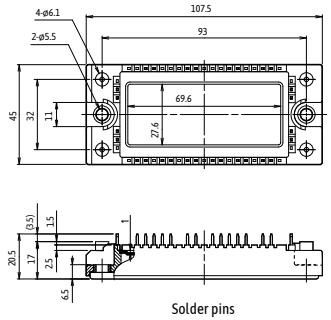
Press fit pins

M668



Solder pins

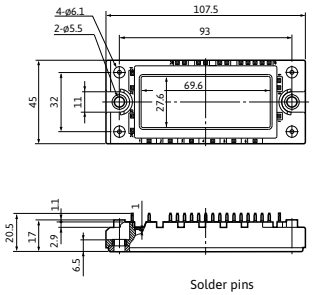
M669



Solder pins

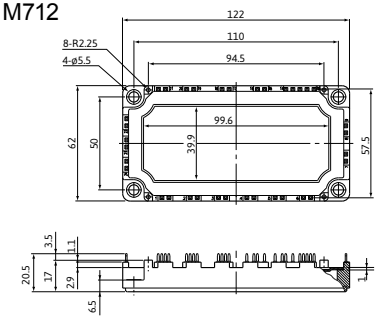
Package Outlines (in mm)

M711



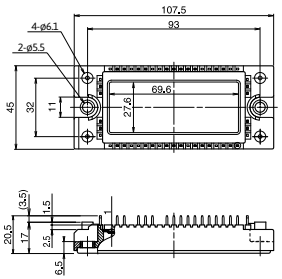
Solder pins

M712



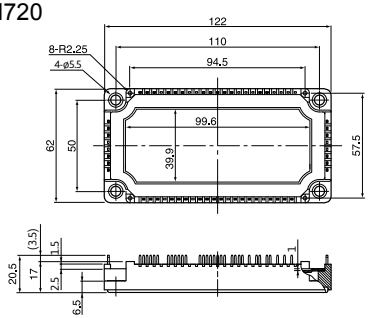
Solder pins

M719



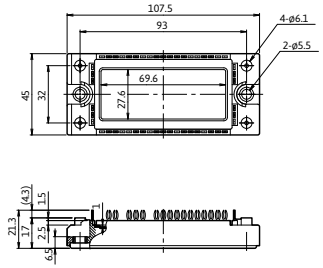
Solder pins

M720



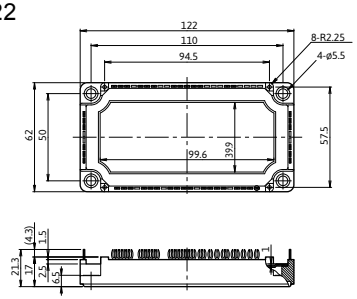
Solder pins

M721



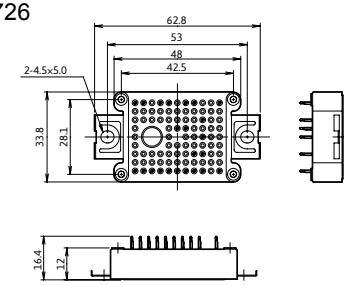
Press fit pins

M722



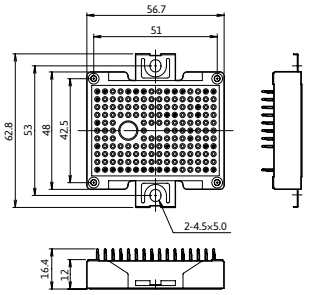
Press fit pins

M726



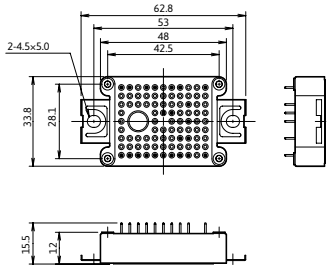
Press fit pins

M727



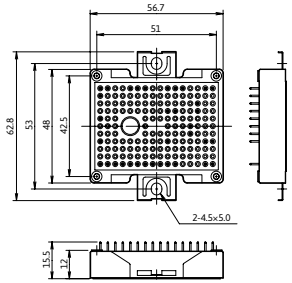
Press fit pins

M728



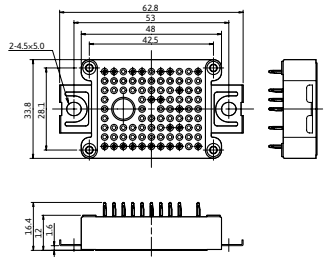
Solder pins

M729



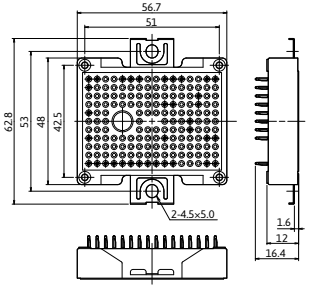
Solder pins

M730



Press fit pins

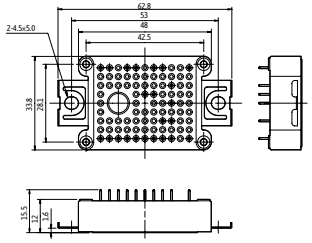
M731



Press fit pins

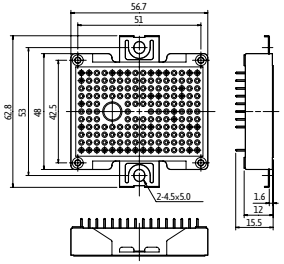
Package Outlines (in mm)

M732



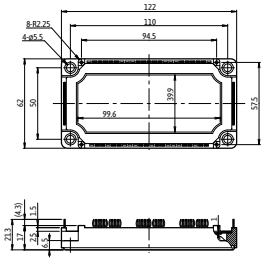
Solder pins

M733



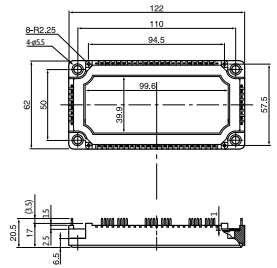
Solder pins

M1202



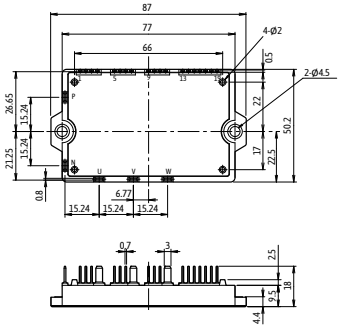
Press fit pins

M1203

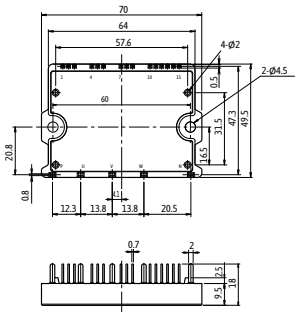


Press fit pins

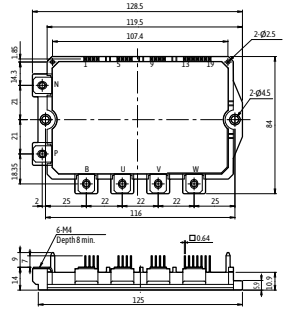
P626



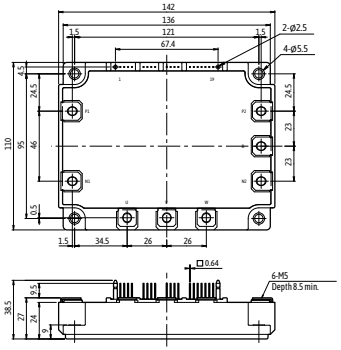
P629



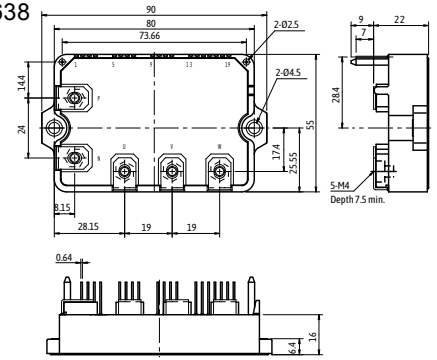
P630



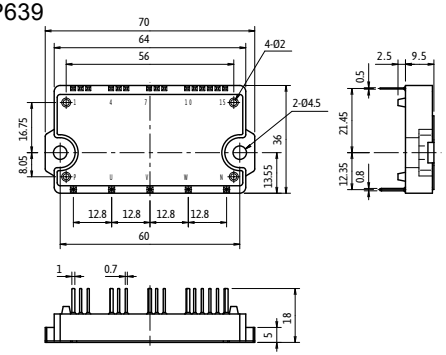
P631



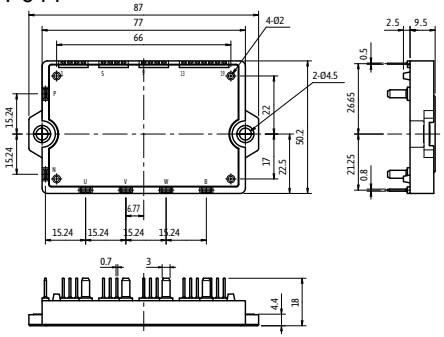
P638



P639

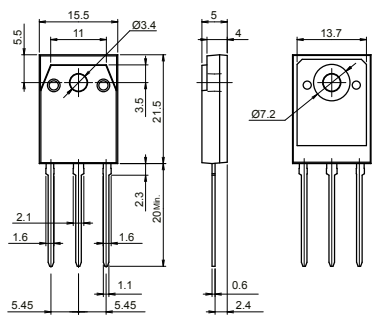


P644

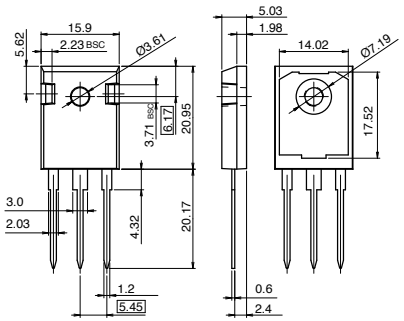


Package Outlines (in mm)

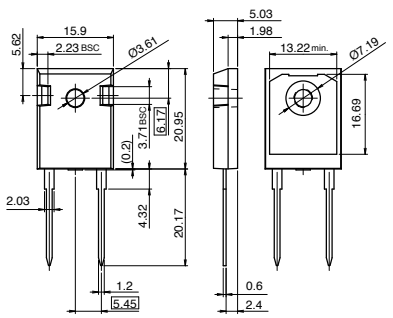
TO-247 (Type:A)



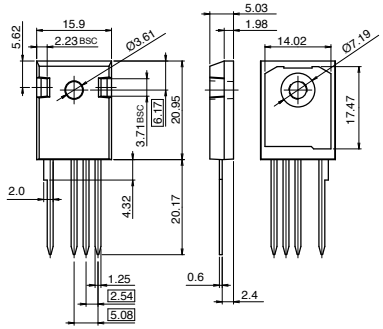
TO-247 (Type:B)



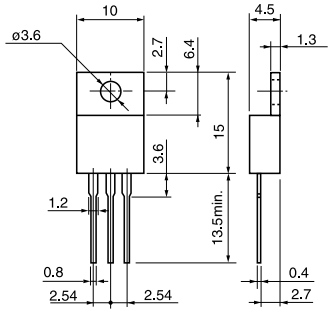
TO-247-2



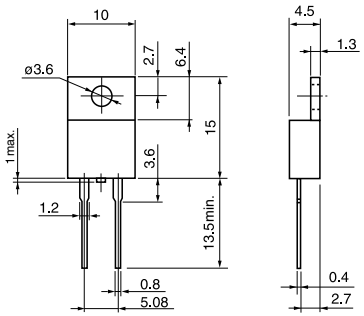
TO-247-4



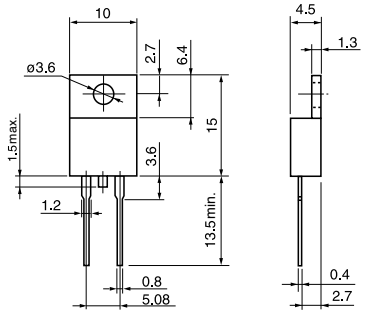
TO-220



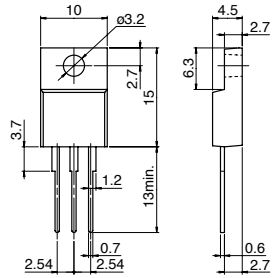
TO-220-2 (Type: A)



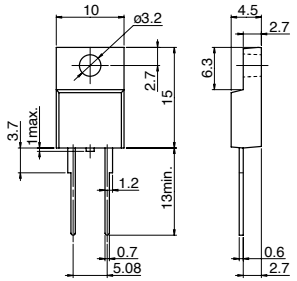
TO-220-2 (Type: B)



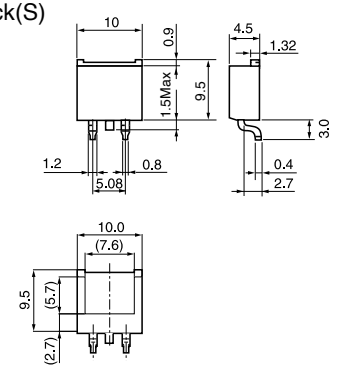
TO-220F



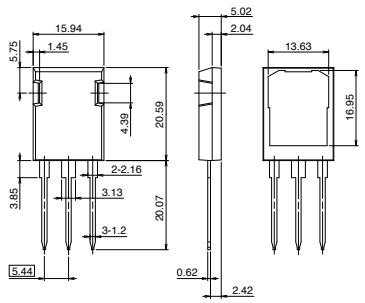
TO-220F-2



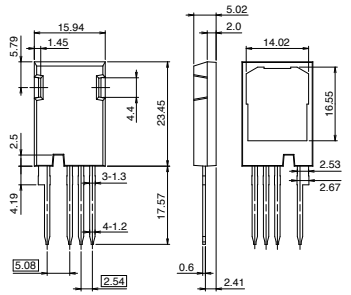
T-Pack(S)



TO-247Plus-3



TO-247Plus-4H



Contributing to the creation of a sustainable society

Fuji Electric contributes to the resolution of social and environmental issues through its business activities.

Fuji Electric's corporate policy is to contribute to the realization of a safe, secure, and sustainable society through its energy and environmental businesses, based on its management philosophy of "contribute to prosperity," "encouraging creativity,"and "seek harmony with the environment." Acting in accordance with this code, Fuji Electric is contributing to the accomplishment of the United Nations Sustainable Development Goals through its business activities.

SDGs to be Addressed through Fuji Electric's Companywide Activities

Priority SDGs to be Adressed through Energy and Enviroment Businesses

Goals that support business activities

Resolution of Social and Enviromental Issues

Creation of Customer Value

Corporate Philosophy

Management Policies

Fuji Electric Code of Conduct

We have formulated nine SDG targets for all of our corporate activities. To help achieve these targets, we have established an SDG Promotion Committee and are carrying out initiatives that are in line with the international community's goal of achieving the SDGs.

Environmental Vision by 2050

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