

Power Semiconductors **Selection Guide**

06|2026

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.



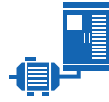
Fuji Electric provides Power Semiconductors well suited for various applications

LV-INV INVERTERS



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



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



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



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



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

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



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



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



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



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



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



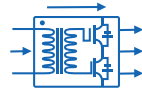
Semiconductor products which suits best to the needs of white goods, like low power (650 V rating), compact size and integrated drive and protection functions.

MILITARY/ DEFENSE



Semiconductor products designed for defense systems requiring high reliability, such as for military-grade power supplies and harsh environment control.

SST



Next-generation semiconductor-based power transformers that replace passive transformers. Optimized for high-frequency conversion and smart grid stabilization.

EV FAST CHARGER



Semiconductor devices for the power modules and control circuits in high-power (kW/MW) fast chargers for electric vehicles. Features optimized thermal management and efficiency.



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

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

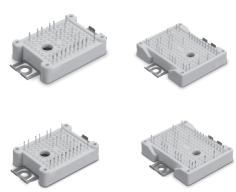
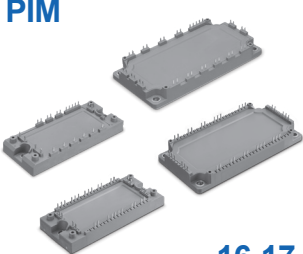
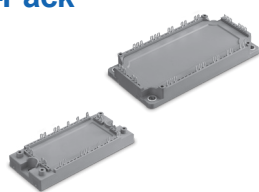
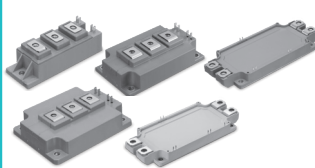
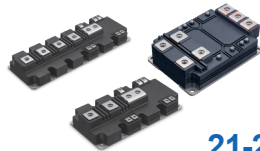
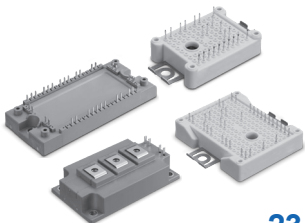

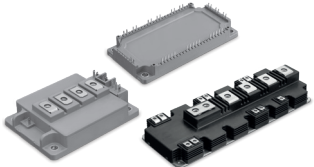


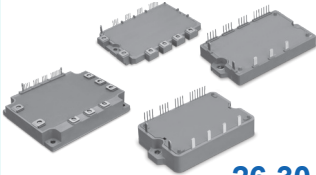
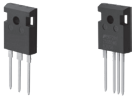


INDUSTRY



PUBLIC TRANSPORTATION

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Small PIM  15	PIM  16-17	6-Pack  18	Standard 2-Pack  19-20	PrimePACK™ High Power next Core (HPnC)  21-22	SiC Modules  23
High Power next Core (HPnC) SiC Modules  23	Advanced T-type NPC 3-Level Modules  24	I-type NPC 3-Level Modules  25	Small IPM  25	IPM (Intelligent Power Modules)  26-30	Discrete IGBT  31-32
Rectifier Diode; SiC-SBD  33	Package Outlines (in mm) 34-38	<small>* Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.</small>			

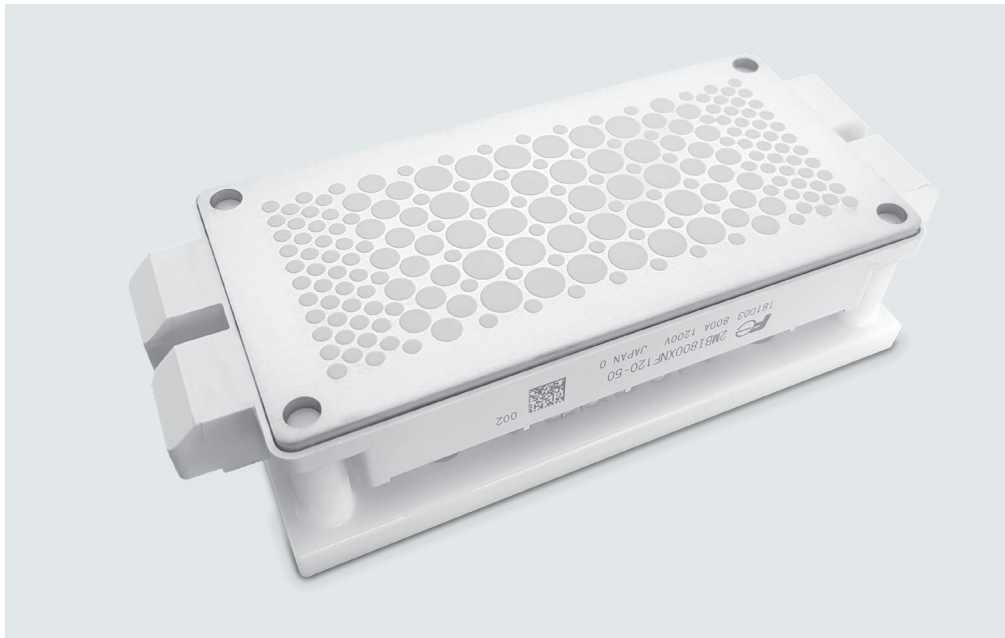
Thermal Interface Material (TIM)

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

Process - Benefits

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

New TIM

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

Thermal - Benefits

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

The range of modules with preapplied TIM is being continually expanded.

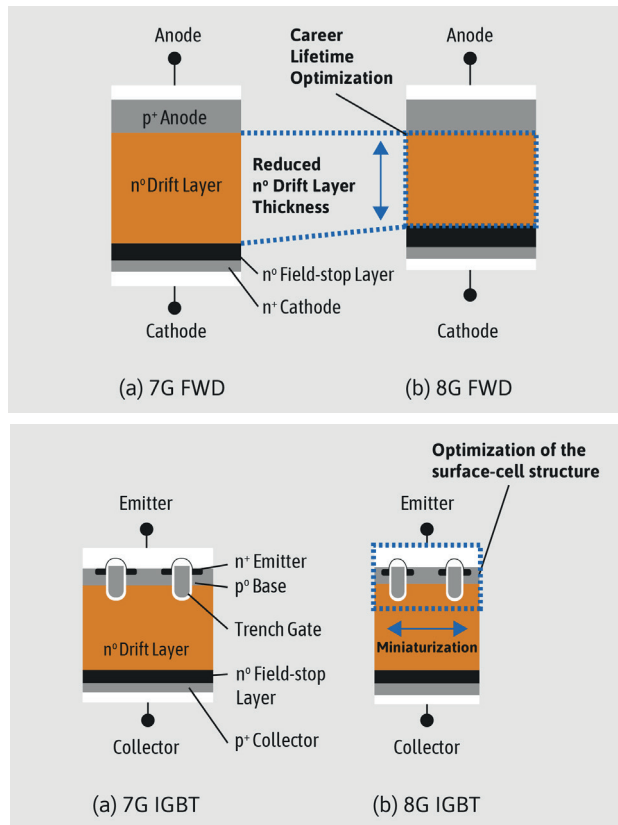
For latest availability status please contact us:

info.semi@fujielectric-europe.com

Features of IGBT Module A Series

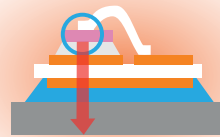
1. Development of 8th-Generation Devices

To improve VCE(sat) and turn-on loss (Eon), new 8G IGBT and FWD devices have been developed. Fig. 1 and Fig. 2 show cross-sectional views comparing the 1,200V 8G IGBT/FWD devices with the 7G devices. In the IGBT, the surface cell structure is miniaturized to increase the accumulated carrier density in the drift layer, lowering conduction losses [2]. The arrangement pattern of this surface cell structure is further optimized to reduce Eon. For the FWD, the drift layer has been thinned, and the carrier lifetime has been precisely controlled to optimize carrier distribution, effectively reducing the reverse recovery loss (Err).



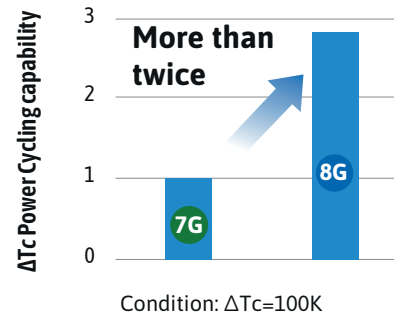
2. Packaging Technology and Reliability Enhancements

To ensure long-term reliability and stable high-temperature operation, the solder beneath the insulating substrate was improved. Conventional solder can crack under repeated thermal stress, increasing thermal resistance and causing overheating. As a result, the maximum case temperature (T_c) was limited to 125°C. To overcome this limitation, a newly developed high-strength solder material was adopted (Fig. 13).



Suppress growth of solder cracks and degradation of heat performance

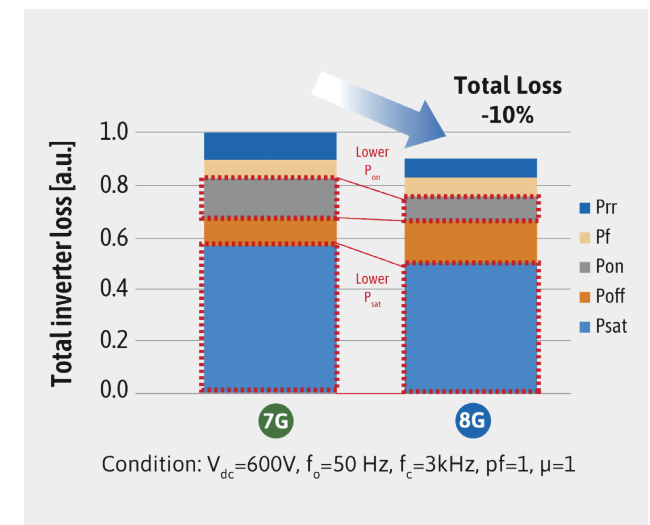
By optimizing key physical properties such as melting point, creep behavior, and thermal expansion, the new solder significantly reduces crack formation caused by thermal stress and maintains stable thermal performance over time. As shown in Fig. 14, the ΔT_c power cycling capability is more than twice that of the conventional design, improving operating margin, thermal management flexibility, and reducing maintenance costs.



3. 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 7th generation X series.

The figure below shows the calculated losses of the 8G module under typical inverter conditions. Reduced conduction loss (P_{sat}), turn-on loss (P_{on}), and reverse recovery loss (P_{rr}) lead to a 10% total inverter loss reduction compared to 7G. Although the turn-off loss (P_{off}) slightly increases, the device was intentionally optimized for lower VCE(sat) to minimize overall inverter loss under practical conditions. As a result, the total inverter loss is still reduced. In addition, the 10% loss reduction, together with the higher T_c limit enabled by the new solder material, allows higher output current before reaching the T_{vj} limit of 175°C.



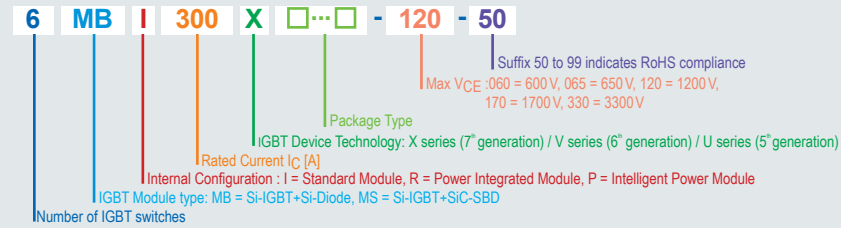
Product Portfolio

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	2000V	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	•					•	•	•	•	•	•	•				•			23/24	
4,12	T/I-type NPC 3-Level	Reverse-Blocking IGBTs are integrated.					•	•	•	•	•	•	•	•	•	•	•	•		25	
6,7	Small IPM / IPM			•			•	•	•	•	•	•	•	•	•	•	•	•		26-30	
1	Discrete IGBT				•		•	•	•	•	•	•	•	•	•					31-32	
	SiC-SBD					•	•	•	•	•	•	•	•	•						33	

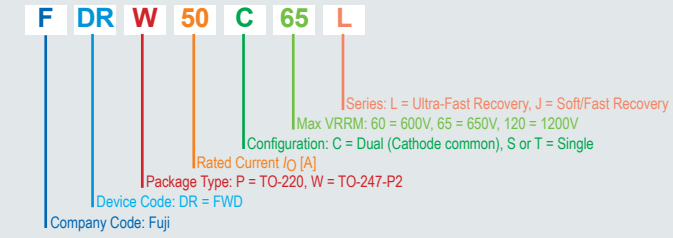
Note: PrimePACK™, EconoPIM™ and EconoPACK™ are registered trademarks of Infineon Technologies AG, Germany

Type Name Explanation

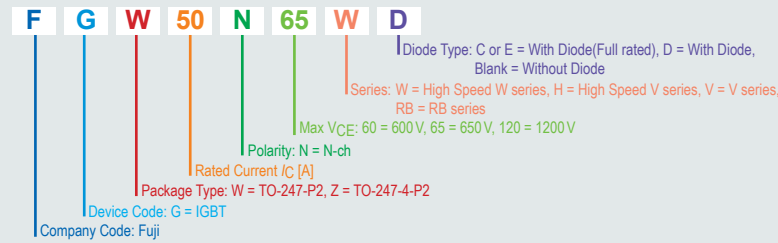
IGBT Module Production Number



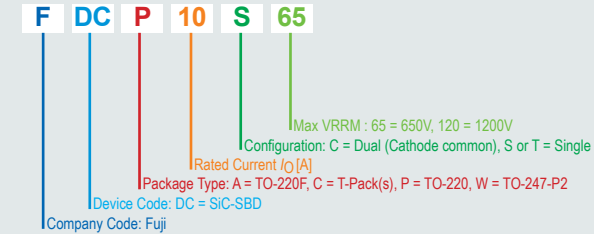
Rectifier Diode Production Number



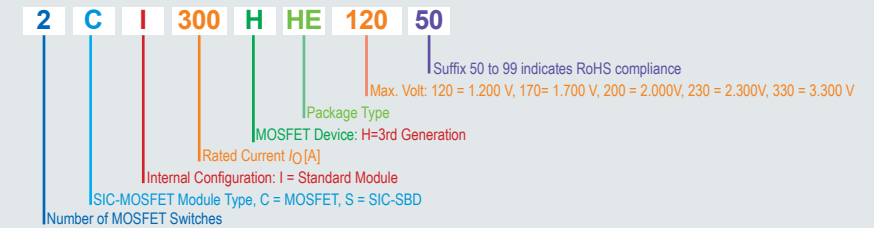
Discrete IGBT Production Number



SiC Schottky-Barrier Diode Production Number



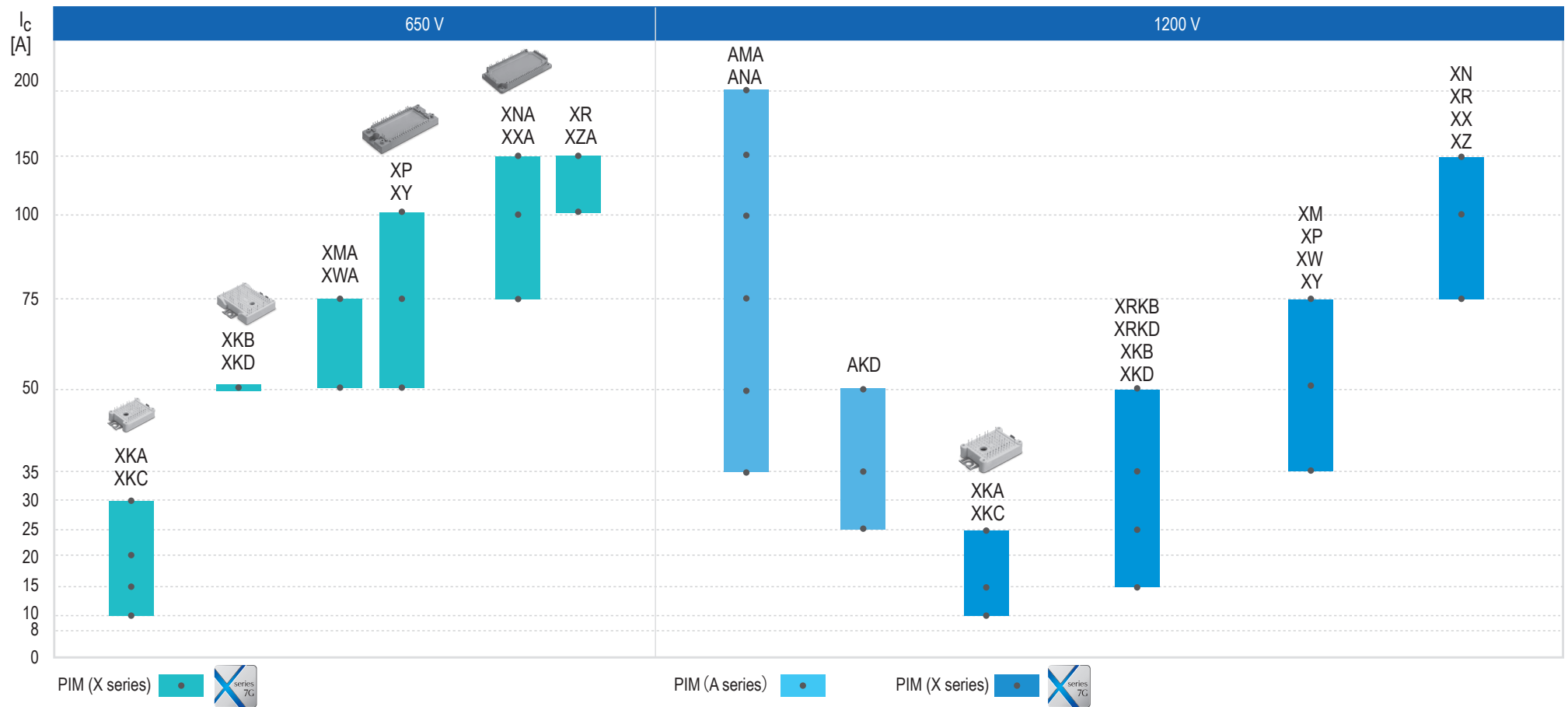
All-SiC Module Production Number



PIM (Power Integrated Modules) Product Map

7MBR	X series		A series		Size	Product Category	Page
	Solder pins	Press fit pins	Solder pins	Press fit pins			
Package Type	XKC	XKA			33.8 × 62.8 mm	Small PIM™	15
	XKD, XRKD	XKB, XRKB	AKD		56.7 × 62.8 mm		15
	XM, XP	XW, XY	AMA		45 × 107.5 mm	EconoPIM™	16/17
	XN, XR	XX, XZ	ANA		62 × 122 mm		16/17

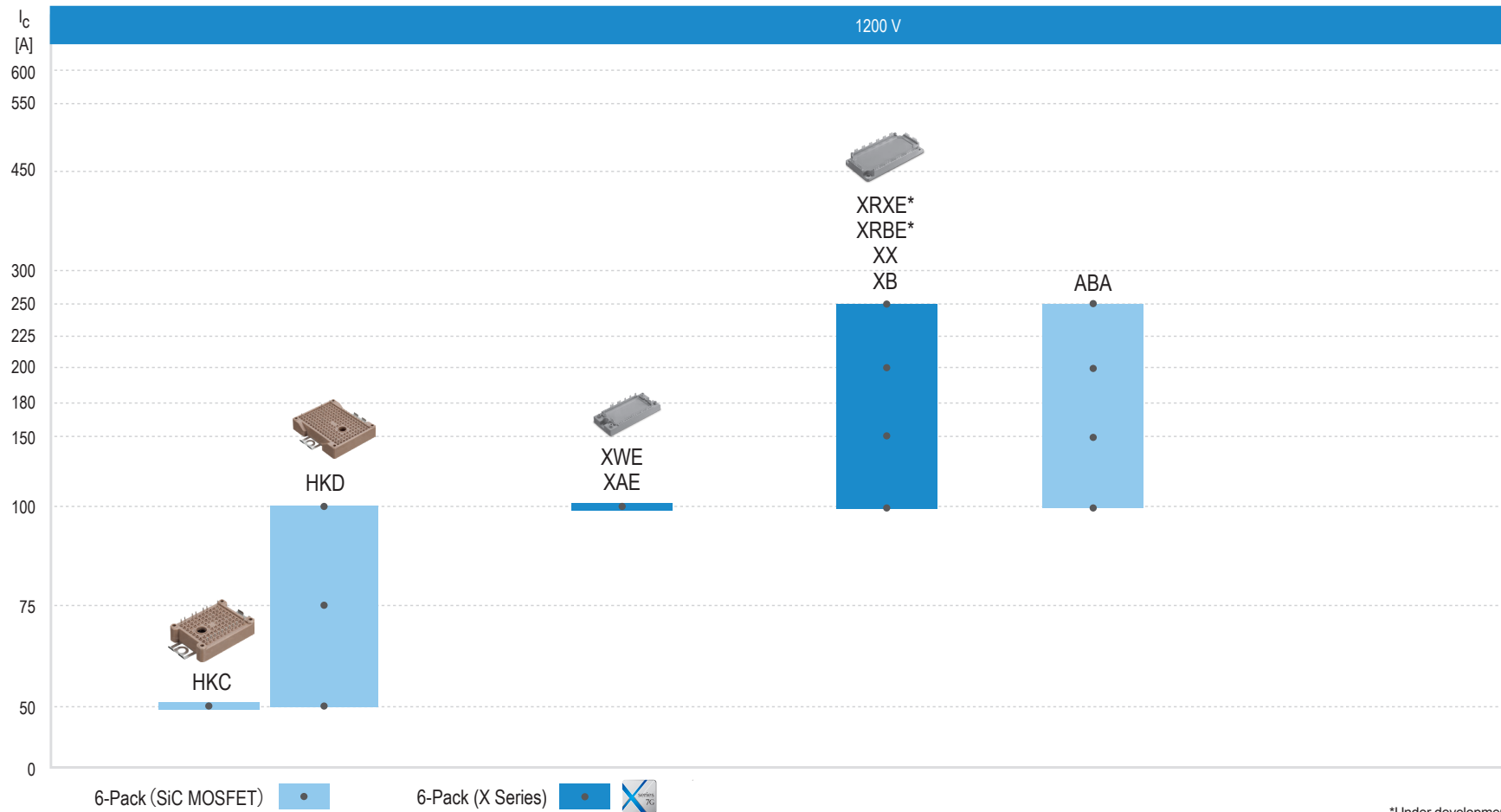
Note: EconoPIM™ is registered trademark of Infineon Technologies AG, Germany.



6-Pack Product Map

6MBI	X series		A series		Size	Product Category	Page
	Solder pins	Press fit pins	Solder pins	Press fit pins			
Package Type					33.8 × 62.8 mm	Small PACK	24
					56.7 × 62.8 mm		24
	XAE	XWE			45 × 107.5 mm	EconoPACK™	18
	XB, XRBE*	XX, XRXE*	ABA		62 × 122 mm		18

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

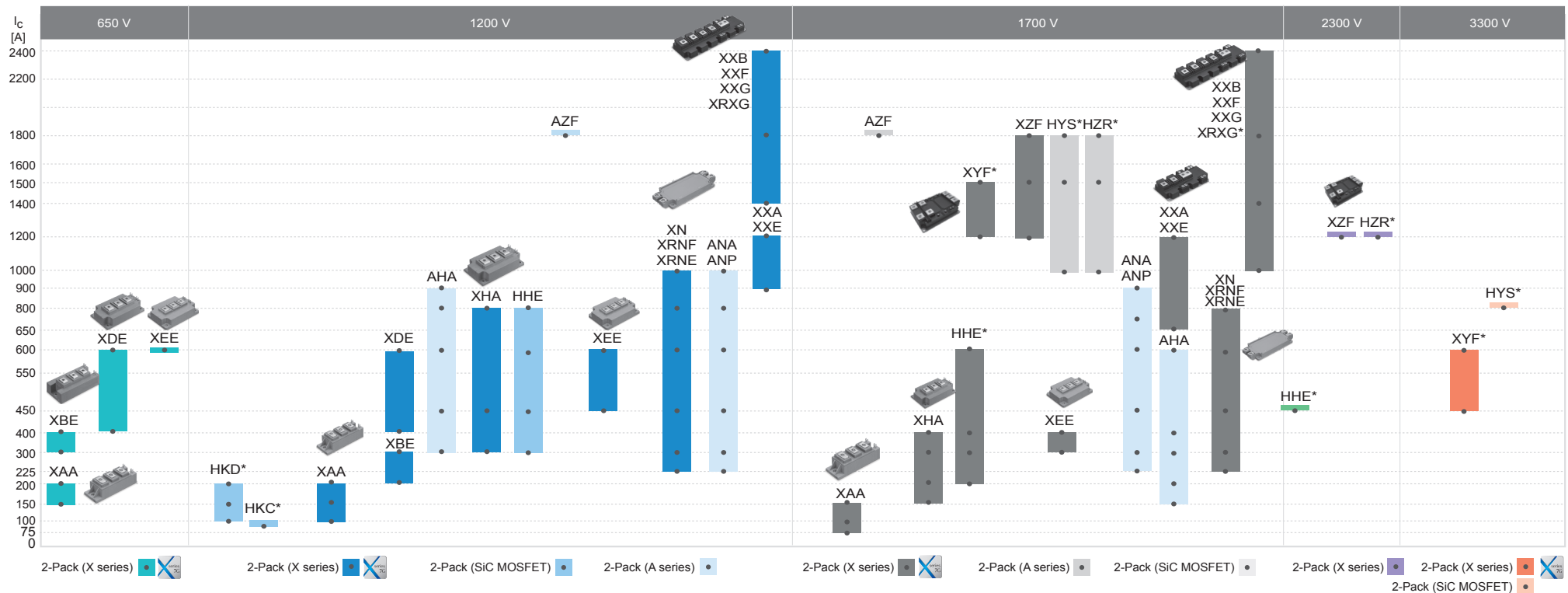


*Under development

2-Pack Product Map

2MBI	X series	A series	SIC MOSFET	Size	Product Category	Page	
Package Type			HKC*	33.8 × 48 mm	Small PACK	24	
			HKD*	56.7 × 48 mm		24	
	XAA			34 × 94 mm	Standard Pack	19	
	XBE			45 × 92 mm		19	
	XDE	AHA		62 × 108 mm		19	
	XEE			80 × 110 mm		19	
	XHA			62 × 108 mm		19	
	XN, XRNE, XRNF	ANP		HHE*	62 × 108 mm	Dual XT	23
	XYF*, XZF	AZF			62 × 150 mm		20
				HYS*, HZR*	99.5 × 144 mm	HPnC	22
	XXA, XXE				89 × 172 mm	PrimePACK™	23
	XXB, XXF, XXG, XRXG				89 × 250 mm		21/22

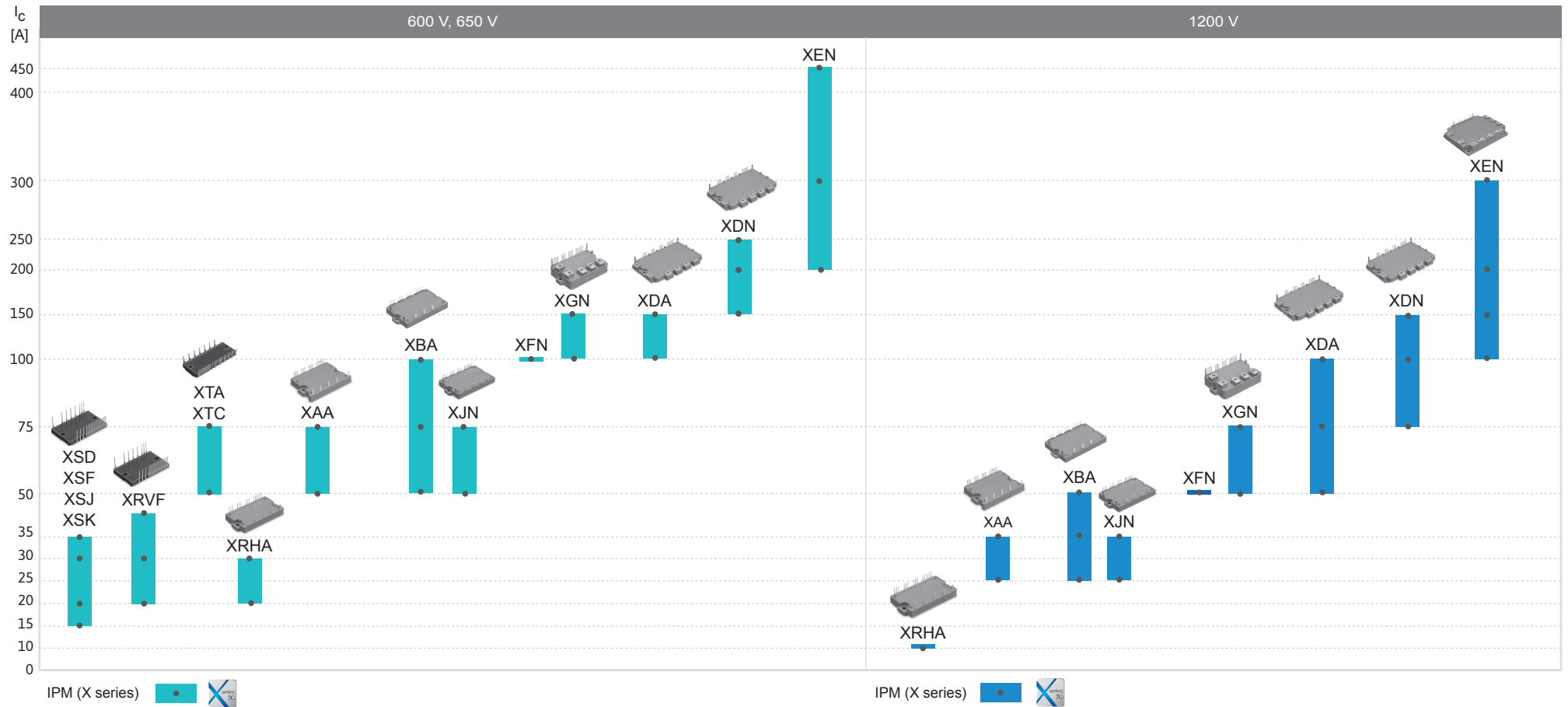
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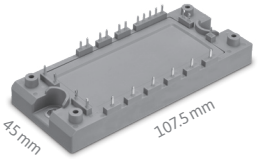
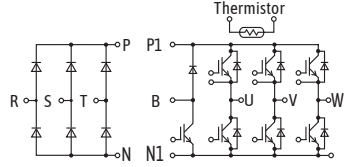
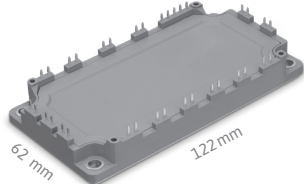
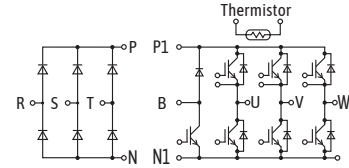
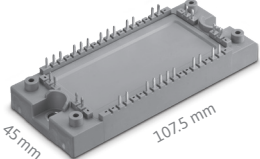
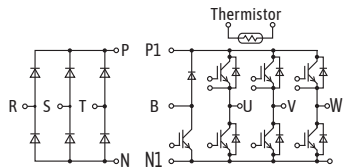
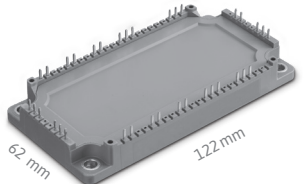
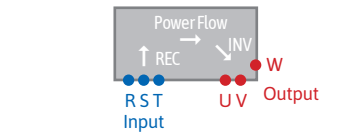
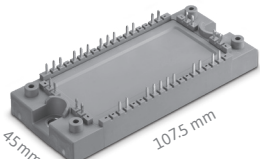
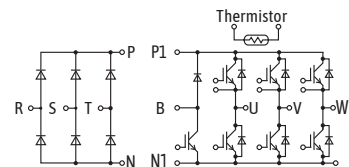
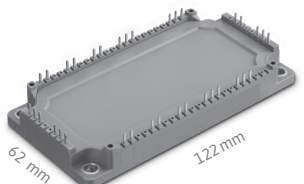
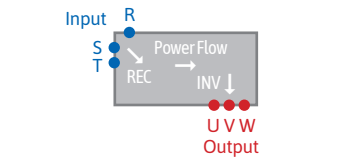
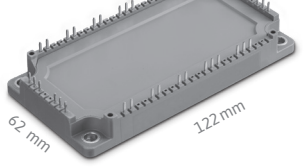
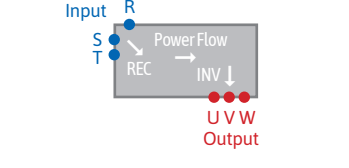
*Under development

IPM (Intelligent Power Modules) Product Map

6/7MBP	X series		Size	Page	
		X series			
Package Type	7 in 1		6 in 1		
	XSD, XSF, XSJ, XSK		•	26 × 43 mm	26
	XTA, XTC		•	79 × 31 mm	26
	XRVF		•	19 × 33 mm	26
	XRHA		•	36 × 70 mm	27
	XAA		•	49.5 × 70 mm	27
	XBA		•	50.2 × 87 mm	27
	XJN	•		50.2 × 87 mm	27
	XFN	•	•	55 × 90 mm	28
	XGN		•	55 × 90 mm	28
	XDA, XDN	•	•	84 × 128.5 mm	29
	XEN	•	•	110 × 142 mm	30



PIM (Power Integrated Modules) EconoPIM™



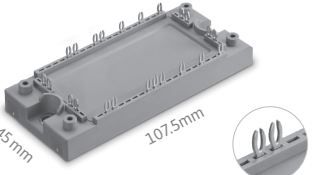
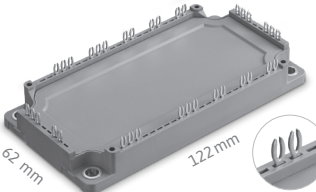
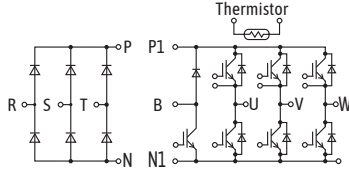
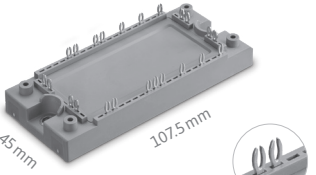
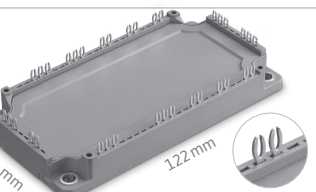
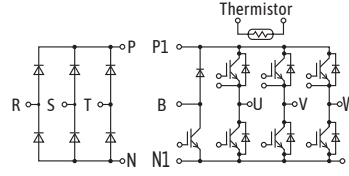
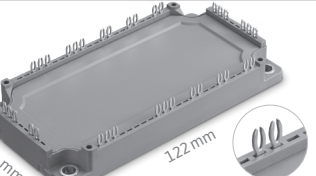

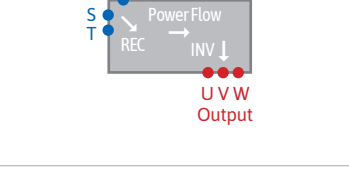
		650 V		1200 V	
		X series	X series	X series	A series
With NTC, solder pins. PIM	M711  	25 A			
		35 A			
	M712  	35 A			
		50 A			
	M719  	25 A			
		35 A			
M720  	50 A				
	75 A	7MBR75XNA065-50	7MBR75XNA120-50	7MBR75ANA120-50*	
	100 A	7MBR100XNA065-50	7MBR100XNA120-50	7MBR100ANA120-50*	
	150 A	7MBR150XNA065-50	7MBR150XNE120-50	7MBR150ANA120-50*	
	200 A			7MBR200ANA120-50*	
M719  	25 A				
	35 A		7MBR35XPA120-50		
	50 A	7MBR50XPA065-50	7MBR50XPA120-50		
	75 A	7MBR75XPA065-50	7MBR75XPE120-50		
M720  	100 A	7MBR100XPE065-50	7MBR100XPE120-50		
	50 A				
	75 A		7MBR75XRA120-50		
	100 A	7MBR100XRA065-50	7MBR100XRA120-50		
M720  	100 A		7MBR100XRE120-50		
	150 A	7MBR150XRA065-50	7MBR150XRE120-50		
		7MBR150XRE065-50			

*) Under development

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.

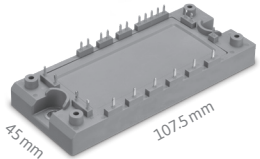
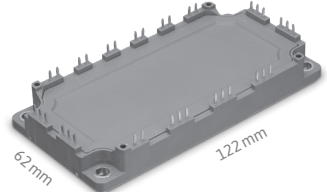
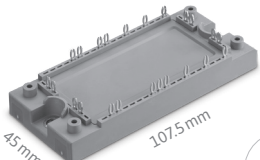
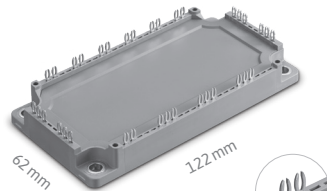
PIM (Power Integrated Modules) EconoPIM™

		650 V	1200 V
		X series	X series
			
		I_c	
With NTC, press fit pins	 <p>M721 45 mm x 107.5 mm</p>  <p>M722 62 mm x 122 mm</p> 	25 A	
		35 A	7MBR35XWA120-50
		50 A	7MBR50XWA065-50
		75 A	7MBR75XWA065-50
		50 A	
		75 A	7MBR75XXA065-50
	 <p>M721 45 mm x 107.5 mm</p>  <p>M722 62 mm x 122 mm</p> 	25 A	
		35 A	7MBR35XYA120-50
		50 A	7MBR50XYA065-50
		75 A	7MBR75XYA065-50
		100 A	7MBR100XYE065-50
		50 A	
 <p>M721 45 mm x 107.5 mm</p>  <p>M722 62 mm x 122 mm</p> 	75 A	7MBR75XZA120-50	
	100 A	7MBR100XZA065-50	
	100 A	7MBR100XZA120-50	
	150 A	7MBR150XZA065-50	
	150 A	7MBR150XZE120-50	
	150 A		

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™

		1200 V		
		X series	A series	
With NTC, solder pins	 <p>V: M636, X: M669 Solder Pins</p>	50 A		
		75 A		
		100 A	6MBI100XAE120-50	
	 <p>V: M633, X: M668 Solder Pins</p>	100 A	6MBI100XBA120-50	6MBI100ABA120-50 ^{*3}
		150 A	6MBI150XBA120-50	6MBI150ABA120-50 ^{*3}
		180 A		
200 A		6MBI200XBA120-50 6MBI200XBE120-50	6MBI200ABA120-50 ^{*3}	
250 A		6MBI250XRBE120-50	6MBI250ABA120-50 ^{*3}	
With NTC, press fit pins	 <p>M647 Press fit Pins</p>	50 A		
		75 A		
		100 A	6MBI100XWE120-50	
	 <p>M648 Press fit Pins</p>	100 A	6MBI100XXA120-50	
		150 A	6MBI150XXA120-50	
		180 A		
	200 A	6MBI200XXA120-50 6MBI200XXE120-50		
	250 A	6MBI250XRXE120-50 ^{*2}		

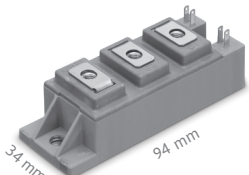
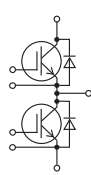
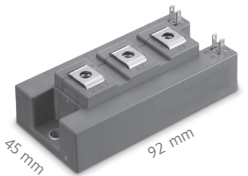
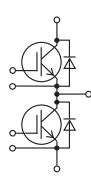
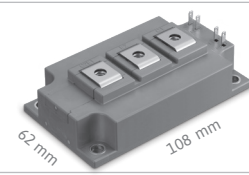
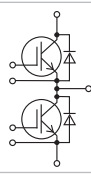
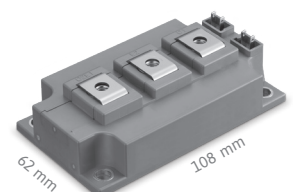
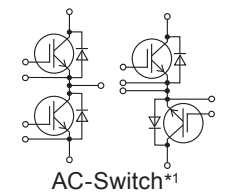
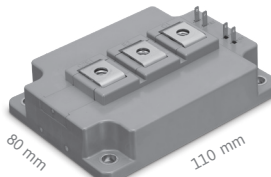
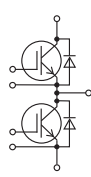
Note: EconoPACK™ is registered trademark of Infineon Technologies AG, Germany.

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

^{*2}) RC-IGBT

^{*3}) Under development



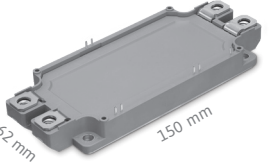
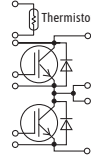
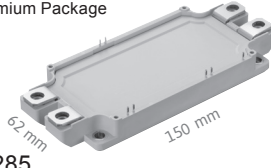
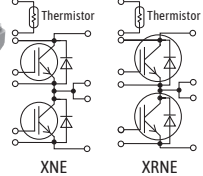
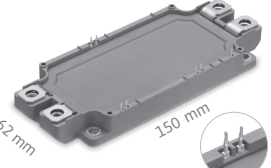
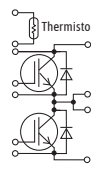
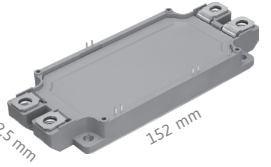
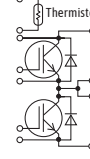
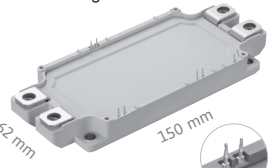
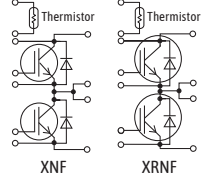
Standard 2-Pack



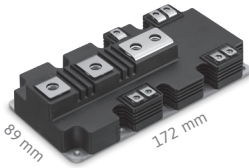
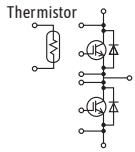
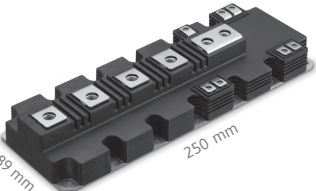
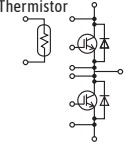
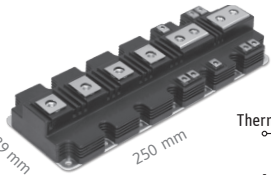
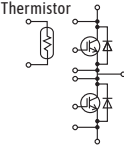
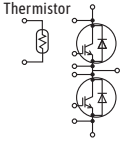
	I_c	650 V		1200 V		1700 V	
		X series	X series	X series	A series	X series	A series
M263  34 mm 94 mm 	75 A					2MBI75XAA170-50	
	100 A			2MBI100XAA120-50		2MBI100XAA170-50	
	150 A	2MBI150XAA065-50		2MBI150XAA120-50		2MBI150XAA170-50	
	200 A	2MBI200XAA065-50		2MBI200XAA120-50			
M274  45 mm 92 mm 	150 A						
	200 A			2MBI200XBE120-50			
	300 A	2MBI300XBE065-50		2MBI300XBE120-50			
	400 A	2MBI400XBE065-50					
M275  62 mm 108 mm 	300 A						
	400 A	2MBI400XDE065-50		2MBI400XDE120-50			
	600 A	2MBI600XDE065-50		2MBI600XDE120-50			
M276  62 mm 108 mm  AC-Switch*1	150 A					2MBI150XHA170-50	2MBI150AHA170-50*
	200 A					2MBI200XHA170-50	2MBI200AHA170-50*
	300 A			2MBI300XHA120-50	2MBI300AHA120-50*	2MBI300XHA170-50	2MBI300AHA170-50*
	400 A					2MBI400XHA170-50	2MBI400AHA170-50*
	450 A			2MBI450XHA120-50	2MBI450AHA120-50*		
	450 A			2MBI450XHA120-81*			
	600 A			2MBI600XHA120-50	2MBI600AHA120-50*		2MBI600AHA170-50*
	600 A			2MBI600XHA120-81*			
	800 A				2MBI800AHA120-50*		
900 A				2MBI900AHA120-50*			
M277  80 mm 110 mm 	300 A					2MBI300XEE170-50	
	400 A					2MBI400XEE170-50	
	450 A			2MBI450XEE120-50			
	600 A	2MBI600XEE065-50		2MBI600XEE120-50			

* Under development

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

Standard 2-Pack

		1200 V		1700 V		
		I_c	X series 	A series	X series 	A series
With NTC, solder pins	 62 mm 150 mm  M254	225 A	2MBI225XNA120-50 2MBI225XNA120-81*	2MBI225ANA120-50 ³	2MBI225XNA170-50	2MBI225ANA120-50 ³
		300 A	2MBI300XNA120-50	2MBI300ANA120-50 ³	2MBI300XNA170-50	2MBI300ANA120-50 ³
		450 A	2MBI450XNA120-50	2MBI450ANA120-50 ³	2MBI450XNA170-50	2MBI450ANA120-50 ³
		550 A				
		600 A	2MBI600XNG120-50* ¹		2MBI600XNG170-50* ¹	
	 62 mm 150 mm  XNE XRNE M285	600 A	2MBI600XNE120-50		2MBI600XNE170-50	
		800 A	2MBI800XNE120-50		2MBI800XRNE170-50* ²	
		1000 A	2MBI1000XRNE120-50* ²			
With NTC, press fit pins	 62 mm 150 mm  M282	225 A	2MBI225XNB120-50		2MBI225XNB170-50	
		300 A	2MBI300XNB120-50 2MBI300XNB120-81*		2MBI300XNB170-50	
		450 A	2MBI450XNB120-50 2MBI450XNB120-81*		2MBI450XNB170-50	
		550 A				
		600 A	2MBI600XNH120-50* ¹ 2MBI600XNH120-81* ¹		2MBI600XNH170-50* ¹	
		 62.5 mm 152 mm  N207	600 A		2MBI600ANP120-50 ³	
	750 A					2MBI750ANP170-50 ³
	800 A			2MBI800ANP120-50 ³		
	900 A					2MBI900ANP170-50 ³
	 62 mm 150 mm  XNF XRNF M286	600 A	2MBI600XNF120-50		2MBI600XNF170-50	
		800 A	2MBI800XNF120-50		2MBI800XRNF170-50* ²	
		1000 A	2MBI1000XRNF120-50* ² 2MBI1000XRNF120-81* ²			

		1200 V	1700 V
		X series	X series
			
		I_c	
2-Pack	 <p>89 mm 172 mm</p> <p>Thermistor </p> <p>M271</p>	600 A	
		650 A	2MBI650XXA170-50
		900 A	2MBI900XXA120P-50 2MBI900XXA120P-81*1
		1200 A	2MBI1200XXE120P-50
	 <p>89 mm 250 mm</p> <p>Thermistor </p> <p>M272</p>	1000 A	2MBI1000XXB170-50
		1400 A	2MBI1400XXB120P-50 2MBI1400XXB120P-81*1
		1800 A	2MBI1800XXF120P-50
		1800 A	2MBI1800XXG120P-50 2MBI1800XXG120P-81*1
	 <p>89 mm 250 mm</p> <p>Thermistor  Thermistor </p> <p>XR XG</p> <p>M291</p>	2400 A	2MBI2400XR XG120-50*2 2MBI2400XR XG120-81*2
			2MBI2400XR XG170-50*1,2

*1) Under development

*2) RC-IGBT

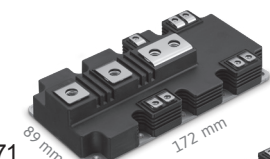
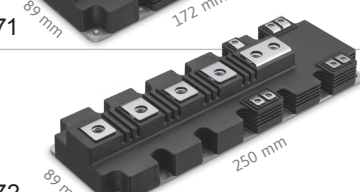
Note 1: The products with 'EA' on this page have large FWD.

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_{cat} 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.

		1200 V		1700 V		
		V series		V series		
		Low side configuration	High side configuration	Low side configuration	High side configuration	
Chopper	 M271 89 mm, 172 mm	650 A			1MBI650VXA-170EL-50	1MBI650VXA-170EH-50
		900 A	1MBI900VXA-120PD-50* ¹ 1MBI900VXA-120PD-54* ²	1MBI900VXA-120PC-50* ¹ 1MBI900VXA-120PC-54* ²		1MBI650VXA-170EL-54* ² 1MBI650VXA-170EH-54* ²
	 M272 89 mm, 250 mm	1000 A			1MBI1000VXB-170EL-50	1MBI1000VXB-170EH-50
		1400 A	1MBI1400VXB-120PL-54* ²	1MBI1400VXB-120PH-54* ²	1MBI1000VXB-170EL-54* ² 1MBI1400VXB-170PL-50	1MBI1000VXB-170EH-54* ² 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 .

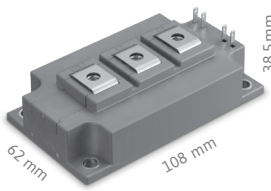
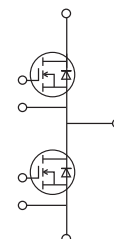
Note 1: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.
 Note 2: The range of modules with pre-applied TIM (Thermal-Interface-Material) is being continually expanded.

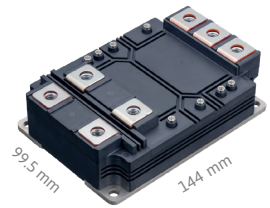
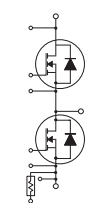

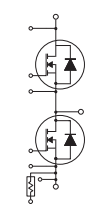
High Power next Core (HPnC)

		1200 V	1700 V		2300 V	3300 V	
		A series	X series	A series	X series	X series	
2-Pack	For traction use  M297* ^{1,2} 99.5 mm, 144 mm	450 A				2MBI450XYF330-50* ¹	
		600 A				2MBI600XYF330-50* ¹	
		1200 A		2MBI1200XYF170-50* ¹			
		1500 A		2MBI1500XYF170-50* ¹			
				2MBI1800AZF170-50* ¹			
For industrial use  M298* ³ 99.5 mm, 144 mm	1200 A		2MBI1200XZF170-50		2MBI1200XZF230-50		
	1500 A		2MBI1500XZF170-50		2MBI1200XZG230-50* ⁴		
	1800 A	2MBI1800AZF120-50* ¹	2MBI1800XZF170-50	2MBI1800AZF170-50* ¹			

*1) Under development
 *2) Traction variant with MgSiC baseplate
 *3) Industrial variant with Cu baseplate
 4) $V_{isol} = 6$ kV

Silicon Carbide (SiC) Modules

			1200V	1700V	2000V
		I_D	SiC MOSFET	SiC MOSFET	SiC MOSFET
62mm STD 2 in 1	 	200 A		2CI200HHE170-50*	
		300 A	2CI300HHE120-50*	2CI300HHE170-50*	
		400 A		2CI400HHE170-50*	
		450 A	2CI450HHE120-50*		2CI450HHE200-50*
		600 A	2CI600HHE120-50*	2CI600HHE170-50*	
		800 A	2CI800HHE120-50*		
		M295			

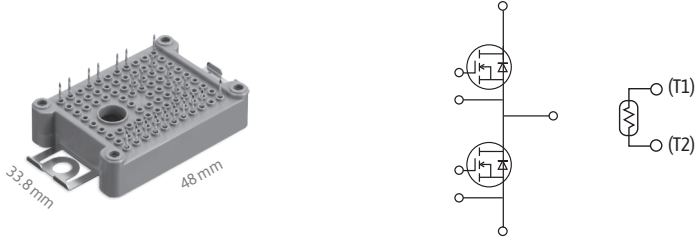
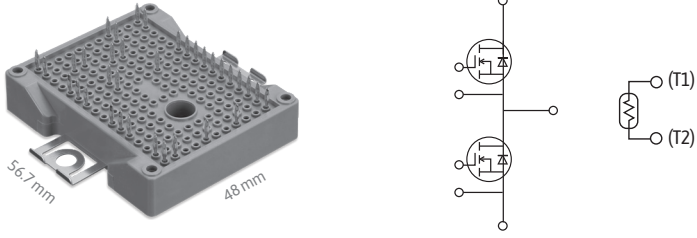
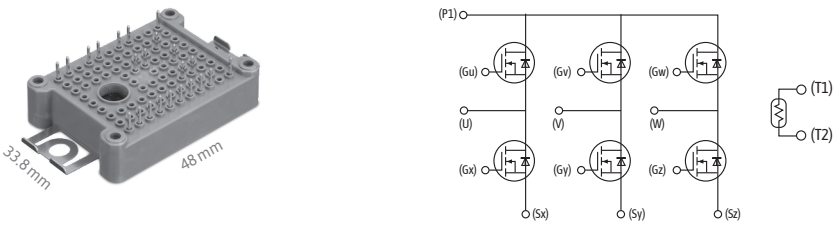
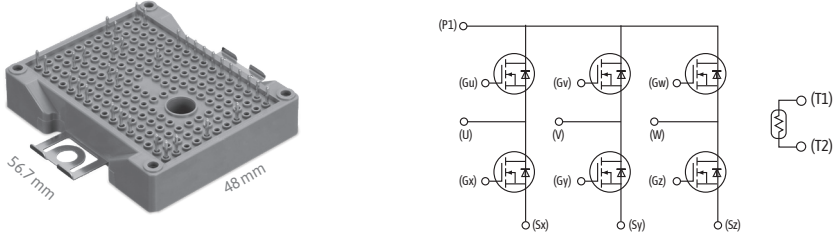
			1700 V	2300 V	3300 V
		I_D	SiC MOSFET	SiC MOSFET	SiC MOSFET
2-Pack	For traction use	 	850 A		2CI850HYS330-50* ¹
			1000 A	2CI1000HYS170-50* ¹	
			1500 A	2CI1500HYS170-50* ¹	
			1800 A	2CI1800HYS170-50* ¹	
			M297* ^{1,2}		
2-Pack	For industrial use	 	1000 A	2CI1000HZR170-50* ¹	
			1200 A		2CI1200HZR230-50* ¹
			1500 A	2CI1500HZR170-50* ¹	
			1800 A	2CI1800HZR170-50* ¹	
			N212* ^{1,3}		

*1) Under development

*2) Traction variant with MgSiC baseplate

*3) Industrial variant with Cu baseplate

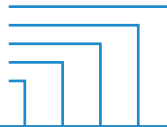
Silicon Carbide (SiC) Modules

			1200V	
			I_D	SiC MOSFET
2-Pack	M293		50 A	2CI50HKC120-50 ^{*1}
			100 A	2CI100HKC120-50 ^{*1}
2-Pack	M294		100 A	2CI100HKD120-50 ^{*1}
			150 A	2CI150HKD120-50 ^{*1}
			200 A	2CI200HKD120-50 ^{*1}
6-Pack	M679		50 A	6CI50HKC120-50 ^{*1}
	M692		50 A	6CI50HKD120-50 ^{*1}
			75 A	6CI75HKD120-50 ^{*1}
			100 A	6CI100HKD120-50 ^{*1}

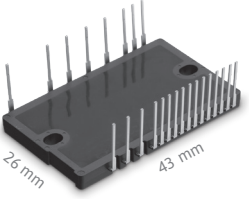

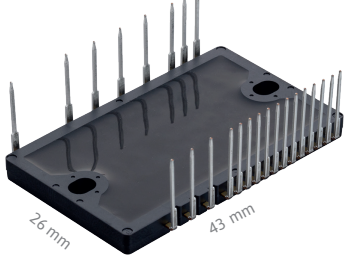
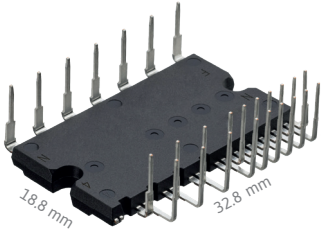
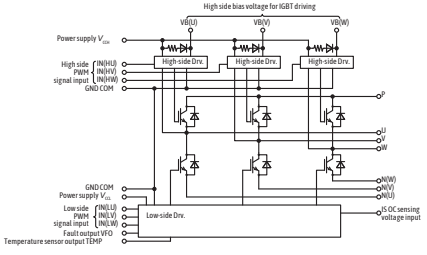
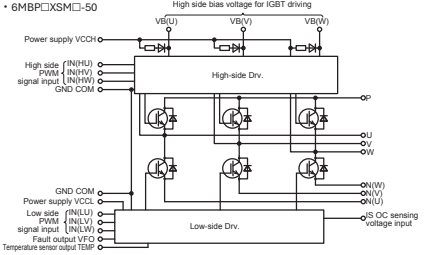
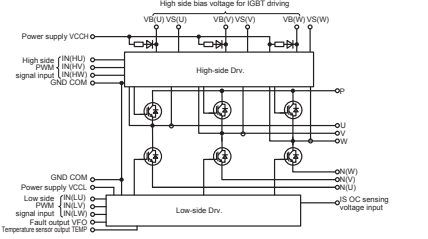
Small IPM (Intelligent Power Modules)

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)



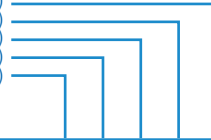
Small IPM with High Voltage Driver-Ic without Brake-Chopper

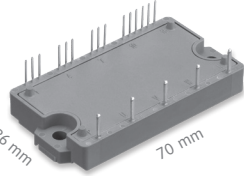
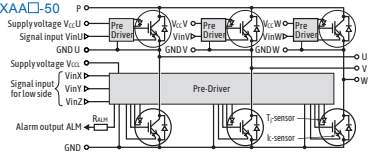
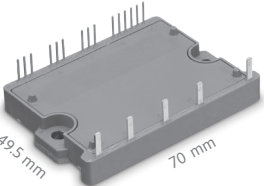
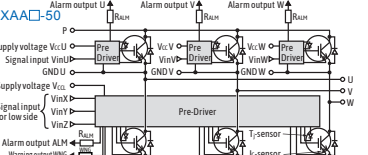
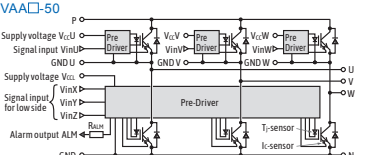
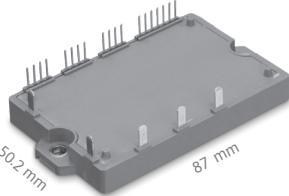
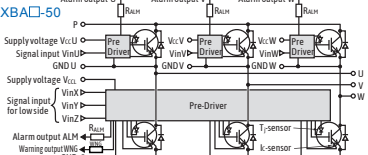
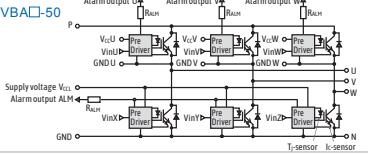
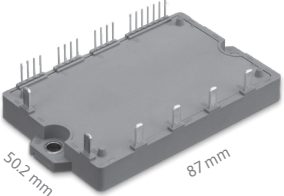
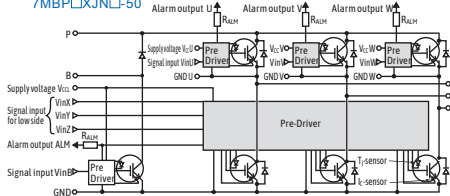
						600 V	
						I_c	X series
 <p>P633A</p>  <p>P642</p>  <p>P633C</p>  <p>P641</p>			•	•	•	15 A	6MBP15XSD060-50
						20 A	6MBP20XSD060-50
						30 A	6MBP30XSD060-50
						35 A	6MBP35XSD060-50
						15 A	6MBP15XSF060-50
						20 A	6MBP20XSF060-50
						30 A	6MBP30XSF060-50
						35 A	6MBP35XSF060-50
						50 A	6MBP50XTA065-50
						75 A	6MBP75XTA065-50
						50 A	6MBP50XTC065-50
						75 A	6MBP75XTC065-50
	<ul style="list-style-type: none"> • 6MBPCXSLC-50 • 6MBPCXSMC-50 		•	•	•	15 A	6MBP15XSJ065-50
						20 A	6MBP20XSJ065-50
						30 A	6MBP30XSJ065-50
					35 A	6MBP35XSJ065-50	
					15 A	6MBP15XSK065-50	
					20 A	6MBP20XSK065-50	
					30 A	6MBP30XSK065-50	
					35 A	6MBP35XSK065-50	
<ul style="list-style-type: none"> • 6MBPCXRVC-50 		•	•	•	20 A	6MBP20XRVF065-50	
					30 A	6MBP30XRVF065-50	
					40 A	6MBP0XRVF065-50	

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)



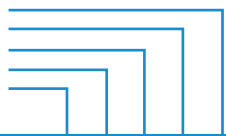
		650 V	1200 V
		X series	X series
Without Brake-Chopper	 <p>P639 36 mm 70 mm</p> <p>6MBP□XAA□-50</p> 	10 A	6MBP10XRHA120-50
	 <p>P629 49.5 mm 70 mm</p> <p>6MBP□XAA□-50</p>  <p>6MBP□VAA□-50</p> 	20 A	6MBP20XRHA065-50
		30 A	6MBP30XRHA065-50
		25 A	6MBP25XAA120-50
		30 A	6MBP35XAA120-50
	 <p>P626 50.2 mm 87 mm</p> <p>6MBP□XBA□-50</p>  <p>6MBP□VBA□-50</p> 	50 A	6MBP50XAA065-50
75 A		6MBP75XAA065-50	
25 A		6MBP25XBA120-50	
35 A		6MBP35XBA120-50	
50 A		6MBP50XBA120-50	
75 A		6MBP75XBA065-50	
With Brake-Chopper	 <p>P644 50.2 mm 87 mm</p> <p>7MBP□XJN□-50</p> 	100 A	6MBP100XBA065-50
		25 A	7MBP25XJN120-50
		35 A	7MBP35XJN120-50
		50 A	7MBP50XJN065-50
	75 A	7MBP75XJN065-50	

Note: The products with 'XJN' 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)



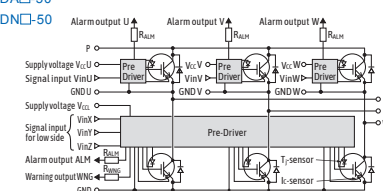
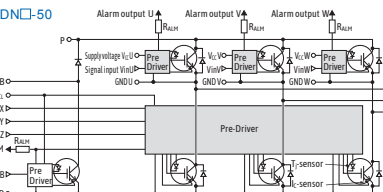


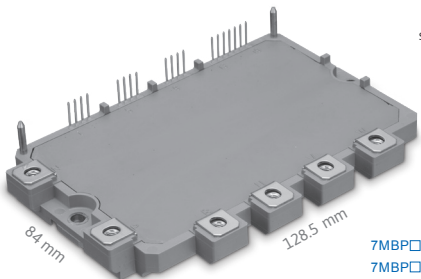
		650V		1200V		
		X series		X series		
		Ic				
Without Brake-Chopper	 	25A				
		35A				
		50A		6MBP50XFN120-50		
		75A				
		100A	6MBP100XFN065-50			
With Brake-Chopper	 	25A				
		35A				
		50A		7MBP50XFN120-50		
		75A				
		100A	7MBP100XFN065-50			
		25A				
		35A				
		50A				
		75A				
		100A				
Without Brake-Chopper	 	25A				
		35A				
		50A		6MBP50XGN120-50		
		75A		6MBP75XGN120-50		
		100A	6MBP100XGN 065-50			
	150A	6MBP150XGN065-50				

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)

		650 V	1200 V	
		X series 	X series 	
		I_c		
Without Brake-Chopper	<p>6MBP□XDA□-50 6MBP□XDN□-50</p> 	25 A		
		35 A		
		50 A	6MBP50XDA120-50	
		75 A	6MBP75XDA120-50 6MBP75XDN120-50	
		100 A	6MBP100XDA065-50 6MBP100XDN120-50	
		150 A	6MBP150XDA065-50 6MBP150XDN120-50	
		200 A	6MBP200XDN065-50	
		250 A	6MBP250XDN065-50	
	With Brake-Chopper	<p>7MBP□XDA□-50 7MBP□XDN□-50</p> 	25 A	
			35 A	
		50 A	7MBP50XDA120-50	
		75 A	7MBP75XDA120-50 7MBP75XDN120-50	
		100 A	7MBP100XDA065-50 7MBP100XDN120-50	
		150 A	7MBP150XDA065-50 7MBP150XDN120-50	
		200 A	7MBP200XDN065-50	
		250 A	7MBP250XDN065-50	



P630

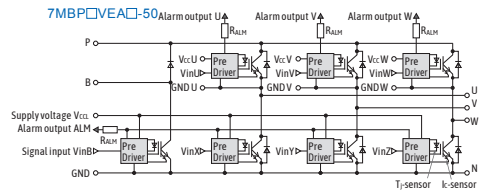
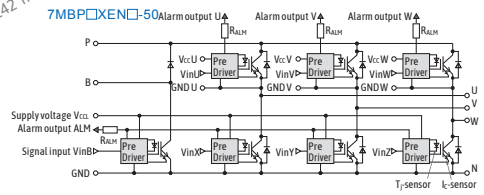
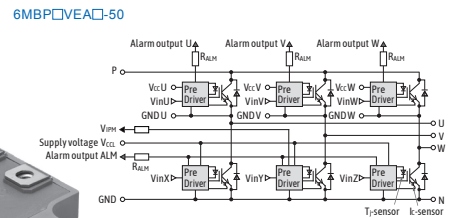
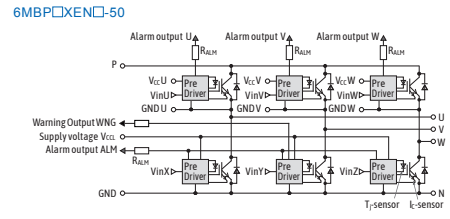
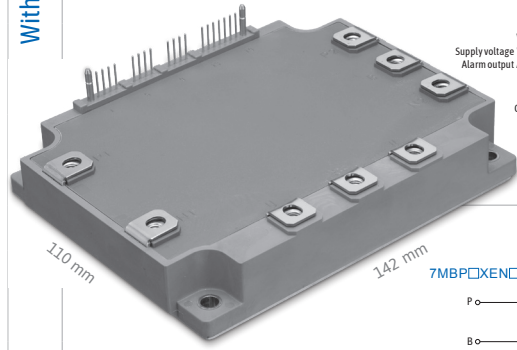
Note: The products with 'VDN'/'XDN' on this page have high heat dissipation characteristics.

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)

Without Brake-Chopper

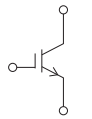

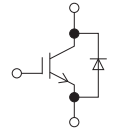

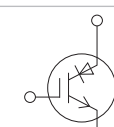

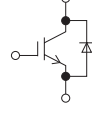

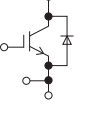

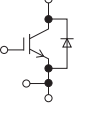
With Brake-Chopper



I_C	650 V	
	X series	X series
100 A		6MBP100XEN120-50
150 A		6MBP150XEN120-50
200 A	6MBP200XEN065-50	6MBP200XEN120-50
300 A	6MBP300XEN065-50	6MBP300XEN120-50
400 A	6MBP450AEN065-50	
450 A		
100 A		7MBP100XEN120-50
150 A		7MBP150XEN120-50
200 A	7MBP200XEN065-50	7MBP200XEN120-50
300 A	7MBP300XEN065-50	7MBP300XEN120-50
400 A		
450 A	7MBP450XEN065-50	

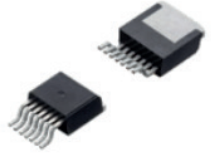
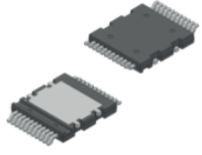
P631

Discrete IGBT

		600 V	650 V		1200 V			
		RB series	XS series	A series	XS series	A series		
TO-247 (Type:B)		30 A		FGW30XS65				
		40 A		FGW40XS65	F8W065040*	FGW40XS120	F8W120040*	
		50 A		FGW50XS65			F8SW120040*	
		75 A		FGW75XS65	F8W065075*	FGW75XS120	F8W120075*	
			15 A					
			25 A					
			30 A		FGW30XS65C			
			40 A		FGW40XS65C		FGW40XS120C	
			50 A		FGW50XS65D			
			75 A		FGW50XS65C	F8SW06550*		
		85 A	FGW85N60RB					
		100 A			F8SW065100*			
RB-IGBT								
TO-247Plus-3			100 A		F8WP065100*	FGWP100XS120C*	F8WP120100*	
			140 A			F8WP065140*	FGWP140XS120C*	F8SWP120100*
TO-247-4			40 A				F8Z120040*	
			50 A			F8Z065040*	F8Z120040*	
			75 A			F8SZ065050*		
					FGZ75XS65C	F8Z065075*	FGZ75XS120C	F8Z120075*
			100 A			F8SZ065075*		F8SZ120075*
TO-247Plus-4H			100 A				F8ZP120100*	
			140 A			F8SZ065100*	FGZP140XS120C*	F8SZP120100*
					F8ZP0650140*		F8ZP120140*	


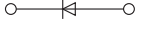




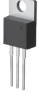




*) Under consideration

Discrete IGBT

		650 V	1200 V
		A series	A series
	I_c		
TO-263-7 	20 A	F8SBS065020*	
	30 A	F8SBS065030*	
	40 A	F8BS065040*	F8BS120040*
	50 A		F8SBS120040*
TSPAK-C 	20 A	F8SE065020*	
	30 A	F8SE065030*	
	40 A	F8E065040*	F8E120040*
	50 A	F8E065050*	F8SE120040*
	75 A	F8E065075*	

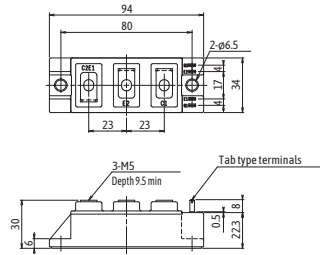
*) Under consideration

SiC-SBD

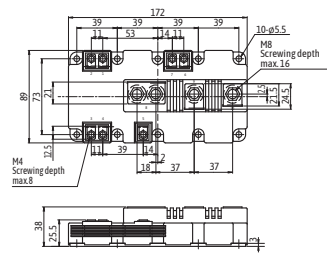
	 	I _c	650 V		1200 V	
			SiC-SBD 2G	SiC-SBD 1G	SiC-SBD 2G	SiC-SBD 1G
T-Pack(s)		10 A		FDCC10S65		
		20 A				
		25 A		FDCC25S65		
		20 A		FDCC20C65		
TO-220-2 (Type:A)		6 A	FDC2PT06S65			
		8 A	FDC2PT08S65			
		10 A	FDC2P10S65			
TO-220-2 (Type:B)		10 A		FDCP10S65		
		25 A		FDCP25S65		
TO-220		20 A		FDCP20C65		
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		FDCY20C65		
		36 A				FDCY36C120
		50 A		FDCY50C65		
TO-247-2		18 A				FDCW18T120
		20 A			FDC2WT20S120	
		40 A			FDC2WT40S120	

Package Outlines (in mm)

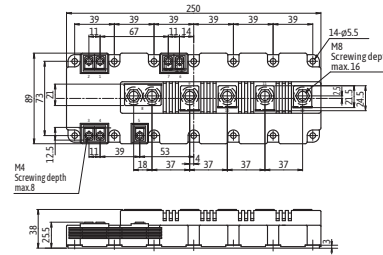
M263



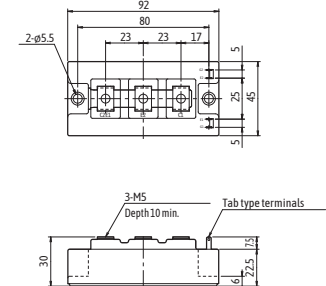
M271



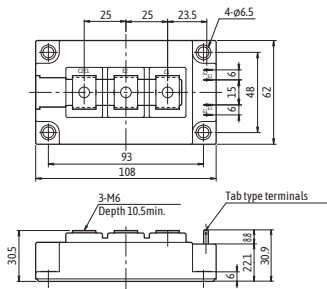
M272



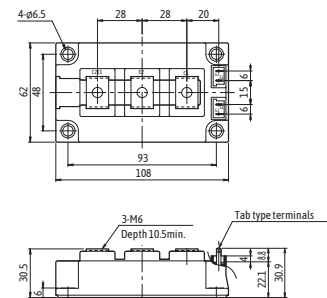
M274



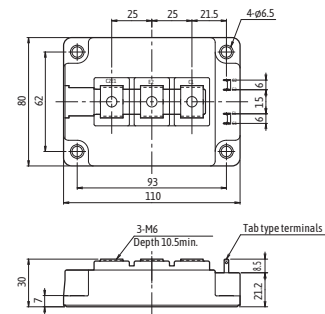
M275



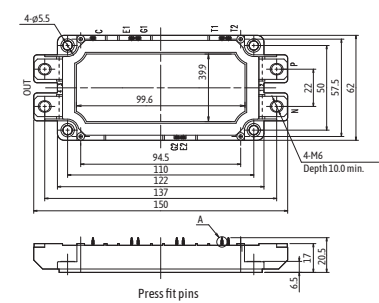
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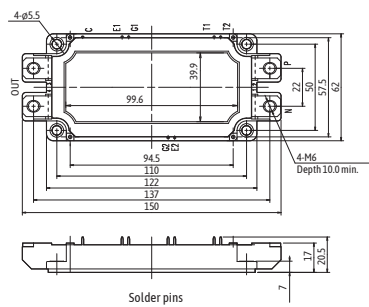
M277



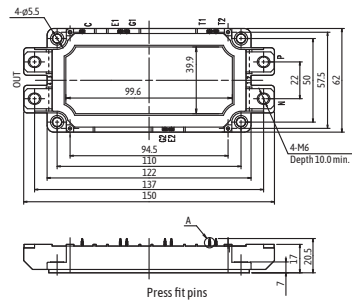
M282



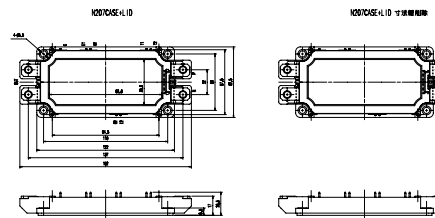
M285



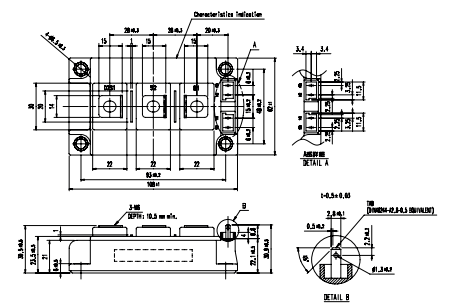
M286



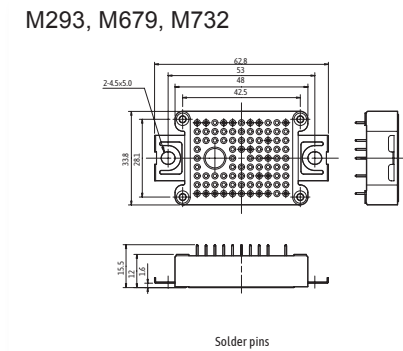
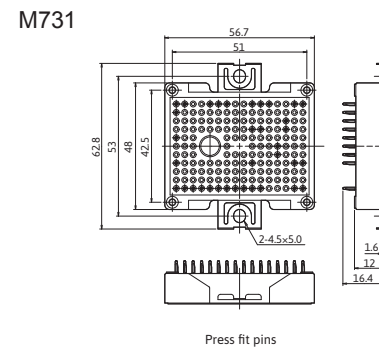
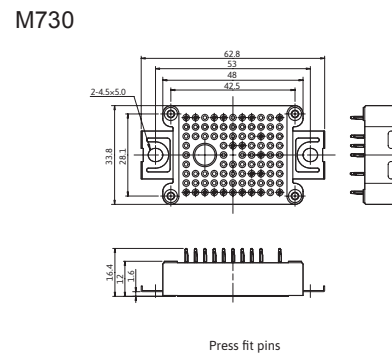
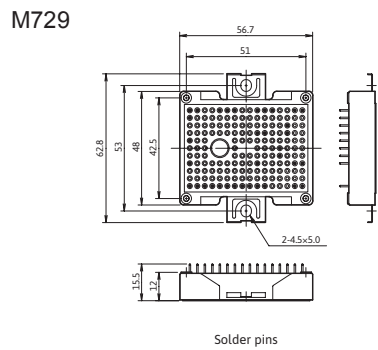
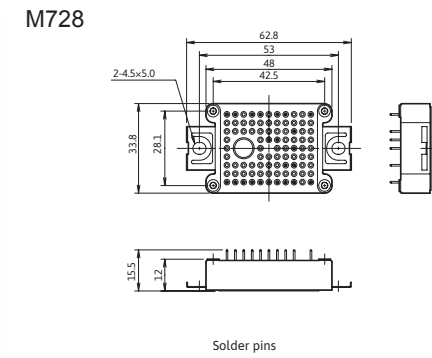
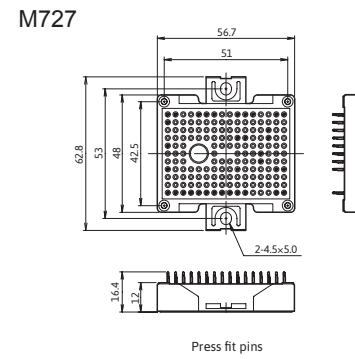
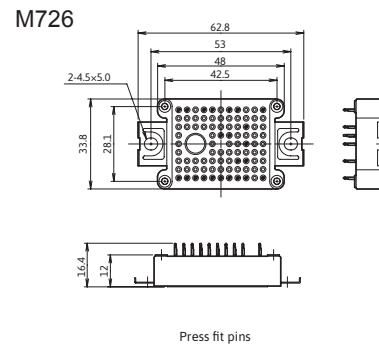
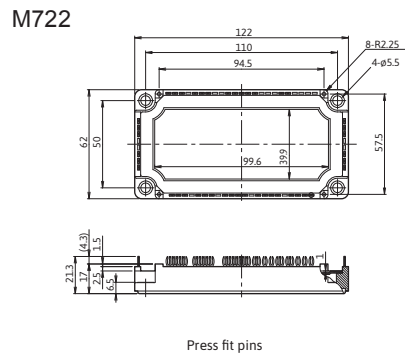
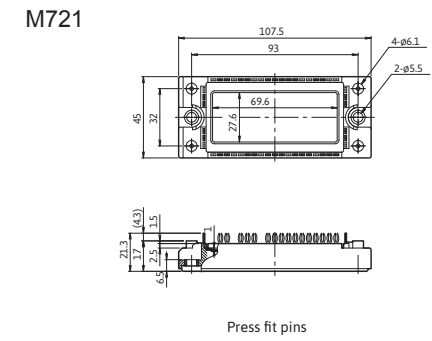
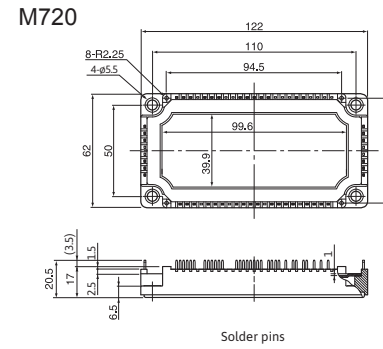
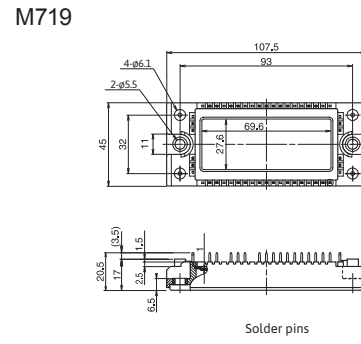
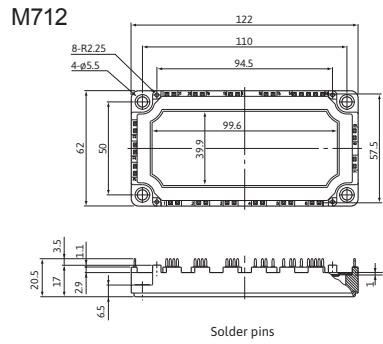
N207



M295

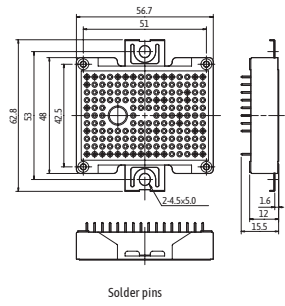


Package Outlines (in mm)



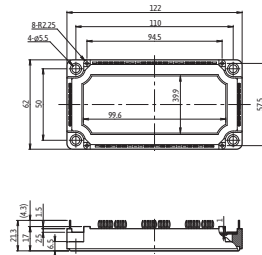
Package Outlines (in mm)

M294, M692, M733



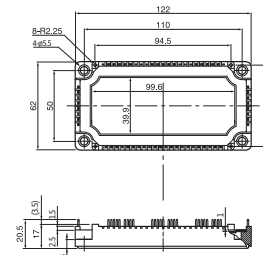
Solder pins

M1202



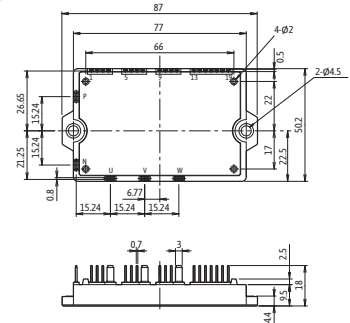
Press fit pins

M1203

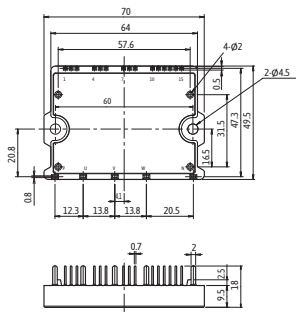


Press fit pins

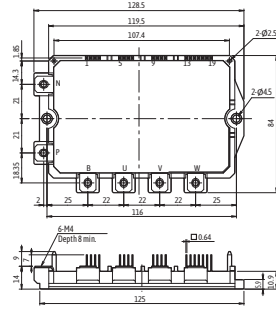
P626



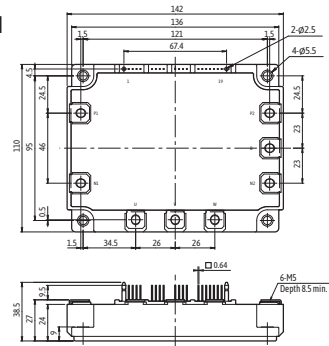
P629



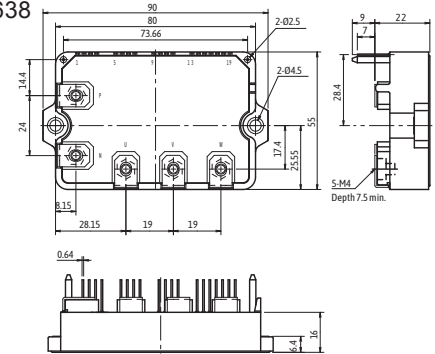
P630



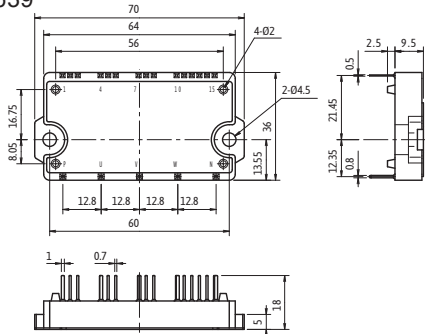
P631



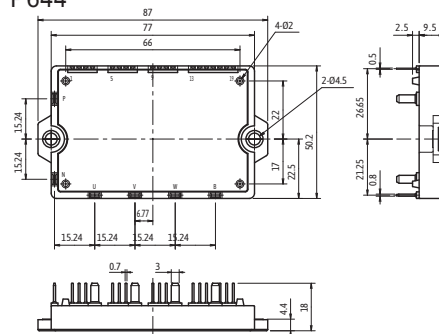
P638



P639

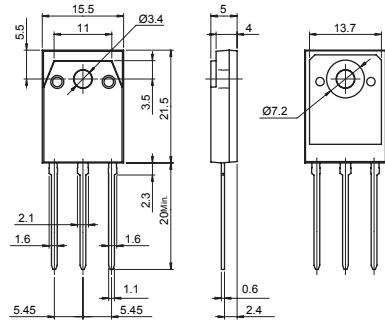


P644

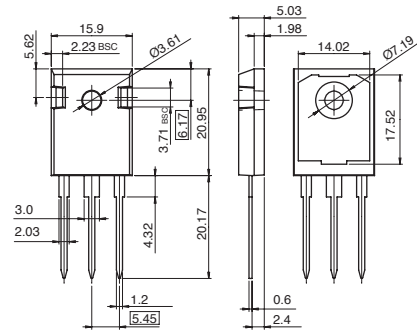


Package Outlines (in mm)

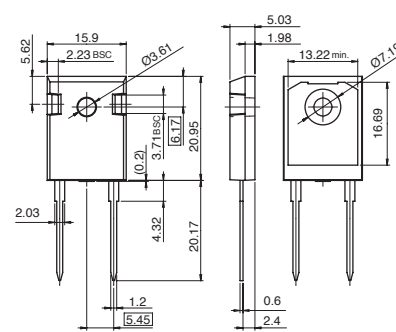
TO-247 (Type:A)



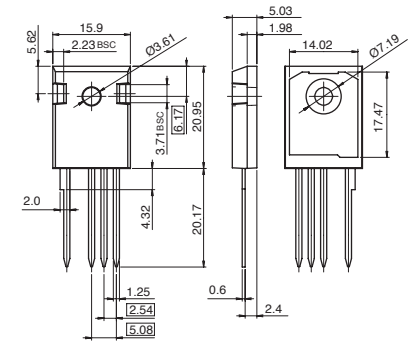
TO-247 (Type:B)



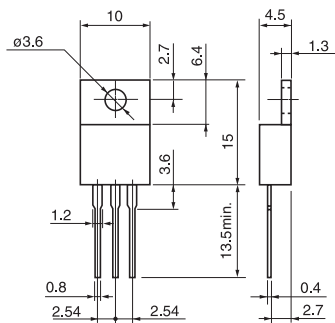
TO-247-2



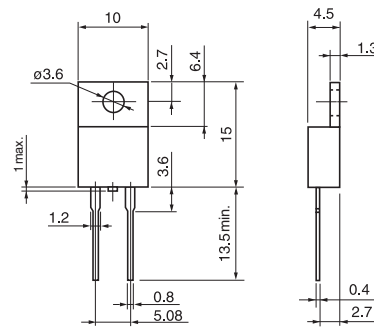
TO-247-4



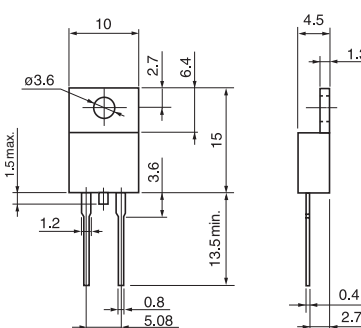
TO-220



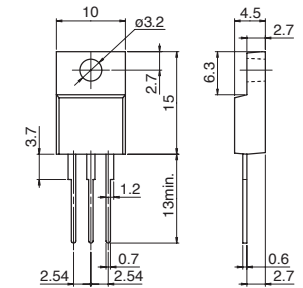
TO-220-2 (Type: A)



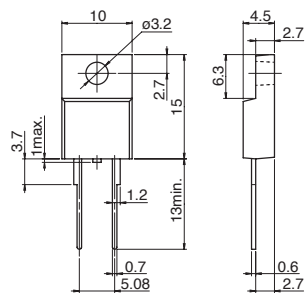
TO-220-2 (Type: B)



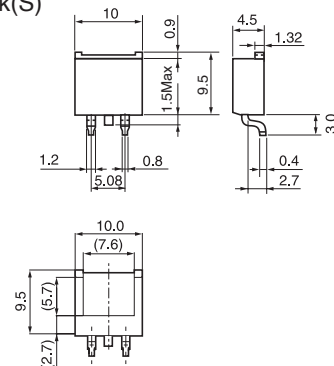
TO-220F



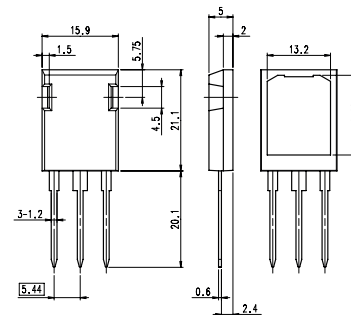
TO-220F-2



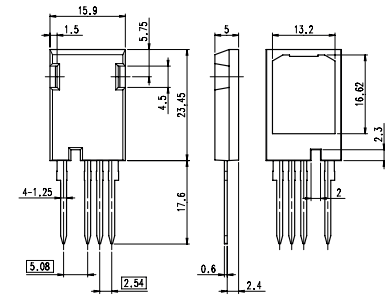
T-Pack(S)



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.

SUSTAINABLE DEVELOPMENT GOALS



Resolution of Social and Environmental Issues Creation of Customer Value

Corporate Philosophy

Management Policies

Fuji Electric Code of Conduct

SDGs to be Addressed through Fuji Electric's Companywide Activities

Priority SDGs to be Addressed through Energy and Environment Businesses



Goals that support business activities



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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