

FUJI Power Semiconductors

IGBT/SiC Devices Selection Guide



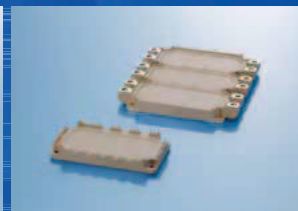
Small PIM

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PIM

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6-Pack

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Standard 2-Pack

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Standard 1-Pack/
Chopper

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High Power Module

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PrimePACK™

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T/I-type
NPC 3-level

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Small IPM

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IPM

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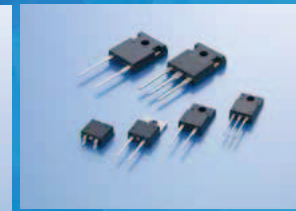
Hybrid SiC Module

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Discrete IGBT

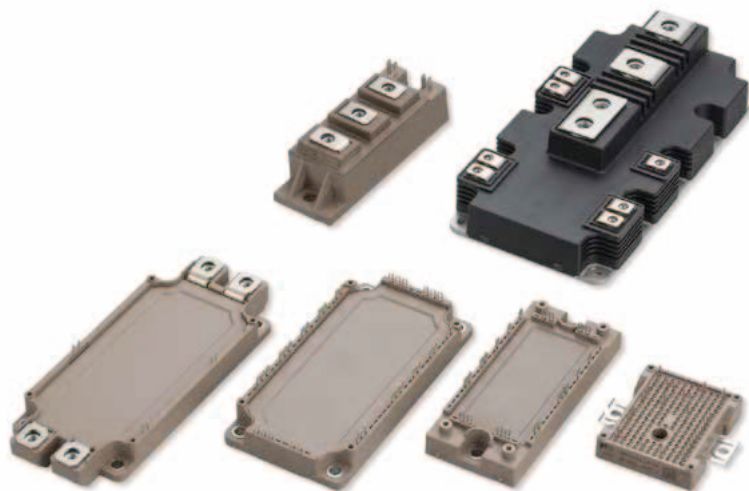
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Rectifier Diode /
SiC-SBD

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Features of IGBT Module X Series

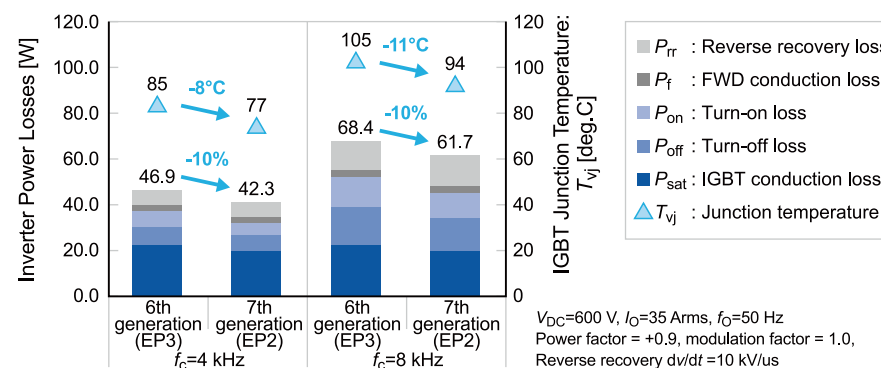


1. Low loss

The module has been optimized by thinning the thickness and miniaturizing the structure of the IGBT chip and diode chip that makes up the module. This reduces power losses during inverter operation compared with previous products (our 6th generation V series).



Reduces inverter loss by 10% and chip temperature by 11 °C
(Comparison with the 6th Generation V Series EP3 Package (75 A), at $f_c = 8$ kHz)

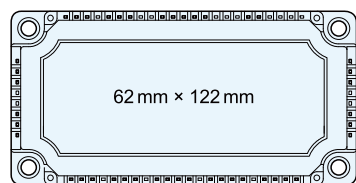


2. Miniaturization

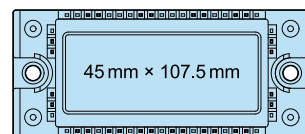
The application of the newly developed insulating board has improved the heat dissipation of the module. A smaller footprint of about 36% has been achieved by reducing power loss and suppressing heat generation compared with the previous product.

Application example)

36% reduction



EP3 75 A (6th Generation V Series)



EP2 75 A (7th Generation X Series)

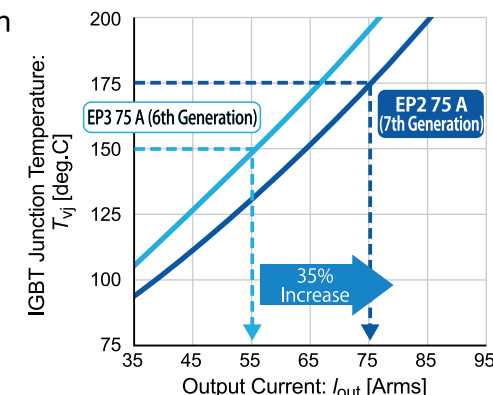
3. High-temperature operation

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)

Increased output by increasing $T_{vj(op)} = 175^\circ\text{C}$



Number of IGBT Switches			Internal Configuration						Max V_{CE} (V_{RRM})					Rated Current					
	Products Category	Page	IGBT Module			Discrete IGBT	Rectifier Diode	Discrete SiC-SBD	600V	650V	1200V	1700V	3300V	$\leq 50A$	$>50A \leq 150A$	$>150A \leq 300A$	$>300A \leq 600A$	$>600A \leq 1200A$	$>1200A$
			Standard Module	Power Integrated Module	Intelligent Power Module														
7	Small-PIM	8		✓					✓	✓	✓			✓					
	PIM EconoPIM™	9							✓	✓	✓			✓	✓				
		10		✓					✓	✓	✓			✓	✓				
6	6-Pack EconoPACK™	11							✓		✓			✓	✓	✓			
	EconoPACK™+	12	✓						✓		✓	✓		✓	✓		✓		
2	Standard 2-Pack	13							✓	✓	✓	✓			✓	✓	✓		
		14	✓						✓		✓	✓			✓	✓	✓	✓	
1	Standard 1-Pack	15	✓								✓	✓				✓	✓	✓	
	Chopper	15	✓						✓		✓	✓		✓	✓	✓			
1,2	High Speed Module	16	✓								✓	✓			✓	✓	✓		
	High Power Module	17,18	✓								✓	✓	✓				✓	✓	✓
	PrimePACK™	19,20	✓								✓	✓	✓				✓	✓	✓
4,12	T/I-type NPC 3-level	21	Reverse-Blocking IGBTs are integrated.						✓		✓	✓		✓	✓	✓	✓	✓	
6,7	IPM	22							✓		✓	✓		✓	✓				
		23			✓				✓		✓	✓		✓	✓	✓			
		24							✓		✓	✓		✓	✓	✓	✓		
1,2,6,7	Hybrid SiC Module	25,26	✓	✓					✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
1	Discrete IGBT	27				✓			✓	✓	✓	✓		✓	✓				
-	Rectifier Diode	28					✓		✓	✓	✓	✓		✓	✓				
-	SiC-SBD	28						✓	✓	✓	✓	✓		✓	✓				

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

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

IGBT Module Production Number

6 MB I 300 X □ □ - 120 - 50

- Number of IGBT switches: 6
- IGBT Module type: MB = Si-IGBT+ Si-Diode, MS = Si-IGBT+ SiC-SBD, S = SiC-SBD
- Internal Configuration: I = Standard Module, R = Power Integrated Module, P = Intelligent Power Module
- Rated current I_c [A]: 300
- IGBT Device Technology: X Series(7th Generation) / XR Series(7th Generation) / V Series(6th Generation) / VW Series(6th Generation) / U Series(5th Generation)
- Package Type: □ □
- Max V_{CE} : 060 = 600V, 065 = 650V, 120 = 1200V, 170 = 1700V, 330 = 3300V
- Suffix 50 to 99 indicates RoHS compliance

Discrete IGBT Production Number

F G W 50 N 65 W D

- Company Code: F
- Device Code: G = IGBT
- Package Type: W = TO-247-P2, Z = TO-247-4-P2
- Rated Current I_c [A]: 50
- Polarity: N = N-ch
- Series: W = High Speed W series, H = High Speed V series, V = V Series, RB = RB series
- Max V_{CE} : 60 = 600V, 65 = 650V, 120 = 1200V
- Diode Type: C or E = With Diode(Full rated), D = With Diode, Blank = Without Diode

F G W 40 XS 65 C

- Company Code: F
- Device Code: G = IGBT
- Package Type: W = TO-247-P2, Z = TO-247-P2-4
- Rated Current I_c [A]: 40
- Series: XS-XS series
- Max V_{CE} : 65 = 650V
- Diode Type: C = With Diode(Full rated), D = With Diode, Blank = Without Diode

Rectifier Diode Production Number

F DR W 50 C 65 L

- Company Code: F
- Device Code: DR = FWD
- Package Type: W = TO-247-P2
- Rated Current I_o [A]: 50
- Configuration: C = Dual (Cathode common), S or T = Single
- Max V_{RRM} : 60 = 600V, 65 = 650V, 120 = 1200V
- Series: L = Ultra Fast Recovery, J = Soft/Fast Recovery

SiC Schottky-Barrier Diode Production Number

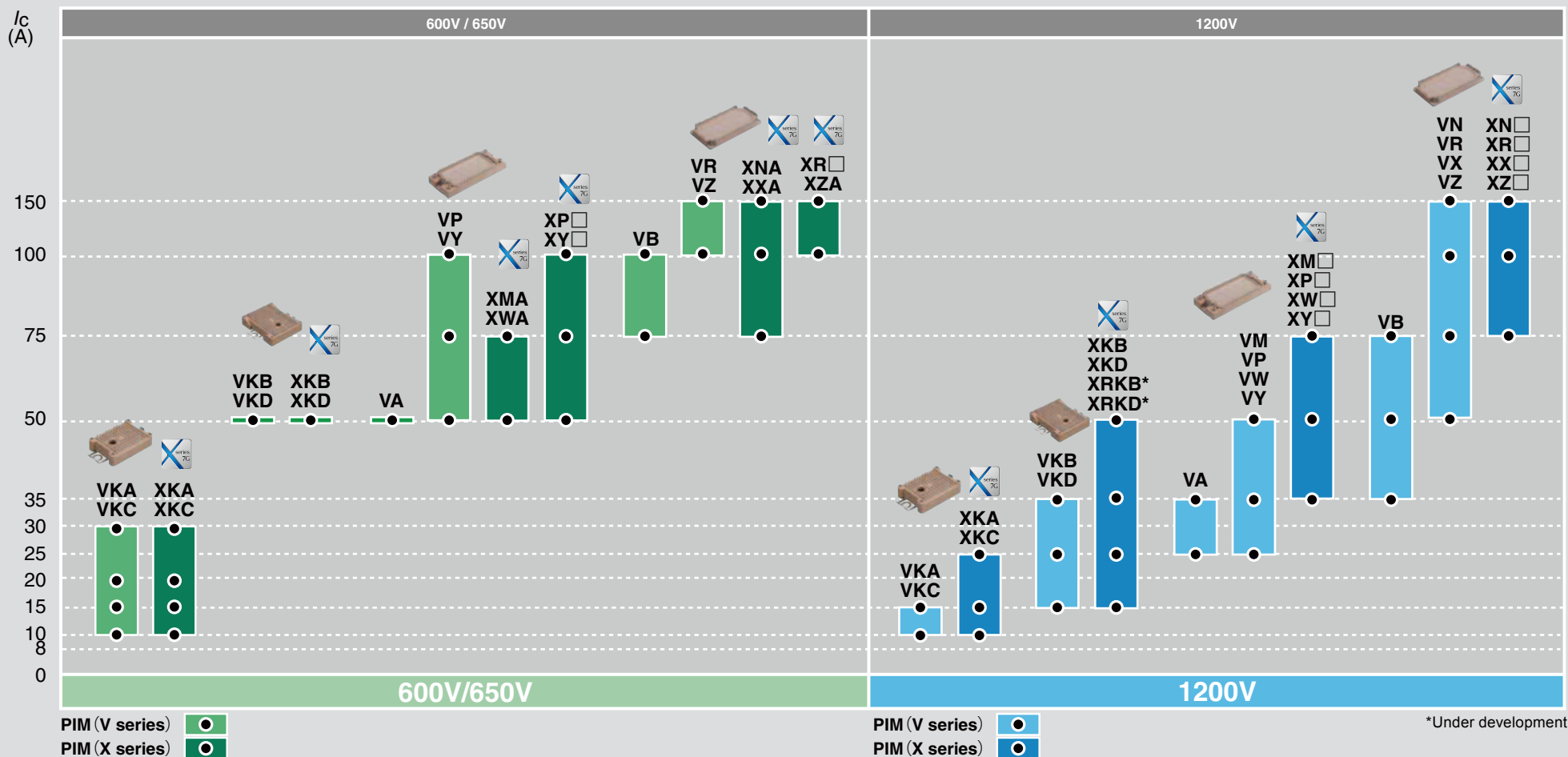
F DC P 10 S 65

- Company Code: F
- Device Code: DC = SiC-SBD
- Package Type: A = TO-220F, C = T-Pack(s), P = TO-220, W = TO-247-P2
- Rated Current I_o [A]: 10
- Configuration: C = Dual (Cathode common), S or T = Single
- Max V_{RRM} : 65 = 650V, 120 = 1200V

PIM (Power Integrated Modules) Products Map

7MBR	Ic	IGBT series & Package type						
		V series		X series				
	Solder pins	Press fit pins	Solder pins	Press fit pins	Size	Page		
	VKC	VKA	XKC	XKA	33.8×62.8mm	8	EconoPIM™	
	VKD	VKB	XKD, XRKD	XKB, XRK□	56.7×62.8mm	8		
VA, VM, VP	VW, VY	XM□, XP□	XW□, XY□	45×107.5mm	9,10			
VB, VN, VR	VX, VZ	XN□, XR□	XX□, XZ□	62×122mm	9,10			

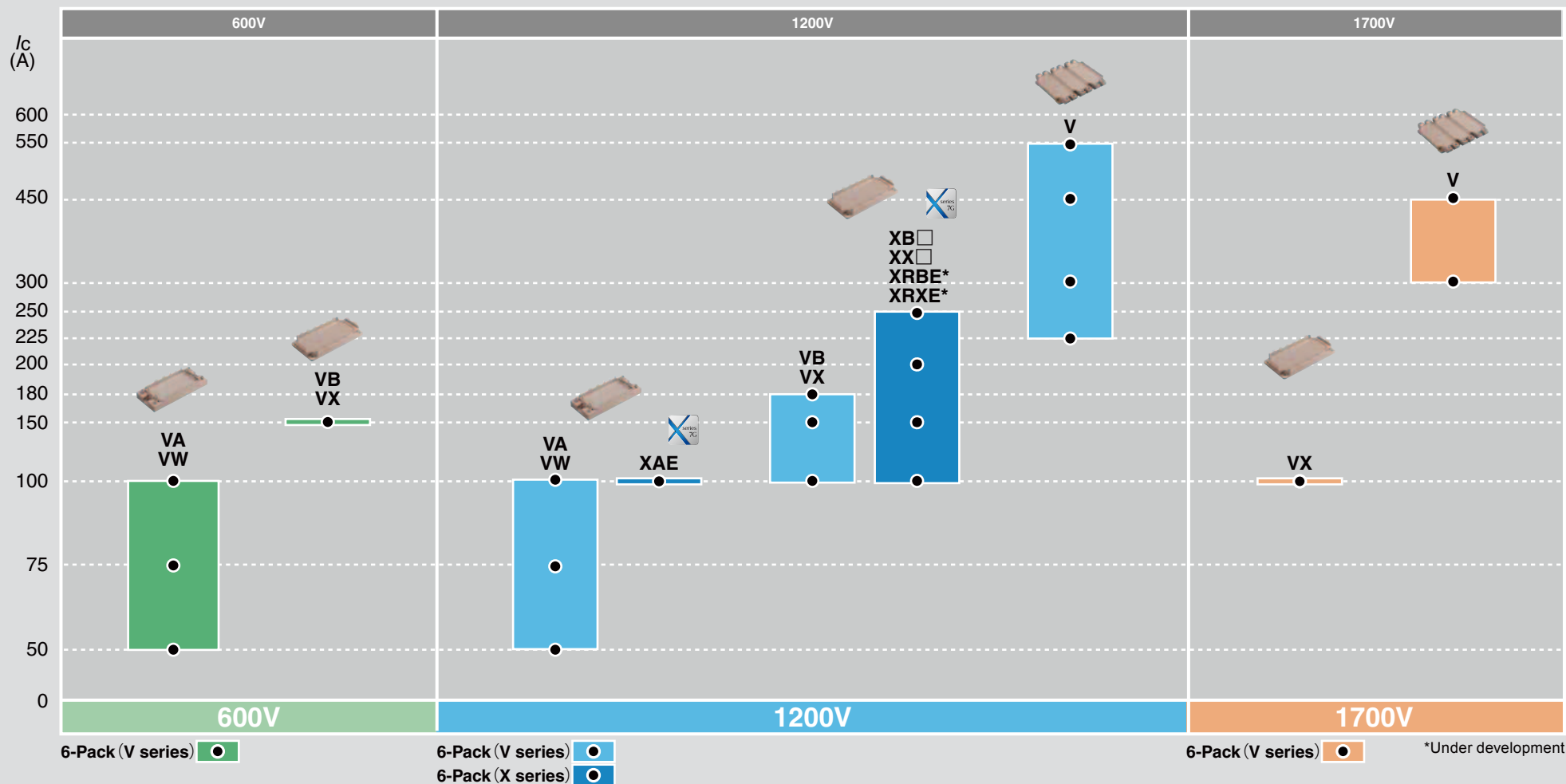
Note:
EconoPIM™ is registered trademark of
Infineon Technologies AG, Germany.



6-Pack Products Map

6MBI	Ic	IGBT series & Package type						EconoPACK™
	V series		X series					
	Solder pins	Press fit pins	Solder pins	Press fit pins	Size	Page		
	VA	VW	XAE		45×107.5mm	11,12		
	VB	VX	XB□, XRBE	XX□, XRXE	62×122mm	11,12		
	V				150×162mm	12	EconoPACK™+	

Note:
EconoPACK™ and EconoPACK™+ are
registered trademark of Infineon
Technologies AG, Germany.



2-Pack Products Map

2MBI	Ic	IGBT series & Package type		Page	
		V series	X series		
		VA	XAA	34×94mm	13
		VB	XBE	45×92mm	13
		VD	XDE	62×108mm	13
		VE	XEE	80×110mm	13
		VH	XHA	62×108mm	13
		VJ, VN, VX	XN□, XRN□	62×150mm	14
		-	XUF, XVF	100×140mm	18
		VG, VT	-	140×130mm	17
		VXA	XXA, XXE	89×172mm	19
		VXB	XXB, XXF, XXG, XRXF	89×250mm	19

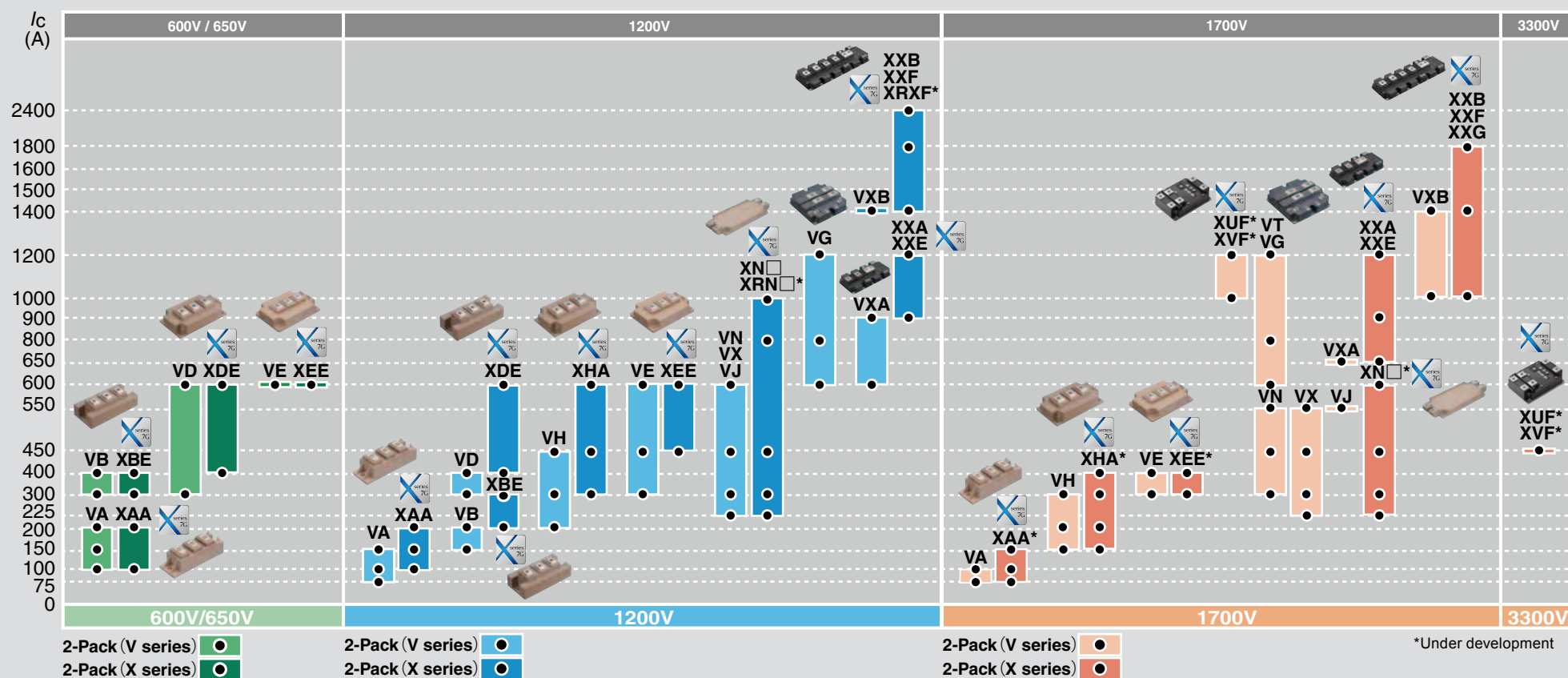
Standard Pack

HPnC

High Power Module

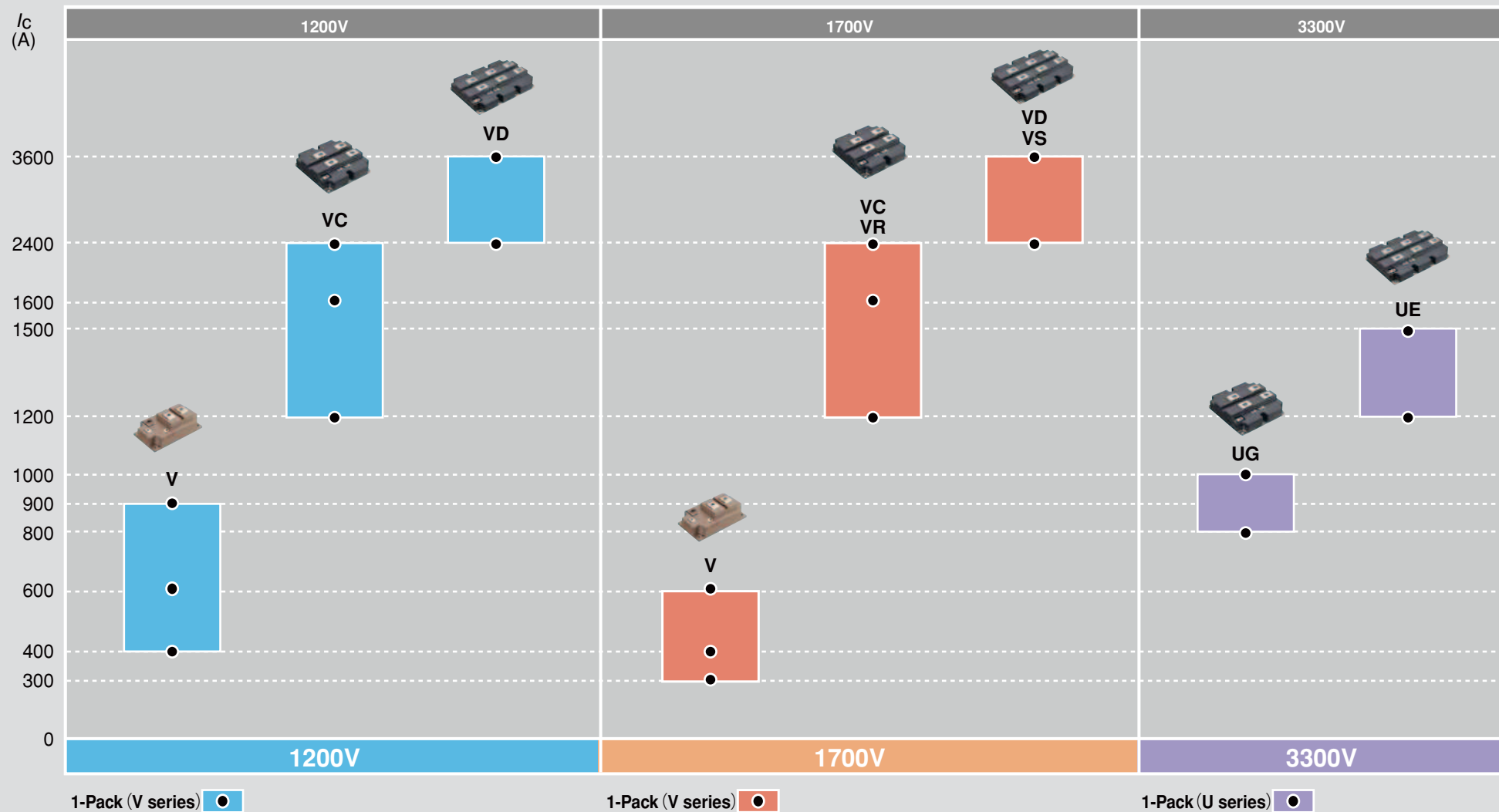
PrimePACK™

PrimePACK™ is registered trademark of Infineon Technologies AG, Germany



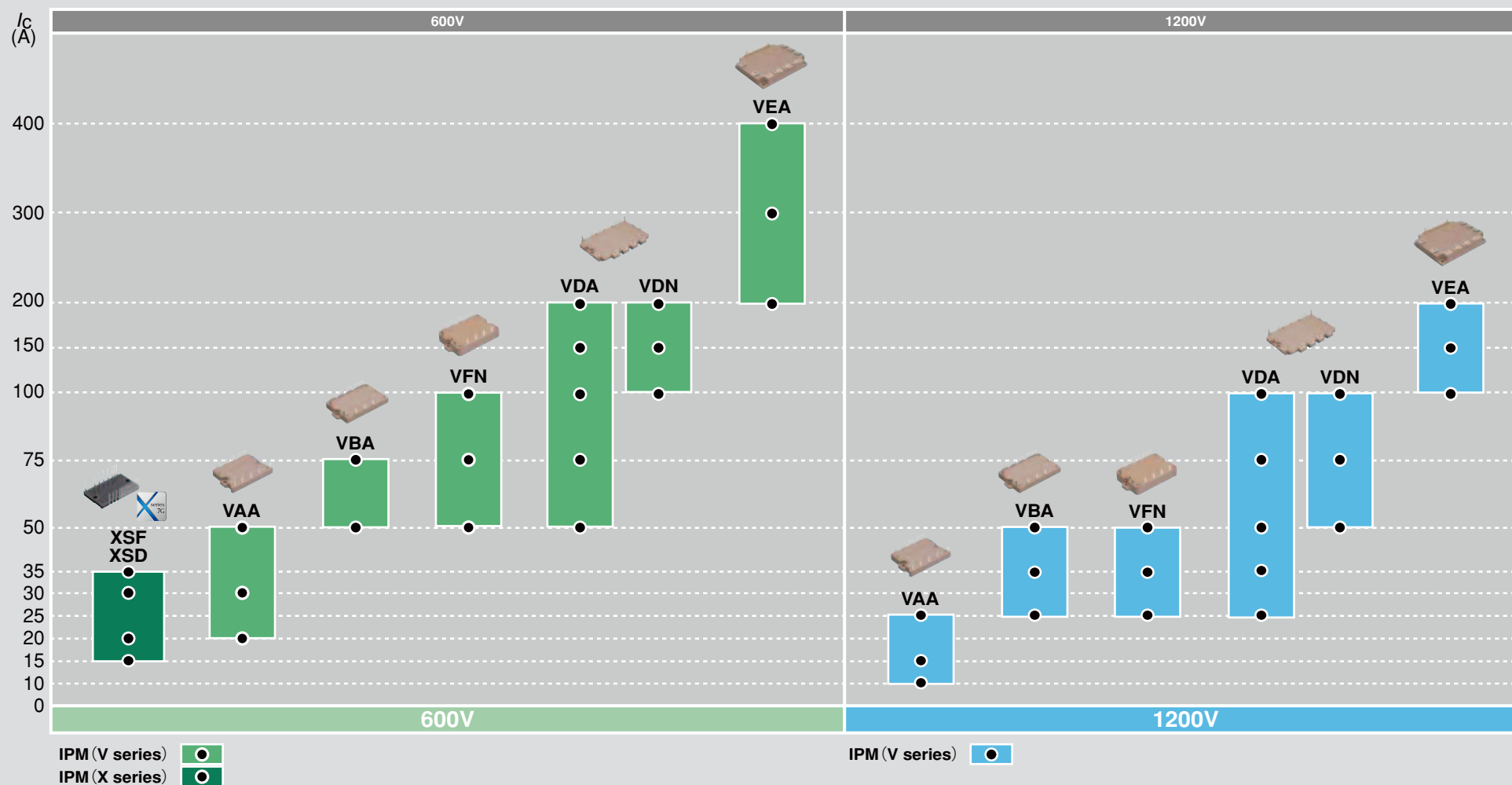
1-Pack Products Map

1MBI	Ic	IGBT series & Package type			
		V/U series	Size	Page	
		V	62×108mm	15	Standard Pack
		VC, VR, UG	140×130mm	17	High Power Module
		VD, VS, UE	140×190mm	17	



IPM (Intelligent Power Modules) Products Map

6/7MBP Ic	IGBT series & Package type	Size	V series		X series	Page
			7 in 1	6 in 1	6 in 1	
	XSD, XSF	26×43mm	-	-	✓	22
	VAA	49.5×70mm	-	✓	-	22
	VBA	50.2×87mm	-	✓	-	22
	VFN	55×90mm	✓	✓	-	22
	VDA, VDN	84×128.5mm	✓	✓	-	23
	VEA	110×142mm	✓	✓	-	24

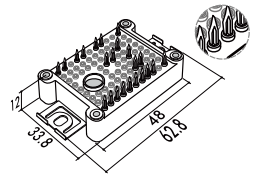


Small PIM (Power Integrated Modules)

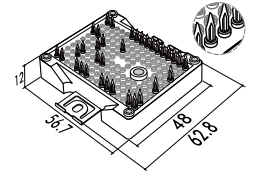
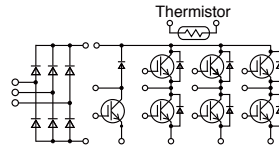
mm

Ic

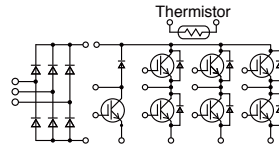
With NTC, press fit pins



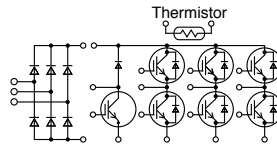
V: M726, X: M730



V: M727, X: M731

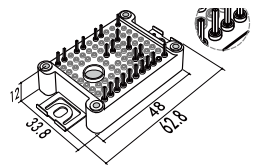


XKB, VKB

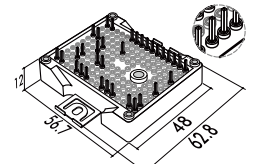
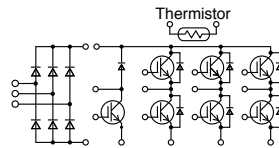


XRKB

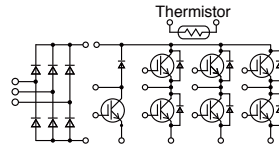
With NTC, solder pins



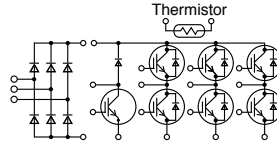
V: M728, X: M732



V: M729, X: M733



XKD, VKD



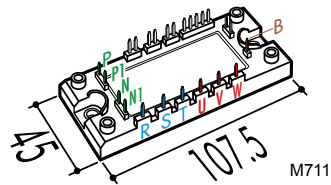
XRKD

Ic	650V	600V	1200V	
	X series	V series	X series	V series
10A	7MBR10XKA065-50	7MBR10VKA060-50	7MBR10XKA120-50	7MBR10VKA120-50
15A	7MBR15XKA065-50	7MBR15VKA060-50	7MBR15XKA120-50	7MBR15VKA120-50
20A	7MBR20XKA065-50	7MBR20VKA060-50		
25A			7MBR25XKA120-50	
30A	7MBR30XKA065-50	7MBR30VKA060-50		
15A			7MBR15XKB120-50	7MBR15VKB120-50
25A			7MBR25XKB120-50	7MBR25VKB120-50
35A			7MBR35XKB120-50	7MBR35VKB120-50
50A	7MBR50XKB065-50	7MBR50VKB060-50	7MBR50XRKB120-50*	
10A	7MBR10XKC065-50	7MBR10VKC060-50	7MBR10XKC120-50	7MBR10VKC120-50
15A	7MBR15XKC065-50	7MBR15VKC060-50	7MBR15XKC120-50	7MBR15VKC120-50
20A	7MBR20XKC065-50	7MBR20VKC060-50		
25A			7MBR25XKC120-50	
30A	7MBR30XKC065-50	7MBR30VKC060-50		
15A			7MBR15XKD120-50	7MBR15VKD120-50
25A			7MBR25XKD120-50	7MBR25VKD120-50
35A			7MBR35XKD120-50	7MBR35VKD120-50
50A	7MBR50XKD065-50	7MBR50VKD060-50	7MBR50XRKD120-50*	

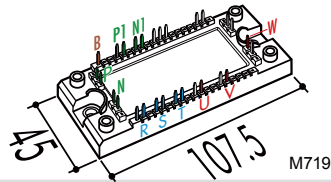
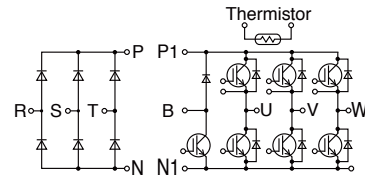
*Under development

PIM (Power Integrated Modules) EconoPIM™

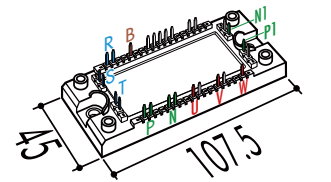
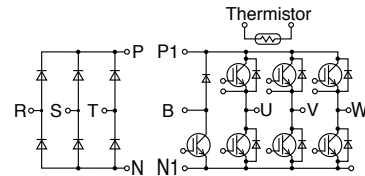
mm



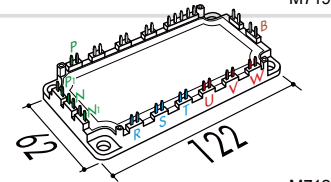
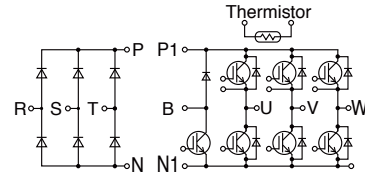
M711



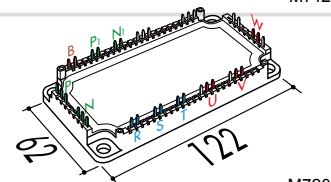
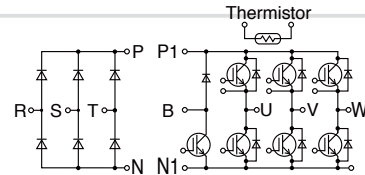
M719



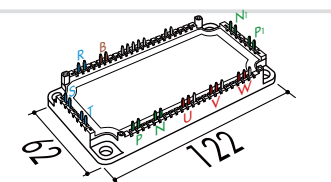
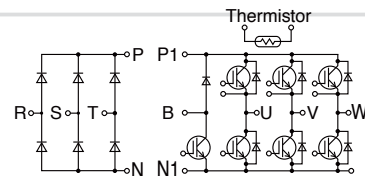
M719



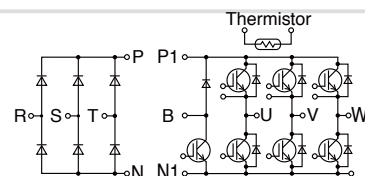
M712



M720



M720



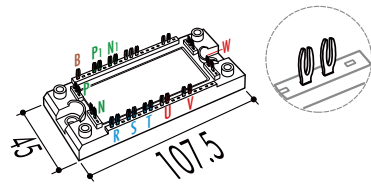
Ic	650V	600V	1200V	
	X series	V series	X series	V series
25A				7MBR25VA120-50
35A				7MBR35VA120-50
50A		7MBR50VA060-50		
25A				7MBR25VM120-50
35A			7MBR35XMA120-50	7MBR35VM120-50
50A	7MBR50XMA065-50		7MBR50XMA120-50	7MBR50VM120-50
75A	7MBR75XMA065-50		7MBR75XME120-50	
25A				7MBR25VP120-50
35A			7MBR35XPA120-50	7MBR35VP120-50
50A	7MBR50XPA065-50	7MBR50VP060-50	7MBR50XPA120-50	7MBR50VP120-50
			7MBR50XPE120-50	
75A	7MBR75XPA065-50	7MBR75VP060-50	7MBR75XPE120-50	
100A	7MBR100XPE065-50	7MBR100VP060-50		
35A				7MBR35VB120-50
50A				7MBR50VB120-50
75A		7MBR75VB060-50		7MBR75VB120-50
100A		7MBR100VB060-50		
50A				7MBR50VN120-50
75A	7MBR75XNA065-50		7MBR75XNA120-50	7MBR75VN120-50
100A	7MBR100XNA065-50		7MBR100XNA120-50	7MBR100VN120-50
150A	7MBR150XNA065-50		7MBR150XNE120-50	7MBR150VN120-50
50A				7MBR50VR120-50
75A			7MBR75XRA120-50	7MBR75VR120-50
			7MBR75XRE120-50	
100A	7MBR100XRA065-50	7MBR100VR060-50	7MBR100XRA120-50	7MBR100VR120-50
			7MBR100XRE120-50	
150A	7MBR150XRA065-50	7MBR150VR060-50	7MBR150XRE120-50	7MBR150VR120-50
	7MBR150XRE065-50			

Note1: 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.

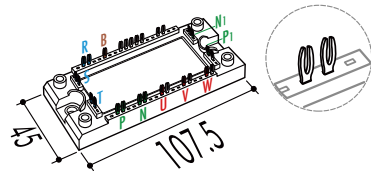
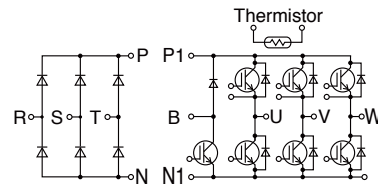
PIM (Power Integrated Modules) EconoPIM™

mm

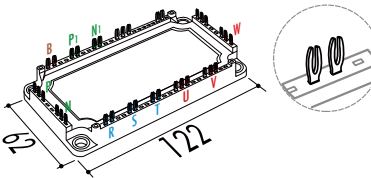
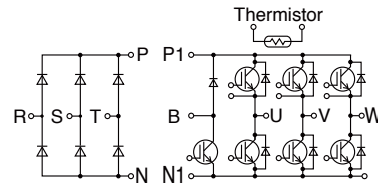
With NTC, press fit pins. PIM



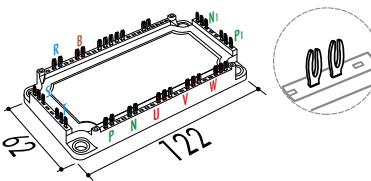
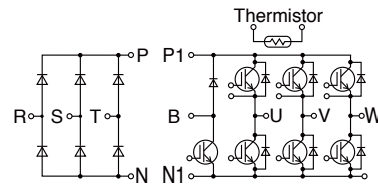
M721



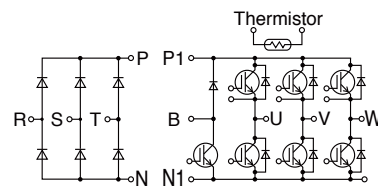
M721



M722



M722



Ic	650V	600V	1200V	
	X series	V series	X series	V series
25A				7MBR25VW120-50
35A			7MBR35XWA120-50	7MBR35VW120-50
50A	7MBR50XWA065-50		7MBR50XWA120-50	7MBR50VW120-50
75A	7MBR75XWA065-50		7MBR75XWE120-50	
25A				7MBR25VY120-50
35A			7MBR35XYA120-50	7MBR35VY120-50
50A	7MBR50XYA065-50	7MBR50VY060-50	7MBR50XYA120-50	7MBR50VY120-50
75A	7MBR75XYA065-50	7MBR75VY060-50	7MBR75XYE120-50	
100A	7MBR100XYE065-50	7MBR100VY060-50		
50A				7MBR50VX120-50
				7MBR50VX120-80
75A	7MBR75XXA065-50		7MBR75XXA120-50	7MBR75VX120-50
				7MBR75VX120-80
100A	7MBR100XXA065-50		7MBR100XXA120-50	7MBR100VX120-50
				7MBR100VX120-80
150A	7MBR150XXA065-50		7MBR150XXE120-50	7MBR150VX120-50
				7MBR150VX120-80
50A				7MBR50VZ120-50
				7MBR50VZ120-80
75A			7MBR75XZA120-50	7MBR75VZ120-50
				7MBR75VZ120-80
100A	7MBR100XZA065-50	7MBR100VZ060-50	7MBR100XZA120-50	7MBR100VZ120-50
		7MBR100VZ060-80		7MBR100VZ120-80
150A	7MBR150XZA065-50	7MBR150VZ060-50	7MBR150XZE120-50	7MBR150VZ120-50
		7MBR150VZ060-80		7MBR150VZ120-80

Note1: 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.

Note3: "-80" : Pre-Applied Thermal-Interface-Material for "-50"

6-Pack EconoPACK™

mm

Ic

600V

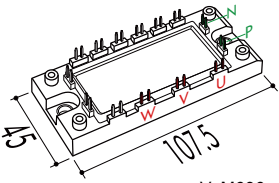
1200V

V series

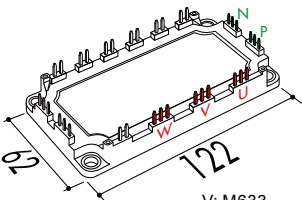
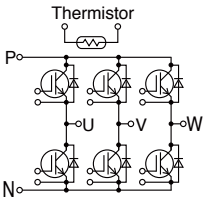
X series



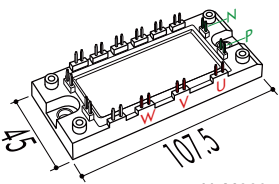
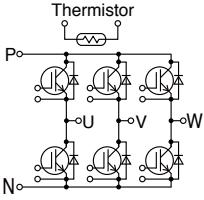
V series



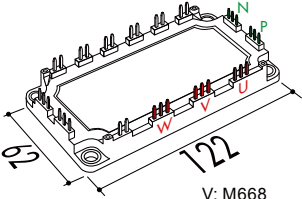
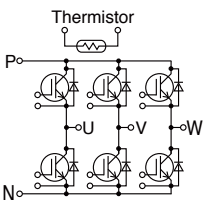
V: M636



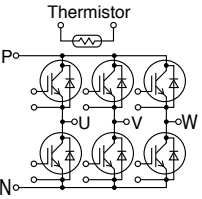
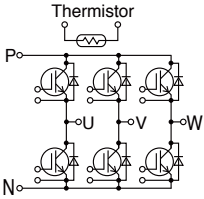
V: M633



X: M669



V: M668



XBA, XBE

XRBE

	600V	1200V
	V series	X series
50A	6MBI50VA-060-50	
75A	6MBI75VA-060-50	
100A	6MBI100VA-060-50	
100A		6MBI100VB-120-50
150A	6MBI150VB-060-50	6MBI150VB-120-50
180A		6MBI180VB-120-50
		6MBI180VB-120-55
100A		6MBI100XAE120-50
100A		6MBI100XBA120-50
150A		6MBI150XBA120-50
200A		6MBI200XBA120-50
		6MBI200XBE120-50
250A		6MBI250XRBE120-50*

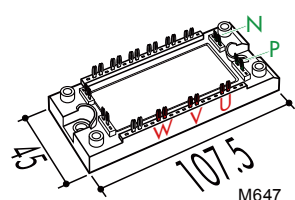
Note1: 6MBI180VB-120-55; Premium type (Low Thermal Impedance Version)
Note2: Pin assignment of output terminals changes within the range of colored position depending on output current.
Note3: EconoPACK™ is registered trademark of Infineon Technologies AG, Germany.

*Under development

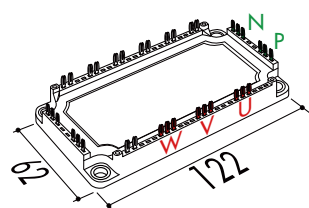
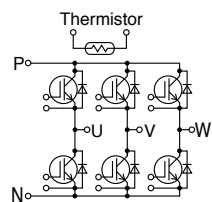
6-Pack EconoPACK™

mm

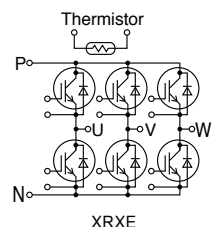
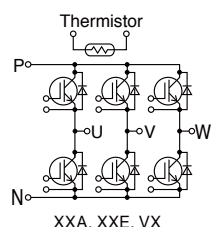
With NTC, press fit pins



M647



M648



Ic

600V

V series



1200V

X series

V series

1700V

V series

50A	6MBI50VW-060-50		6MBI50VW-120-50	
75A	6MBI75VW-060-50		6MBI75VW-120-50	
100A	6MBI100VW-060-50		6MBI100VW-120-50	
100A		6MBI100XXA120-50	6MBI100VX-120-50	6MBI100VX-170-50
			6MBI100VX-120-80	6MBI100VX-170-80
150A	6MBI150VX-060-50	6MBI150XXA120-50	6MBI150VX-120-50	
	6MBI150VX-060-80		6MBI150VX-120-80	
180A			6MBI180VX-120-50	
			6MBI180VX-120-80	
			6MBI180VX-120-55	
			6MBI180VX-120-85	
200A		6MBI200XXA120-50		
		6MBI200XXE120-50		
250A		6MBI250XRXE120-50*		

Note1: 6MBI180VB-120-55, 6MBI180VX-120-55; Premium type (Low Thermal Impedance Version)

Note2: Pin assignment of output terminals changes within the range of colored position depending on output current.

"-80", "-85": Pre-Applied Thermal-Interface-Material for "-50", "-55"

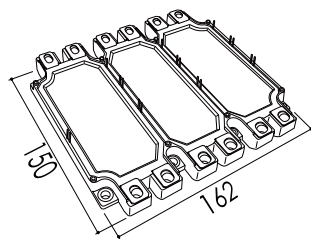
Note3: EconoPACK™ is registered trademark of Infineon Technologies AG, Germany.

*Under development

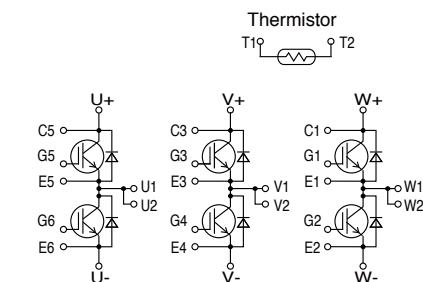
6-Pack EconoPACK™+

mm

With NTC, High power 6-Pack



M629



Ic

1200V

V series

1700V

V series

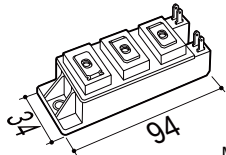
225A	6MBI225V-120-50	
300A	6MBI300V-120-50	6MBI300V-170-50
	6MBI300V-120-80	
450A	6MBI450V-120-50	6MBI450V-170-50
		6MBI450V-170-80
550A	6MBI550V-120-50	

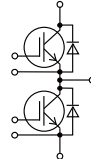
Note1: EconoPACK™+ is registered trademark of Infineon Technologies AG, Germany.

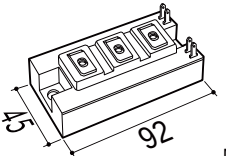
Note2: "-80": Pre-Applied Thermal-Interface-Material for "-50"

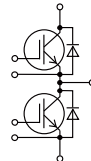
Standard 2-Pack

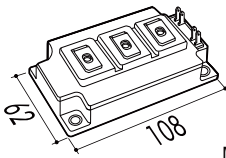
2-Pack

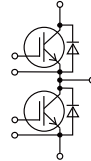

M263

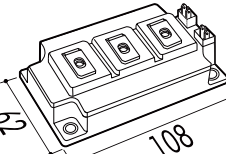


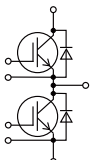

M274

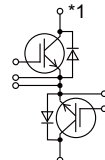


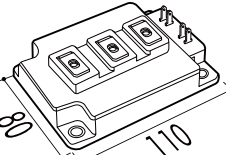

M275

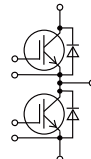



M276


2MBI450VH-120F




M277



75A				2MBI75VA-120-50	2MBI75XAA170-50*	2MBI75VA-170-50
100A		2MBI100VA-060-50	2MBI100XAA120-50	2MBI100VA-120-50	2MBI100XAA170-50*	2MBI100VA-170-50
150A	2MBI150XAA065-50	2MBI150VA-060-50	2MBI150XAA120-50	2MBI150VA-120-50	2MBI150XAA170-50*	
200A	2MBI200XAA065-50	2MBI200VA-060-50	2MBI200XAA120-50			
150A				2MBI150VB-120-50		
200A			2MBI200XBE120-50	2MBI200VB-120-50		
300A	2MBI300XBE065-50	2MBI300VB-060-50	2MBI300XBE120-50			
400A	2MBI400XBE065-50	2MBI400VB-060-50				
300A				2MBI300VD-120-50		
400A	2MBI400XDE065-50	2MBI400VD-060-50	2MBI400XDE120-50	2MBI400VD-120-50		
600A	2MBI600XDE065-50	2MBI600VD-060-50	2MBI600XDE120-50			
150A					2MBI150XHA170-50*	2MBI150VH-170-50
						2MBI150VH-170-80
200A				2MBI200VH-120-50	2MBI200XHA170-50*	2MBI200VH-170-50
				2MBI200VH-120-80		2MBI200VH-170-80
300A			2MBI300XHA120-50	2MBI300VH-120-50	2MBI300XHA170-50*	2MBI300VH-170-50
				2MBI300VH-120-80		2MBI300VH-170-80
400A					2MBI400XHA170-50*	
450A			2MBI450XHA120-50	2MBI450VH-120-50		
				2MBI450VH-120-80		
				2MBI450VH-120F-50 [†]		
				2MBI450VH-120F-80 [†]		
600A			2MBI600XHA120-50			
300A				2MBI300VE-120-50	2MBI300XEE170-50*	2MBI300VE-170-50
				2MBI300VE-120-80		2MBI300VE-170-80
400A					2MBI400XEE170-50*	2MBI400VE-170-50
						2MBI400VE-170-80
450A			2MBI450XEE120-50	2MBI450VE-120-50		
				2MBI450VE-120-80		
600A	2MBI600XEE065-50	2MBI600VE-060-50	2MBI600XEE120-50	2MBI600VE-120-50		
		2MBI600VE-060-80		2MBI600VE-120-80		

Note: "-80" : Pre-Applied Thermal-Interface-Material for "-50"

*Under development

Standard 2-Pack

mm

Ic

1200V

1700V

X series



V series

V series With
SIN-substrate *1

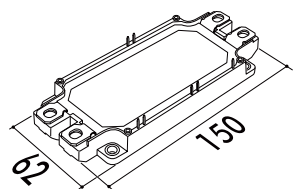
X series



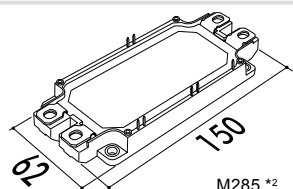
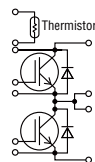
V series

V series With
SIN-substrate *1

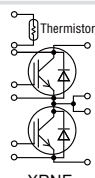
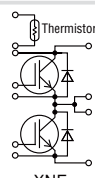
With NTC, solder pins



M254



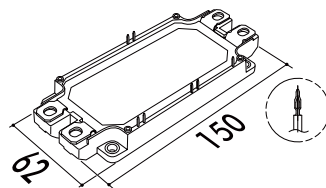
M285 *2



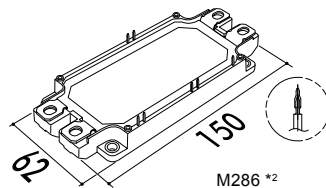
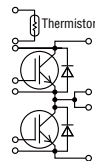
XNE

XRNE

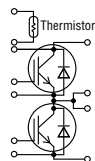
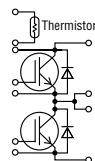
With NTC, press fit pins



M282



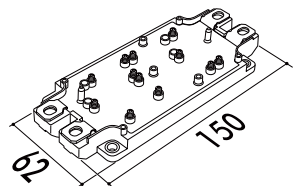
M286 *2



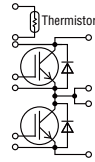
XNF

XRNF

With NTC, spring contacts



M260

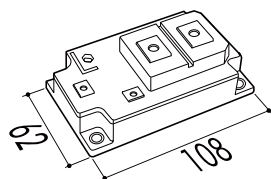


Ic	X series	V series	V series With SIN-substrate *1	X series	V series	V series With SIN-substrate *1
225A	2MBI225XNA120-50	2MBI225VN-120-50 2MBI225VN-120-80	2MBI225VN-120S-50	2MBI225XNA170-50*		
300A	2MBI300XNA120-50	2MBI300VN-120-50 2MBI300VN-120-80	2MBI300VN-120S-50 2MBI300VN-120S-80	2MBI300XNA170-50*	2MBI300VN-170-50 2MBI300VN-170-80	
450A	2MBI450XNA120-50	2MBI450VN-120-50 2MBI450VN-120-80	2MBI450VN-120S-50 2MBI450VN-120S-80	2MBI450XNA170-50*	2MBI450VN-170-50 2MBI450VN-170-80	
550A						2MBI550VN-170-50 2MBI550VN-170-80
600A	2MBI600XNG120-50		2MBI600VN-120-50 2MBI600VN-120-80	2MBI600XNG170-50*		
600A	2MBI600XNE120-50			2MBI600XNE170-50*		
800A	2MBI800XNE120-50					
1000A	2MBI1000XRNE120-50*					
225A	2MBI225XNB120-50	2MBI225VX-120-50 2MBI225VX-120-80		2MBI225XNB170-50*	2MBI225VX-170-50 2MBI225VX-170-80	
300A	2MBI300XNB120-50	2MBI300VX-120-50 2MBI300VX-120-80		2MBI300XNB170-50*	2MBI300VX-170-50 2MBI300VX-170-80	
450A	2MBI450XNB120-50	2MBI450VX-120-50 2MBI450VX-120-80		2MBI450XNB170-50*	2MBI450VX-170-50 2MBI450VX-170-80	
550A						2MBI550VX-170-50 2MBI550VX-170-80
600A	2MBI600XNH120-50		2MBI600VX-120-50 2MBI600VX-120-80	2MBI600XNH170-50*		
600A	2MBI600XNF120-50			2MBI600XNF170-50*		
800A	2MBI800XNF120-50					
1000A	2MBI1000XRNF120-50*					
225A		2MBI225VJ-120-50 2MBI225VJ-120-80				
300A		2MBI300VJ-120-50 2MBI300VJ-120-80				
450A		2MBI450VJ-120-50 2MBI450VJ-120-80				
550A						2MBI550VJ-170-50 2MBI550VJ-170-80
600A			2MBI600VJ-120-50 2MBI600VJ-120-80			

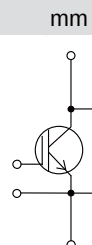
Note1: "-80" : Pre-Applied Thermal-Interface-Material for "-50" Note2: *1 Low Thermal Impedance Version Note3: *2 Low thermal impedance and high tracking capability type

*Under development

Standard 1-Pack

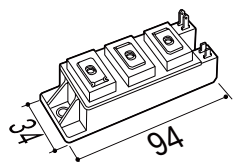


M153

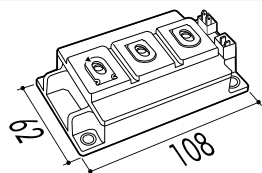
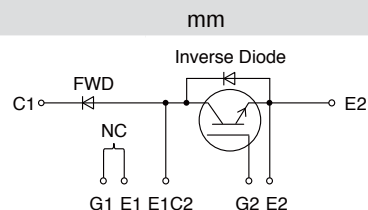


Ic	1200V		1700V
	V series		V series
	Aluminium oxide DCB	Aluminium nitride DCB	Aluminium oxide DCB
300A			1MBI300V-170-50
400A	1MBI400V-120-50	1MBI400VF-120-50	1MBI400V-170-50
600A	1MBI600V-120-50	1MBI600VF-120-50	1MBI600V-170-50
900A	1MBI900V-120-50		

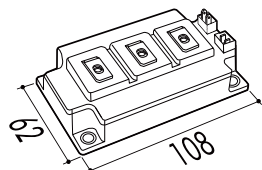
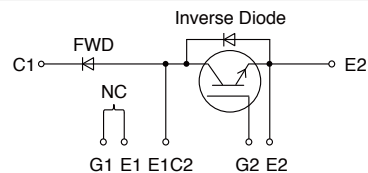
Chopper



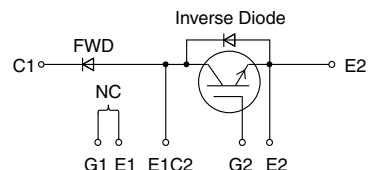
M262



M259

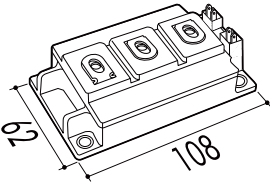
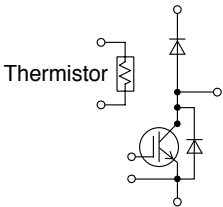
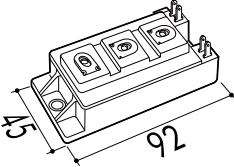
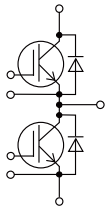
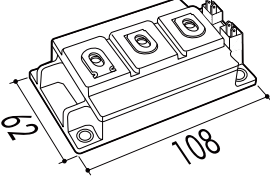
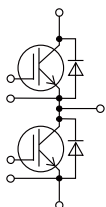
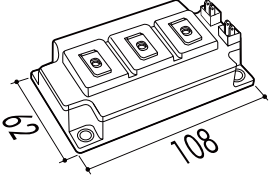
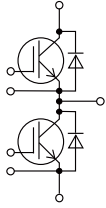


M283

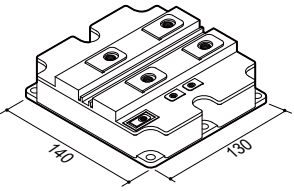
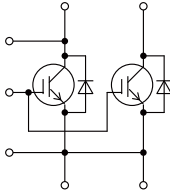
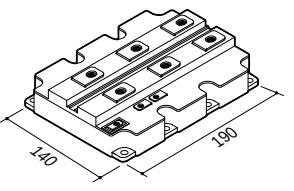
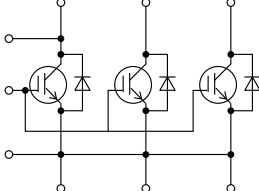
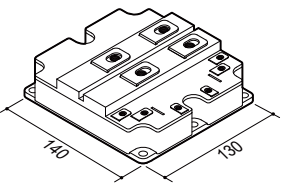
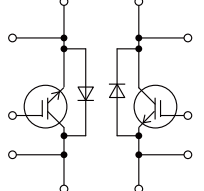


Ic	600V		1200V	
	U series	V series	U series	V series
50A			1MBI50U4F-120L-50	
75A			1MBI75U4F-120L-50	
100A			1MBI100U4F-120L-50	
150A				1MBI150VA-120L-50
200A				1MBI200VA-120L-50
200A			1MBI200U4H-120L-50	
300A	1MBI300U2H-060L-50			
400A		1MBI400VH-060L-50		

High Speed Modules

				1200V	
				I _c	High Speed IGBT
Chopper				200A	1MBI200HH-120L-50
				300A	1MBI300HH-120L-50
2-Pack				100A	2MBI100HB-120-50
				150A	2MBI150HH-120-50
				200A	2MBI200HH-120-50
				100A	2MBI100HJ-120-50
				150A	2MBI150HJ-120-50
				200A	2MBI200HJ-120-50
				300A	2MBI300HJ-120-50

High Power Modules

		mm	I _c	1200V	1700V		3300V	
				V series Trench-FS Cu-baseplate	V series Trench-FS Cu-baseplate AlSiC-baseplate		U series Trench-FS AlSiC-baseplate AlSiC-baseplate Low switching loss	
1-Pack	 M151, M155		800A				1MBI800UG-330	
			1000A				1MBI1000UG-330	1MBI1000UG-330B
			1200A	1MBI1200VC-120P	1MBI1200VC-170E	1MBI1200VR-170E		
			1600A	1MBI1600VC-120P	1MBI1600VC-170E	1MBI1600VR-170E		
			2400A	1MBI2400VC-120P	1MBI2400VC-170E	1MBI2400VR-170E		
1-Pack	 M152, M156		1200A				1MBI1200UE-330	
			1500A				1MBI1500UE-330	1MBI1500UE-330B
			2400A	1MBI2400VD-120P	1MBI2400VD-170E	1MBI2400VS-170E		
			3600A	1MBI3600VD-120P	1MBI3600VD-170E	1MBI3600VS-170E		
2-Pack	 M256, M278		600A	2MBI600VG-120P	2MBI600VG-170E	2MBI600VT-170E		
			800A	2MBI800VG-120P	2MBI800VG-170E	2MBI800VT-170E		
			1200A	2MBI1200VG-120P	2MBI1200VG-170E	2MBI1200VT-170E		

Note: M151, M152, M256: Cu-baseplate M155, M156, M278: AlSiC-baseplate

High Power Modules

mm

Ic

X series



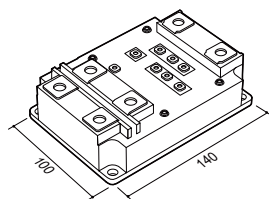
1700V

X series

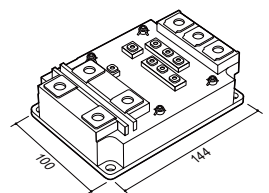
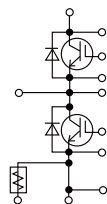


3300V

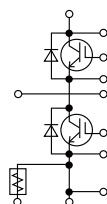
2-Pack HPnC



M288



M292



450A

1000A 2MBI1000XUF170-50

1200A 2MBI1200XUF170-50

450A

1000A 2MBI1000XVF170-50

1200A 2MBI1200XVF170-50

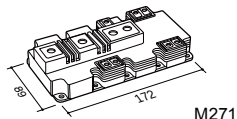
2MBI450XUF330-50

2MBI450XVF330-50

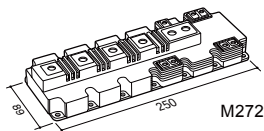
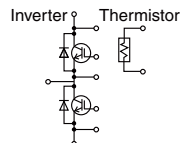
2-Pack

mm

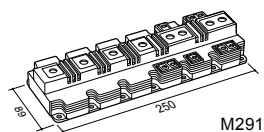
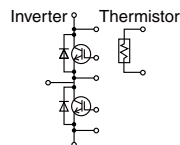
/c



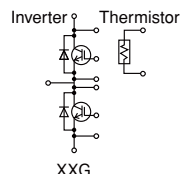
M271



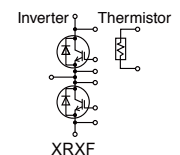
M272



M291



XXG



XRXF

[illegible]

Note3: The products with 'EA' on this page have large FWD.

Note4: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.

PrimePACK™

mm

I_C

1200V

1700V

V series

V series

Low side configuration

High side configuration

Low side configuration

High side configuration

650A

1MBI650VXA-170EL-50

1MBI650VXA-170EH-50

1MBI650VXA-170EL-80

1MBI650VXA-170EH-80

1MBI650VXA-170EL-54

1MBI650VXA-170EH-54

900A

1MBI900VXA-120PD-50 *1

1MBI900VXA-120PC-50 *1

1MBI900VXA-120PD-54 *1

1MBI900VXA-120PC-54 *1

1MBI900VXA-120PD-80 *1

1MBI900VXA-120PC-80 *1

1000A

1MBI1000VXB-170EL-50

1MBI1000VXB-170EH-50

1MBI1000VXB-170EL-80

1MBI1000VXB-170EH-80

1MBI1000VXB-170EL-54

1MBI1000VXB-170EH-54

1400A

1MBI1400VXB-170PL-50

1MBI1400VXB-170PH-50

1MBI1400VXB-170PL-54

1MBI1400VXB-170PH-54

1MBI1400VXB-120PL-54

1MBI1400VXB-120PH-54

1MBI1400VXB-170PL-54

1MBI1400VXB-170PH-54

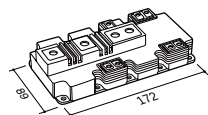
1MBI1400VXB-120PL-80

1MBI1400VXB-120PH-80

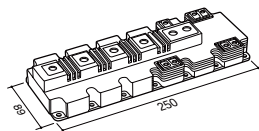
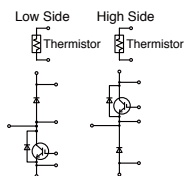
1MBI1400VXB-170PL-80

1MBI1400VXB-170PH-80

Chopper



M271

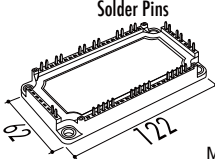
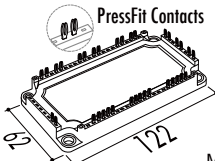
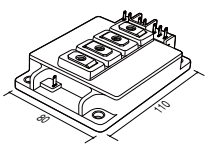
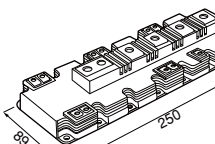


M272

Note1: The products with suffix '-54' on this page are labeled to specify the rank of V_{sat} and V_F.
Note2: "-80" : Pre-Applied Thermal-Interface-Material for "-54"

Note3: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.
Note4: *: Antiparallel diode current rating is 120A. Application circuit is Boost/Buck chopper only.

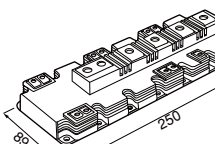
Advanced T-type NPC 3-level Modules

			600V		1200V		1700V	
	mm	I _c	V series	RB-IGBT	V series	RB-IGBT	V series	RB-IGBT
3 Phase With NTC, solder pins	 M1203	50A			12MBI50VN-120-50	600V		
		75A			12MBI75VN-120-50	600V		
		100A			12MBI100VN-120-50	600V		
3 Phase With NTC, press fit pins	 M1202	50A			12MBI50VX-120-50	600V		
		75A			12MBI75VX-120-50	600V		
		100A			12MBI100VX-120-50	600V		
1 Phase	 M403	220A					4MBI220VG-170R2-50	1200V
		300A			4MBI300VG-120R-50	600V		
					4MBI300VG-120R1-50	900V		
		340A			4MBI340VF-120R-50	600V		
		400A	4MBI400VG-060R-50	600V	4MBI400VF-120R-50*1	600V		
		450A			4MBI450VF-120RD-50*2*3	600V		
1 Phase	 M404	450A			4MBI450VB-120R1-50	900V	4MBI450VB-170R2-50	1200V
					4MBI450VB-120R1-60	900V	4MBI450VB-170R2-60	1200V
		600A					4MBI600VB-170R2-50	1200V
							4MBI600VB-170R2-60	1200V
		650A			4MBI650VB-120R1-50	900V		
					4MBI650VB-120R1-60	900V		
		900A			4MBI900VB-120R1-50	900V		
					4MBI900VB-120R1-60	900V		
					4MBI900VB-120RA-50	600V		
					4MBI900VB-120RA-60	600V		

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.

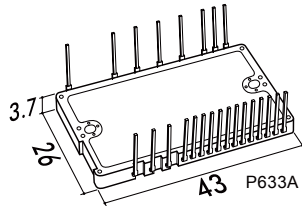
*1: Particular for Inverter of UPS or PCS *2: Particular for Converter of UPS *3: Under development

I-type NPC 3-level Module

			600V		1200V		1700V	
	mm	I _c	V series		V series		V series	
1 Phase	 M404	600A			4MBI600VC-120-50			
					4MBI600VC-120-60			

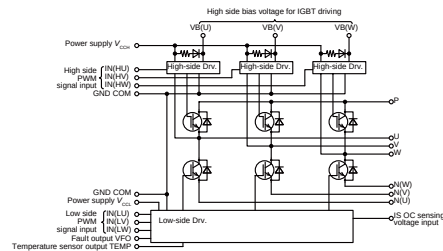
Small IPM (Intelligent Power Modules)

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



**Built-in
protection
functions**

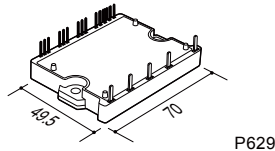
P-side fault status output (Alarm)
N-side fault status output (Alarm)
Under voltage protection (self shutdown)
Over current protection (self shutdown)
Overheating protection (self shutdown)
Temperature sensor output (Vtemp, out)



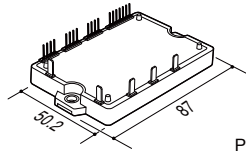
600V		X series	
15A	6MBP15XSD060-50	15A	6MBP15XSF060-50
20A	6MBP20XSD060-50	20A	6MBP20XSF060-50
30A	6MBP30XSD060-50	30A	6MBP30XSF060-50
35A	6MBP35XSD060-50	35A	6MBP35XSF060-50

IPM (Intelligent Power Modules)

Without
Brake-Chopper



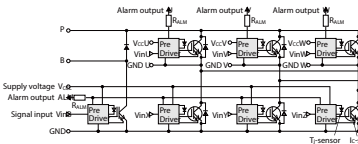
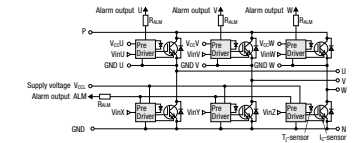
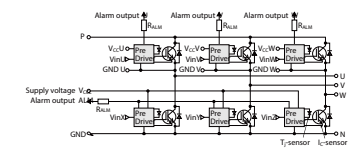
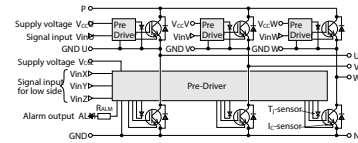
P629



P626

**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)
Temperature sensor output (Vtemp, out)



600V		1200V	
V series		V series	
10A		6MBP10VAA120-50	
15A		6MBP15VAA120-50	
20A	6MBP20VAA060-50		
25A		6MBP25VAA120-50	
30A	6MBP30VAA060-50		
50A	6MBP50VAA060-50		
25A		6MBP25VBA120-50	
35A		6MBP35VBA120-50	
50A	6MBP50VBA060-50	6MBP50VBA120-50	
75A	6MBP75VBA060-50		
25A		6MBP25VFN120-50	
35A		6MBP35VFN120-50	
50A	6MBP50VFN060-50	6MBP50VFN120-50	
75A	6MBP75VFN060-50		
100A	6MBP100VFN060-50		
25A		7MBP25VFN120-50	
35A		7MBP35VFN120-50	
50A	7MBP50VFN060-50	7MBP50VFN120-50	
75A	7MBP75VFN060-50		
100A	7MBP100VFN060-50		

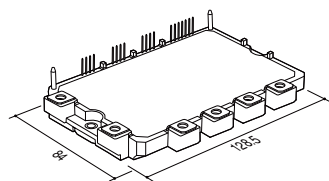
IPM (Intelligent Power Modules)

Built-in protection functions

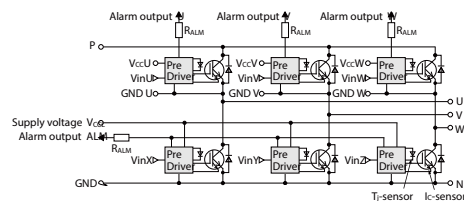
- P-side fault status output (Alarm)
- N-side fault status output (Alarm)
- Under voltage protection (self shutdown)
- Over current protection (self shutdown)
- Overheating protection (self shutdown)
- Temperature sensor output (Vtemp, out)

mm

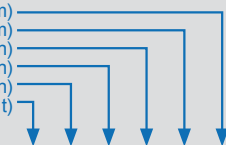
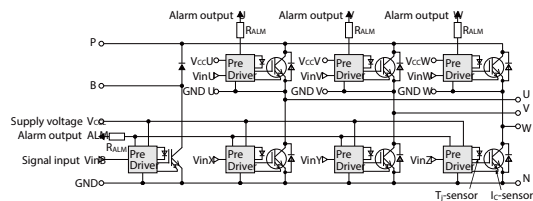
Without Brake-Chopper



P630



With Brake-Chopper



Ic	600V		1200V	
	V series		V series	
25A			6MBP25VDA120-50	
35A			6MBP35VDA120-50	
50A	6MBP50VDA060-50		6MBP50VDA120-50	
			6MBP50VDN120-50	
75A	6MBP75VDA060-50		6MBP75VDA120-50	
			6MBP75VDN120-50	
100A	6MBP100VDA060-50		6MBP100VDA120-50	
			6MBP100VDN060-50	
150A	6MBP150VDA060-50			
			6MBP150VDN060-50	
200A	6MBP200VDA060-50			
			6MBP200VDN060-50	
25A			7MBP25VDA120-50	
35A			7MBP35VDA120-50	
50A	7MBP50VDA060-50		7MBP50VDA120-50	
			7MBP50VDN120-50	
75A	7MBP75VDA060-50		7MBP75VDA120-50	
			7MBP75VDN120-50	
100A	7MBP100VDA060-50		7MBP100VDA120-50	
			7MBP100VDN060-50	
150A	7MBP150VDA060-50			
			7MBP150VDN060-50	
200A	7MBP200VDA060-50			
			7MBP200VDN060-50	

Note1: The products with 'VDN' on this page have high heat dissipation characteristics.

IPM (Intelligent Power Modules)

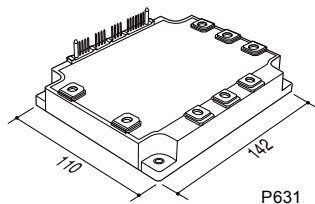
Built-in protection functions

- 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)
- Temperature sensor output (Vtemp, out)

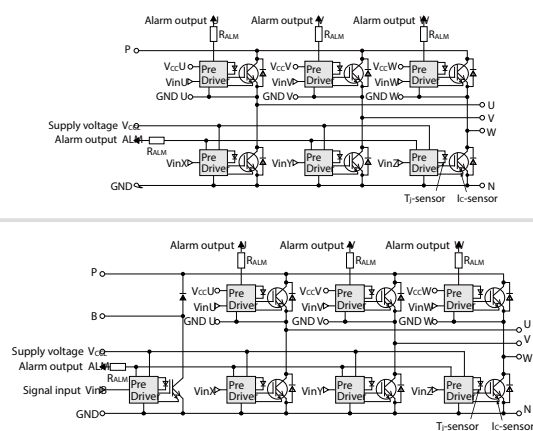
mm

Without Brake-Chopper

With Brake-Chopper

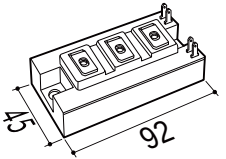
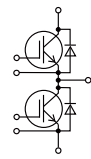
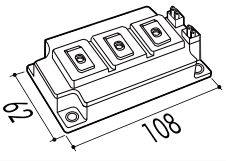
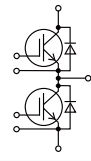
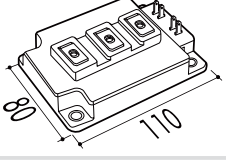
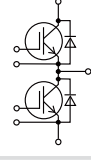
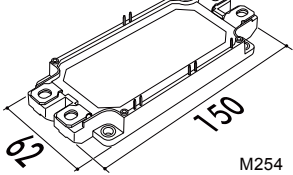
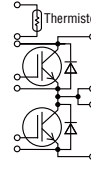
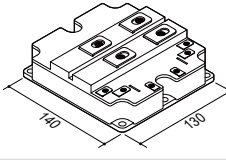
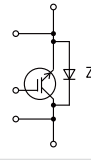
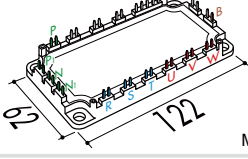
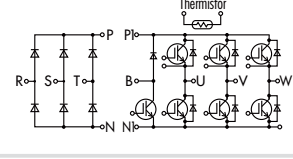
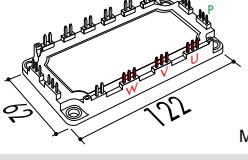
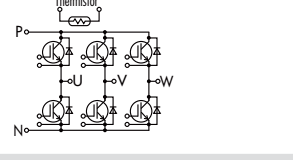


P631



Ic	600V		1200V	
	V series		V series	
100A				6MBP100VEA120-50
150A				6MBP150VEA120-50
200A	6MBP200VEA060-50		6MBP200VEA120-50	
300A	6MBP300VEA060-50			
400A	6MBP400VEA060-50			
100A				7MBP100VEA120-50
150A				7MBP150VEA120-50
200A	7MBP200VEA060-50		7MBP200VEA120-50	
300A	7MBP300VEA060-50			
400A	7MBP400VEA060-50			

Hybrid SiC Modules

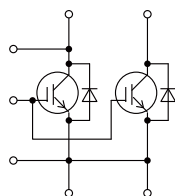
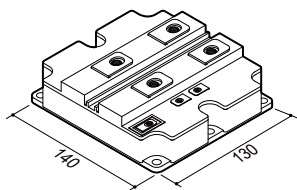
		mm	Ic	600V V series	1200V V series	1200V VW series	1700V V series
2-Pack			200A		2MSI200VAB-120-53		
			200A 300A		2MSI300VAH-120C-53	2MSI200VWAH-120-53* 2MSI300VWAH-120-53*	
			400A				2MSI400VAE-170-53
			300A 450A 550A 600A		2MSI300VAN-120-53 2MSI450VAN-120-53 2MSI600VAN-120-53	2MSI300VWAN-120-53*	2MSI550VAN-170-53*
			1200A				2MSI1200VAT-170PC *1* 2MSI1200VAT-170EC *2*
PIM			35A 50A 75A 100A	7MSR50VAB060-50* 7MSR75VAB060-50* 7MSR100VAB060-50*	7MSR35VAB120-50* 7MSR50VAB120-50*		
6-Pack			100A		6MSI100VAB-120-50*		

*1: Low $V_{CE(sat)}$ type *2: Low switching losses

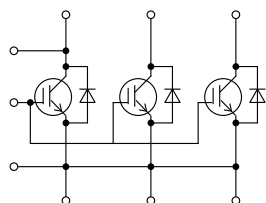
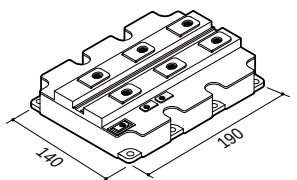
*Under development

Hybrid SiC Modules

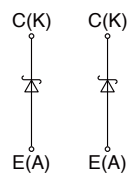
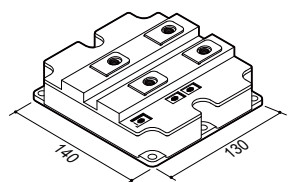
mm



M155



M156



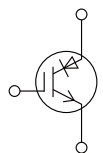
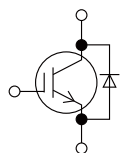
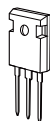
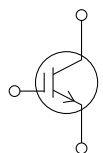
M289

1-Pack

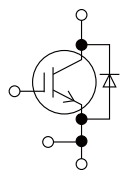
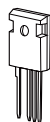
Diode

[illegible]

TO-247-P2



TO-247-4-P2



Ic	600V			650V	650V	1200V		
	V series	High speed V series	RB series	High speed W series	XS series	V series	High speed V series	High speed W series
15A							FGW15N120H	
25A								FGW25N120W
30A				FGW30N65W	FGW30XS65		FGW30N120H	
35A		FGW35N60H						
40A				FGW40N65W	FGW40XS65		FGW40N120H	FGW40N120W
50A		FGW50N60H		FGW50N65W	FGW50XS65			
60A				FGW60N65W				
75A		FGW75N60H		FGW75N65W	FGW75XS65			
15A						FGW15N120VD	FGW15N120HD	
25A						FGW25N120VD		FGW25N120WD/WE
30A	FGW30N60VD				FGW30XS65C		FGW30N120HD	
35A		FGW35N60HD/HC						
40A				FGW40N65WD/WE	FGW40XS65C	FGW40N120VD	FGW40N120HD	FGW40N120WD/WE
50A	FGW50N60VD	FGW50N60HD/HC		FGW50N65WD/WE	FGW50XS65C/D			
60A				FGW60N65WD/WE				
75A		FGW75N60HD/HC		FGW75N65WE	FGW75XS65C/D			
85A			FGW85N60RB					
40A								FGZ40N120WE
50A				FGZ50N65WD/WE				
75A				FGZ75N65WE	FGZ75XS65C			

0 ~	~10	~20	~30	~40	~50	~60	~70	~80	~90	~100	kHz
	V/RB										
	High speed V										
		XS									
			High speed W								

Rectifier Diode

		Ultra Fast Recovery Diodes		Soft Recovery Fast Recovery Diodes	
		600V	650V	1200V	
TO-220	Ic				
	15A	FDRP15S60L			
	25A	FDRP25S60L			
	35A				
	75A				
TO-247-P2	12A			FDRW12S120J	
	15A	FDRW15S60L			
	20A			FDRW20S120J	
	25A	FDRW25S60L			
	30A			FDRW30S120J	
	35A	FDRW35S60L			
	40A				FDRW40C120J
	50A		FDRW50C60L		
TO-247-2-P2	60A				FDRW60C120J
	70A		FDRW70C60L		
	60A		FDRW60T65L		
	75A	FDRW75T60L			

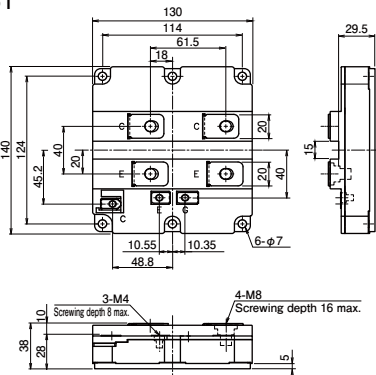
SiC-SBD



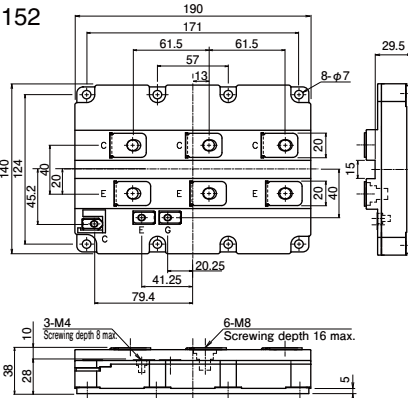
		600V		1200V	
T-Pack(s)	Ic				
	10A	FDCC10S65			
	20A		FDCC20C65		
	25A	FDCC25S65			
TO-220-2	10A	FDCP10S65			
	25A	FDCP25S65			
TO-220	20A		FDCP20C65		
TO-220F	20A		FDCA20C65		
TO-220F-2	10A	FDCA10S65			
	18A			FDCA18S120	
	25A	FDCA25S65			
TO-247	10A	FDCY10S65			
	18A			FDCY18S120	
	20A		FDCY20C65		
	25A	FDCY25S65			
	36A				FDCY36C120
	50A		FDCY50C65		
TO-247-2-P2	18A			FDCW18T120	

Package Outlines, mm

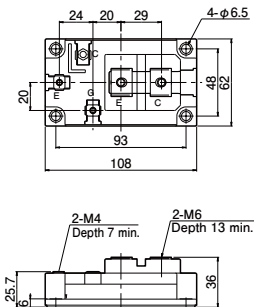
M151



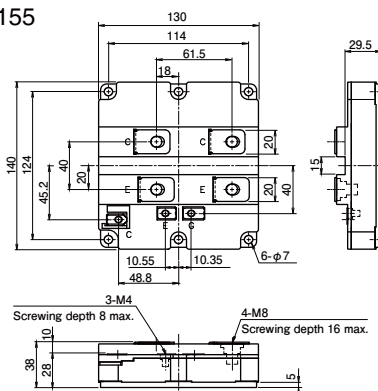
M152



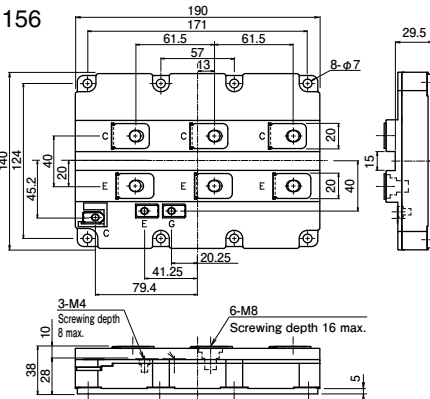
M153



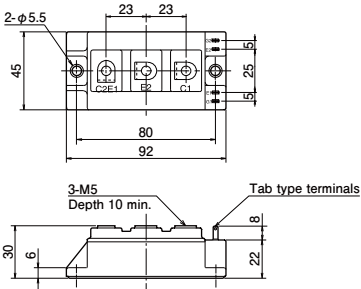
M155



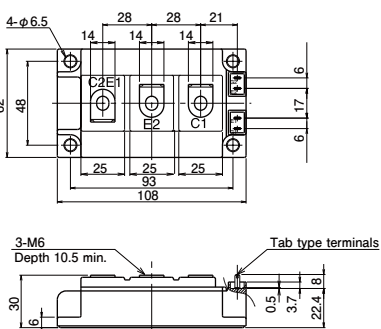
M156



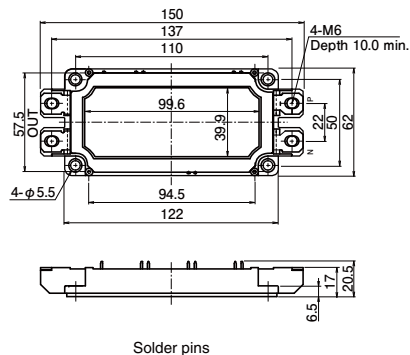
M233



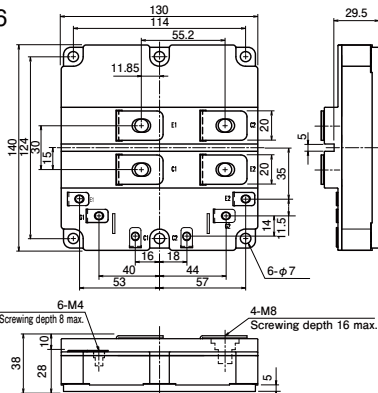
M249



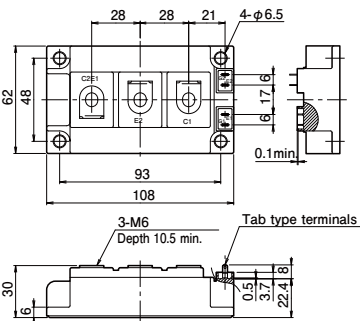
M254



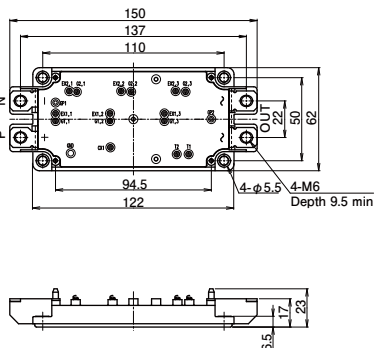
M256



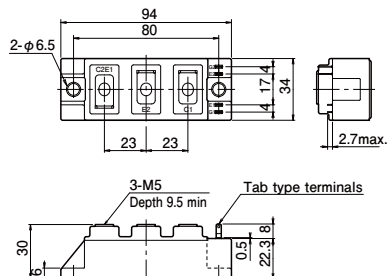
M259



M260

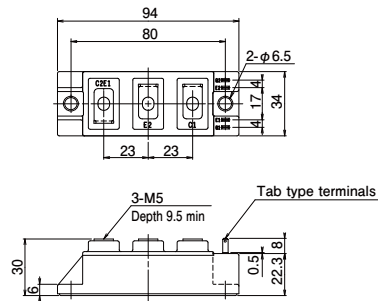


M262

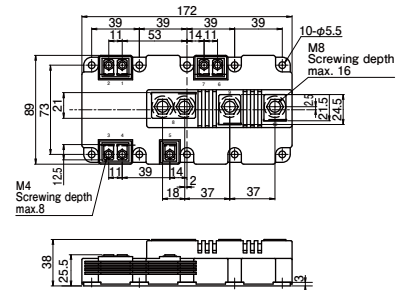


Package Outlines, mm

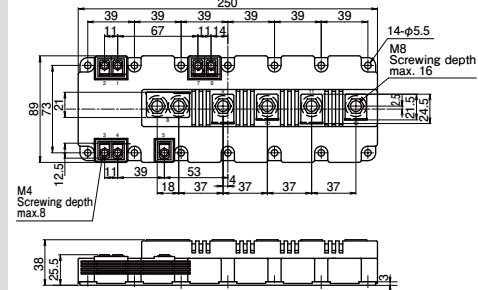
M263



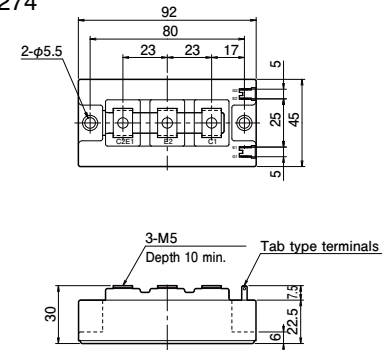
M271



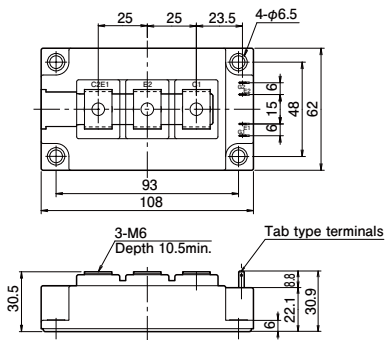
M272



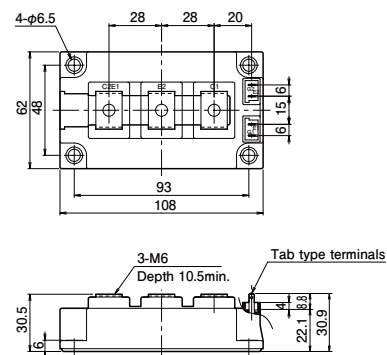
M274



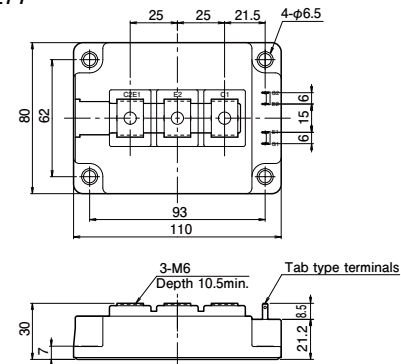
M275



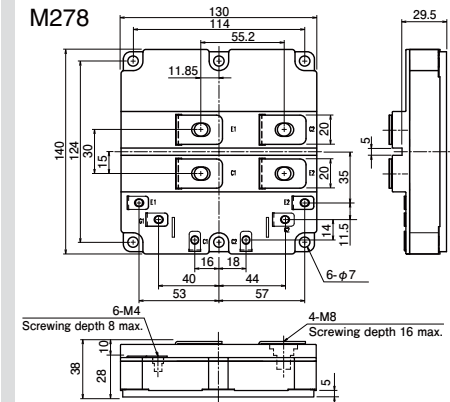
M276



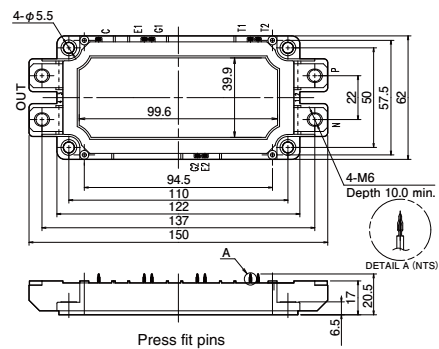
M277



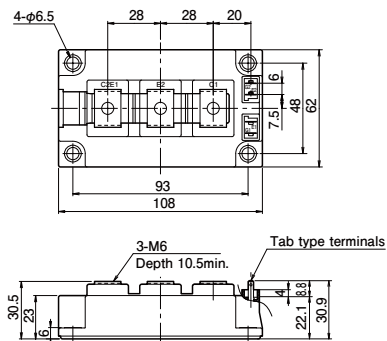
M278



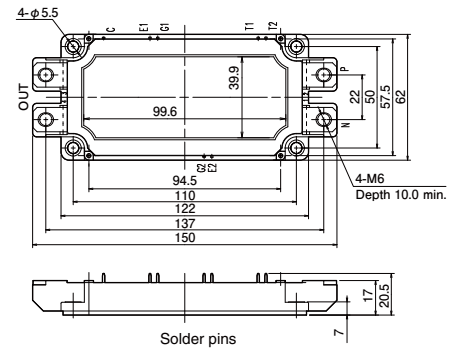
M282



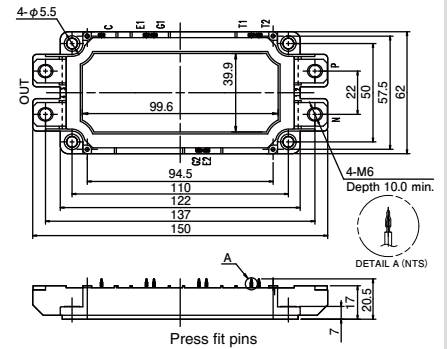
M283



M285

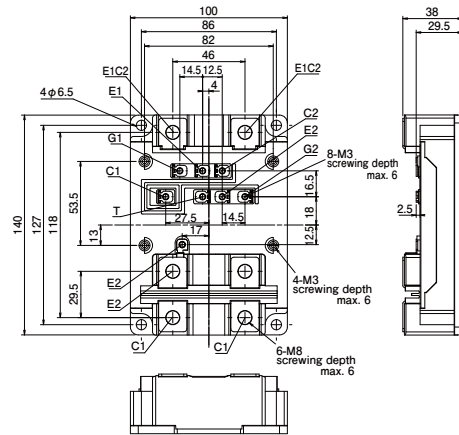


M286

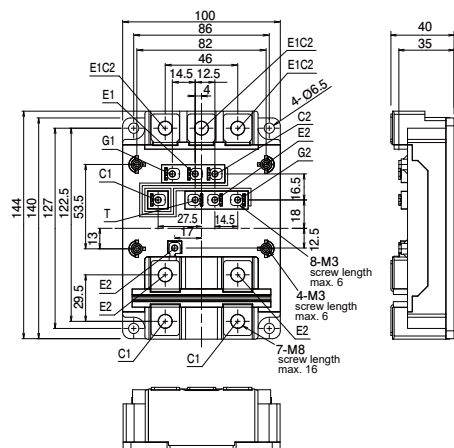


Package Outlines, mm

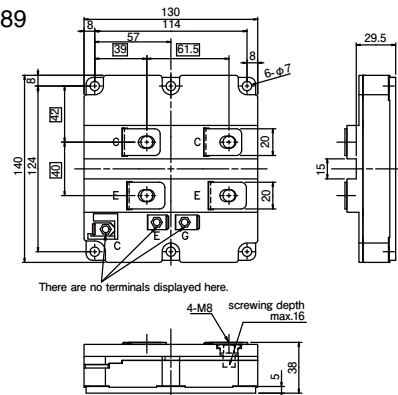
M288



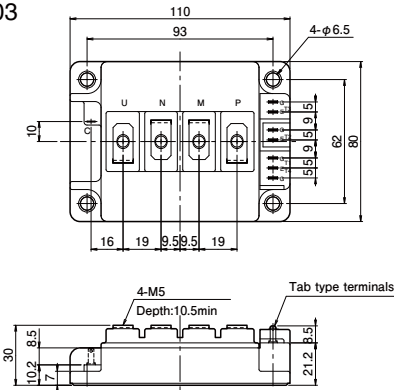
M292



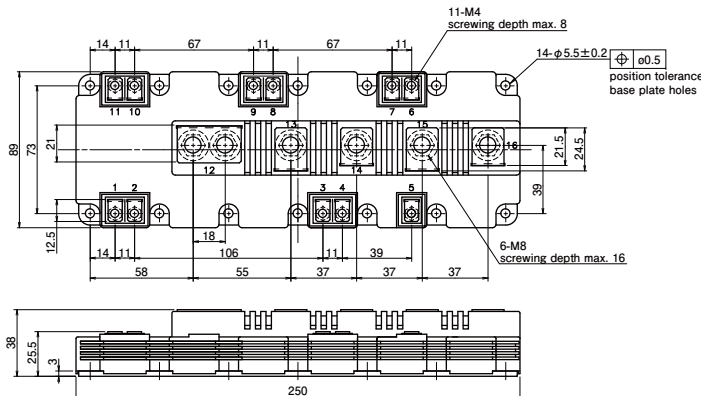
M289



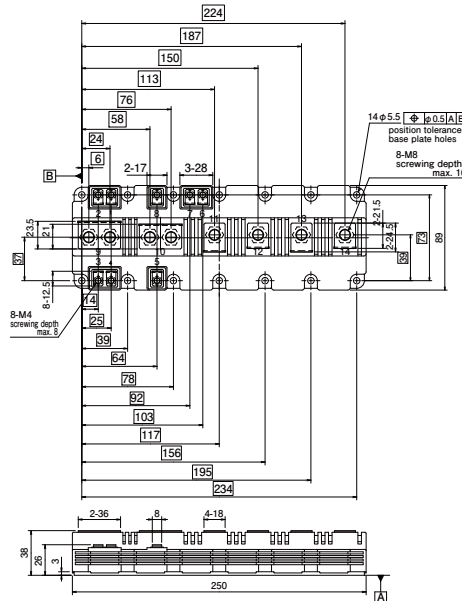
M403



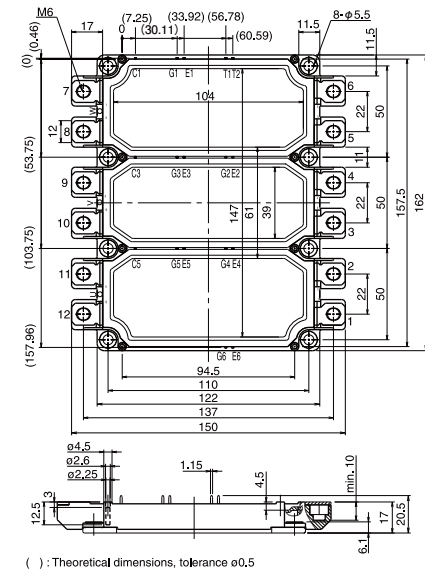
M404



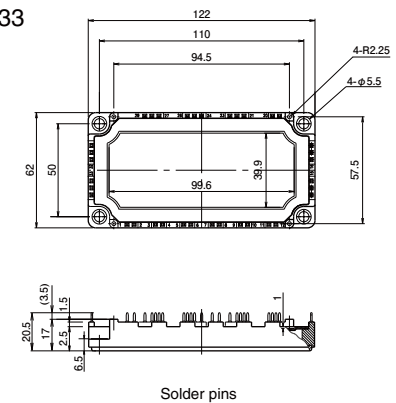
M291



M629



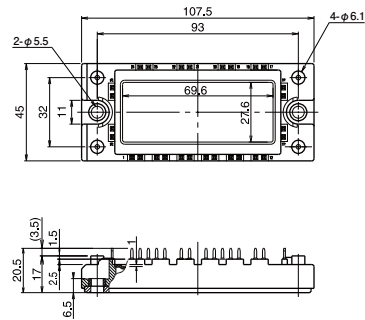
M633



Solder pins

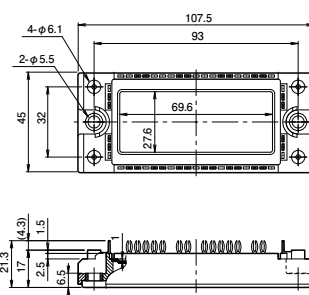
Package Outlines, mm

M636



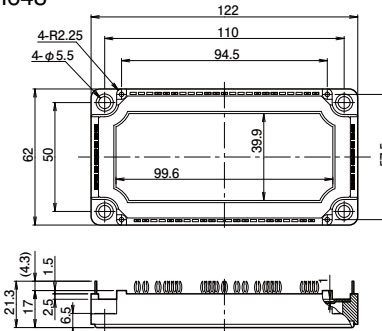
Solder pins

M647



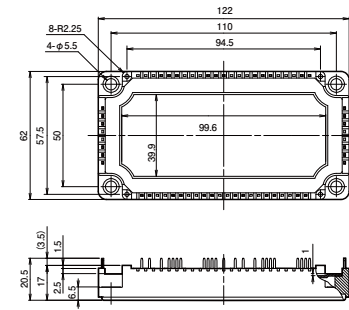
Press fit pins

M648



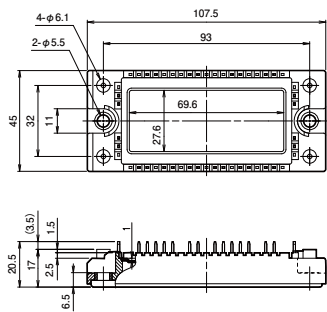
Press fit pins

M668



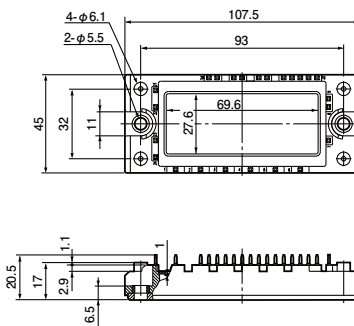
Solder pins

M669



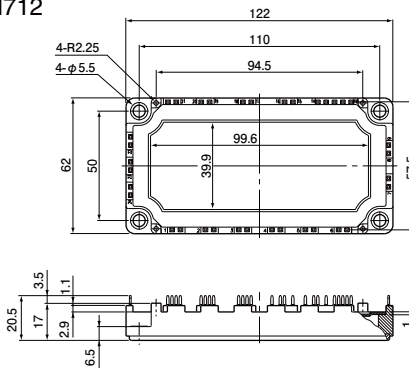
Solder pins

M711



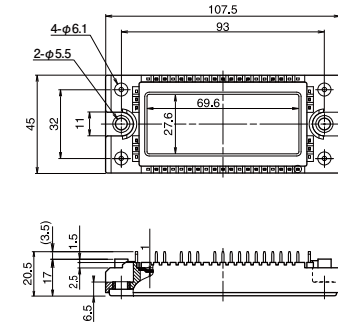
Solder pins

M712



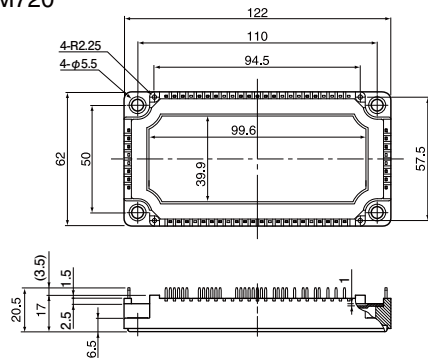
Solder pins

M719



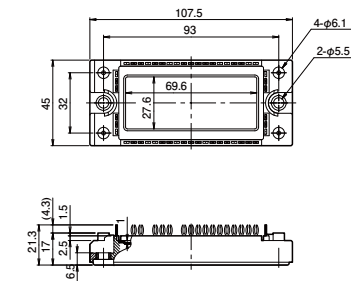
Solder pins

M720



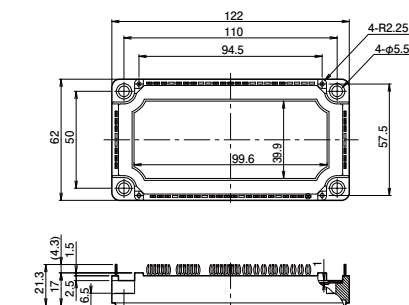
Solder pins

M721



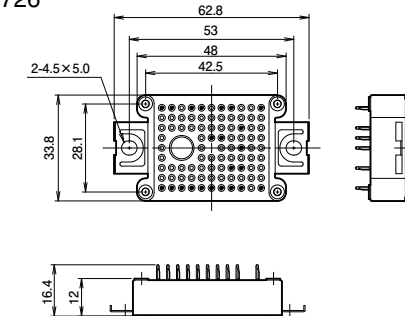
Press fit pins

M722



Press fit pins

M726



Press fit pins

M727

Technical drawing of the M727 connector showing top, side, and front views with dimensions.

Top View Dimensions:

- Overall width: 56.7
- Inner width: 51
- Overall height: 62.8
- Inner height: 53
- Distance from top edge to center of top pin: 48
- Distance from bottom edge to center of bottom pin: 42.5

Side View Dimensions:

- Overall height: 16.4
- Distance from top edge to top of pin array: 12

Front View Dimensions:

- Pin pitch: 2.50 x 4.5

Press fit pins

Technical drawing of the M728 component, showing top and side views with dimensions.

Top View Dimensions:

- Overall width: 62.8
- Width of central pin array: 53
- Width of mounting tabs: 48
- Width of central pin array (inner): 42.5
- Overall height: 33.8
- Height of central pin array: 28.1
- Pin pitch (indicated by a leader line): 2.45×5.0

Side View Dimensions:

- Overall height: 15.5
- Height of central pin array: 12

Other Features:

- The component has a central array of pins and four mounting tabs (two on the left, two on the right).
- A detail view on the right shows the profile of the mounting tabs.
- The label "Solder pins" is located below the side view.

M729

56.7

51

62.8

53

48

42.5

2-5.0 x 4.5

11.5

12

Solder pins

Technical drawing of the M730 connector, showing dimensions and a detail view of the press fit pins.

Top View Dimensions:

- Overall width: 62.8
- Inner width: 53
- Width of central pin array: 48
- Width of outer pin array: 42.5
- Overall height: 33.8
- Height of central pin array: 28.1
- Pin pitch (center-to-center): 2.45 × 5.0

Side View Dimensions:

- Overall height: 16.4
- Height of main body: 12
- Height of base: 1.6

Detail View: A side view of the press fit pins, showing their arrangement and the housing structure.

Press fit pins

M731

Technical drawing of the M731 connector showing top, side, and front views with dimensions.

Top View Dimensions:

- Overall width: 56.7
- Pin array width: 51
- Overall height: 62.8
- Pin array height: 53
- Mounting tab width: 48
- Pin array height (inner): 42.5

Side View Dimensions:

- Pin pitch: 1.6
- Pin height: 12
- Overall height: 16.4

Front View Dimensions:

- Pin pitch: 2.5.0 x 4.5

Press fit pins

Technical drawing of the M732 component, showing top, side, and end views with dimensions in millimeters.

Top View Dimensions:

- Overall width: 62.8
- Width of central pin array: 53
- Width of mounting tabs: 48
- Width of central pin array (excluding mounting holes): 42.5
- Mounting hole diameter: $2-4.5 \times 5.0$
- Distance from mounting hole to center of pin array: 33.8
- Distance from mounting hole to center of pin array (excluding mounting hole): 28.1

Side View Dimensions:

- Overall height: 15.5
- Height of mounting tab: 12
- Height of mounting tab (excluding mounting hole): 1.0

End View: Shows the component's profile with a central slot and mounting tabs.

Solder pins

M733

56.7
51
62.8
53
48
42.5
2-5.0 x 4.5
1.6
12
15.5

Solder pins

Technical drawing of the M1202 component, showing top and side views with dimensions.

Top View Dimensions:

- Overall width: 122
- Inner width: 110
- Distance between mounting holes: 94.5
- Overall height: 57.5
- Inner height: 39.9
- Distance between mounting holes (vertical): 50
- Mounting hole diameter: $\phi 5.5$
- Mounting hole offset: 4-R2.25
- Inner width (excluding mounting holes): 99.6

Side View Dimensions:

- Overall height: 21.3
- Mounting hole offset: 1.7
- Mounting hole diameter: $\phi 5.5$
- Mounting hole offset: 2.5
- Mounting hole offset: 1.5
- Mounting hole offset: 4

Press fit pins

Technical drawing of the M1203 component, showing top and side views with dimensions.

Top View Dimensions:

- Overall width: 122
- Inner width: 110
- Distance from side to mounting hole center: 94,5
- Distance from top to mounting hole center: 62
- Distance from bottom to mounting hole center: 50
- Distance between mounting holes (width): 99,6
- Distance between mounting holes (height): 39,2
- Mounting hole diameter: $\varnothing 5,5$
- Mounting hole diameter: $4-R2,25$

Side View Dimensions:

- Overall height: 20,5
- Mounting hole diameter: $\varnothing 5,5$
- Distance from bottom to mounting hole center: 17
- Distance from top to mounting hole center: 1,5
- Distance from top to mounting hole center: (3,5)
- Distance from top to mounting hole center: 2,5
- Distance from top to mounting hole center: 1,5
- Distance from top to mounting hole center: 1

Labels:

- Solder pins

[illegible][illegible]

Technical drawing of the P630 component, showing top and side views with dimensions.

Top View Dimensions:

- Overall width: 128.5
- Overall height: 119.5
- Inner width: 107.4
- Inner height: 107.4
- Top edge segments: 1, 5, 9, 13, 19
- Bottom edge segments: 2, 22, 22, 22, 25
- Left side segments: 18.35, 21, 21, 14.3
- Right side segments: 38.65, 84, 36.4
- Mounting holes: 2- $\phi 2.5$ (top right), 2- $\phi 4.5$ (right side), 2 (bottom center)
- Labels: N, P, B, U, V, W
- Center dimensions: 116 (width), 116 (height)

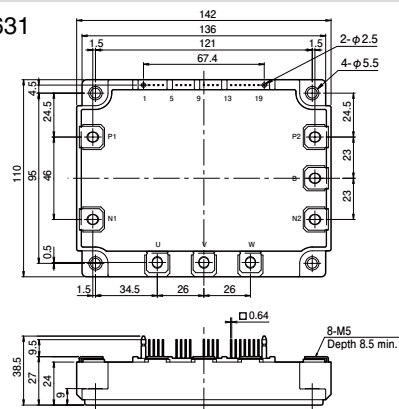
Side View Dimensions:

- Overall height: 14
- Mounting hole depth: 6-M4, Depth 8 min.
- Top edge segments: 9, 7
- Bottom edge segments: 10.9, 5.1
- Overall width: 125
- Feature: $\square 0.64$

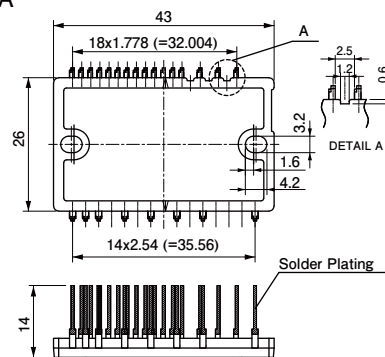
33

Package Outlines, mm

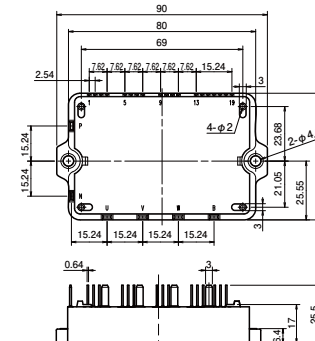
P631



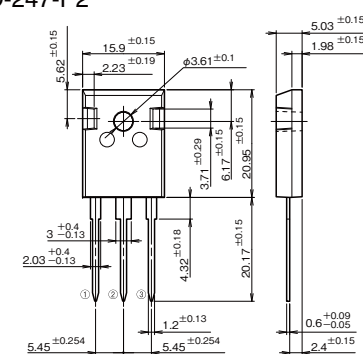
P633A



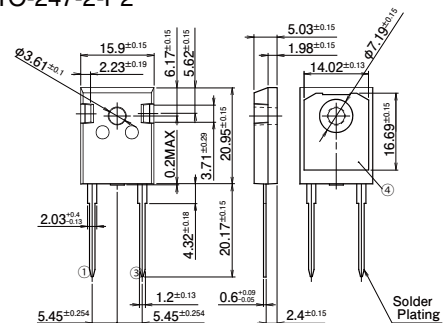
P636



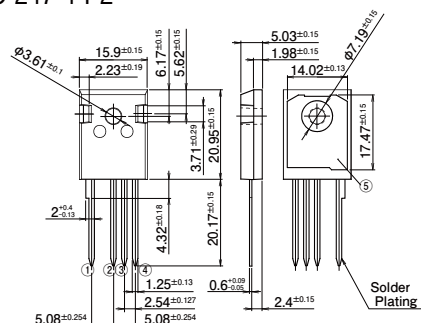
TO-247-P2



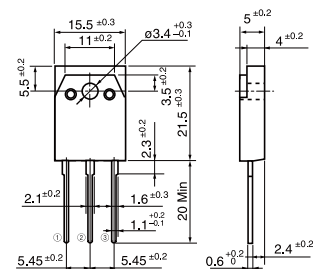
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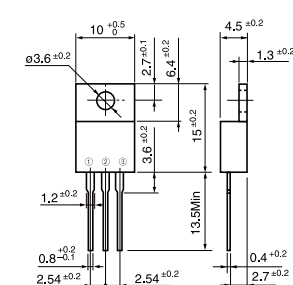
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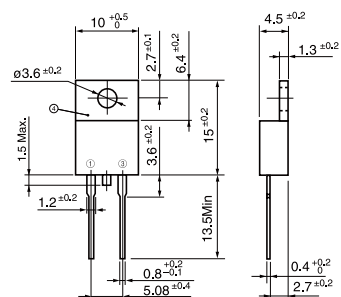
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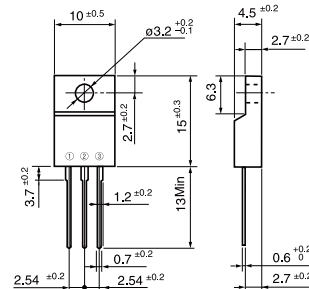
TO-220



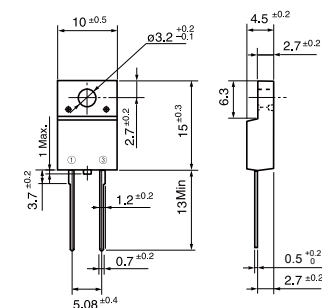
TO-220-2



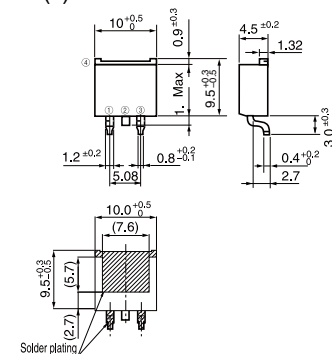
TO-220F



TO-220F-2



T-Pack(s)



Package Outlines, mm

Package Outlines, mm

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