



## IGBTモジュールの特長 Features of the IGBT Module

### ■特長 Features

- パッケージ小型化と出力のパワー UP を実現！
  - ・ 高性能、低損失な第六世代 V シリーズ IGBT チップ・FWD を使用
  - ・ Tj max175°C、連続動作保証 150°C
- 環境に優しいモジュール
  - ・ 豊富な組立性、ハンダレス組立への対応
  - ・ RoHS 対応（一部除外）
- ターンオン特性
  - ・ ノイズー損失トレードオフの改善
  - ・ dv/dt, dic/dt 低減によるノイズ・振動の抑制
- ターンオフ特性
  - ・ ソフトスイッチング特性・ターンオフ振動の抑制
- A compact design allows for greater power output
- High performance 6th gen. V series IGBT/FWD chipset
- Tj(max.)=175°C, Tj(op)=150°C
- Environmentally friendly modules
- Easy assemblage, solder free options
- RoHS compliant (Some parts are exceptional. See Part numbers.)
- Turn-on switching characteristics
- Improved noise-loss trade-off
- Reduced turn-on dv/dt, excellent turn-on dic/dt
- Turn-off switching characteristic
- Soft switching behavior, turn-off oscillation free

### ■製品系列 Product lineup

Number of IGBT Switches	Products Category	Page	Internal Configuration				Max V <sub>CE</sub>				Rated Current					
			IGBT Module				600V	1200V	1700V	3300V	≤50A	>50A ≤150A	>150A ≤300A	>300A ≤600A	>600A ≤1200A	>1200A
			Standard Module	Power Integrated Module	Intelligent Power Module	Discrete IGBT										
1	Standard 1-pack	5	✓				✓						✓	✓		
	Chopper	5	✓			✓	✓			✓	✓	✓				
2	Standard 2-pack	6				✓	✓	✓			✓	✓	✓			
		7	✓				✓	✓				✓	✓			
1,2	High Speed Module	8	✓				✓				✓	✓	✓			
	High Power Module	9	✓				✓	✓	✓				✓	✓	✓	
	PrimePACK™	10	✓				✓	✓					✓	✓	✓	
6	6-pack	12				✓	✓	✓		✓	✓	✓				
		13	✓				✓	✓				✓	✓			
4,12	AT-NPC 3 level	14	Reverse-Blocking IGBTs are integrated.				✓	✓			✓	✓	✓	✓	✓	
1	Discrete RB-IGBT	15				✓					✓					
7	PIM	16		✓			✓	✓		✓	✓					
		17					✓	✓		✓	✓					
6,7	IPM	19			✓		✓			✓		✓	✓			
		20					✓	✓		✓	✓	✓	✓			
1	Discrete IGBT	24				✓	✓			✓	✓	✓	✓			
2	IPM for EV/HEV	25			✓		✓						✓			
6	6-pack for EV/HEV	25	✓				✓						✓			

注: PrimePACK™ はInfineon Technologies社の登録商標です。  
 Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.

### ■型式の見方 Part numbers

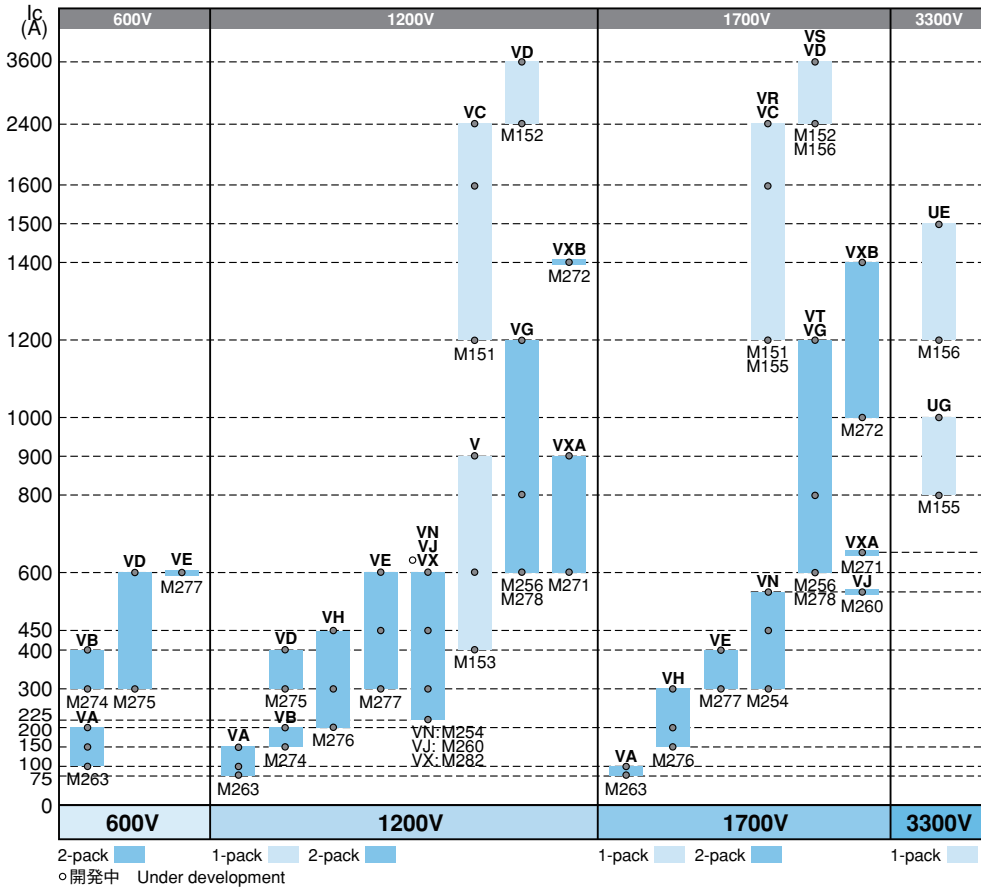
2MBI300VH-120-50 (example)

2	MB	I	300	V	H	120	50
IGBT スイッチ数 Number of IGBT Switches	IGBT モジュール IGBT Module	内部構成 Internal Configuration	Rated Current 定格電流	IGBT デバイス IGBT Device Technology	パッケージ Package Type	最大電圧 Max. V <sub>CE</sub>	RoHS compliant
		I: Standard Modules	× 1	V: V series (6th Generation)	See the Products Map on the next pages	060: 600V	None, 01 to 49 Non RoHS Compliant
		R: Power Integrated Modules		U: U series (5th Generation)		120: 1200V	50 to 99 RoHS Compliant
		P: Intelligent Power Modules				170: 1700V	
						330: 3300V	

製品系列マップ Products Map

IGBT

● 1-pack / 2-pack Products Map



**1-pack**

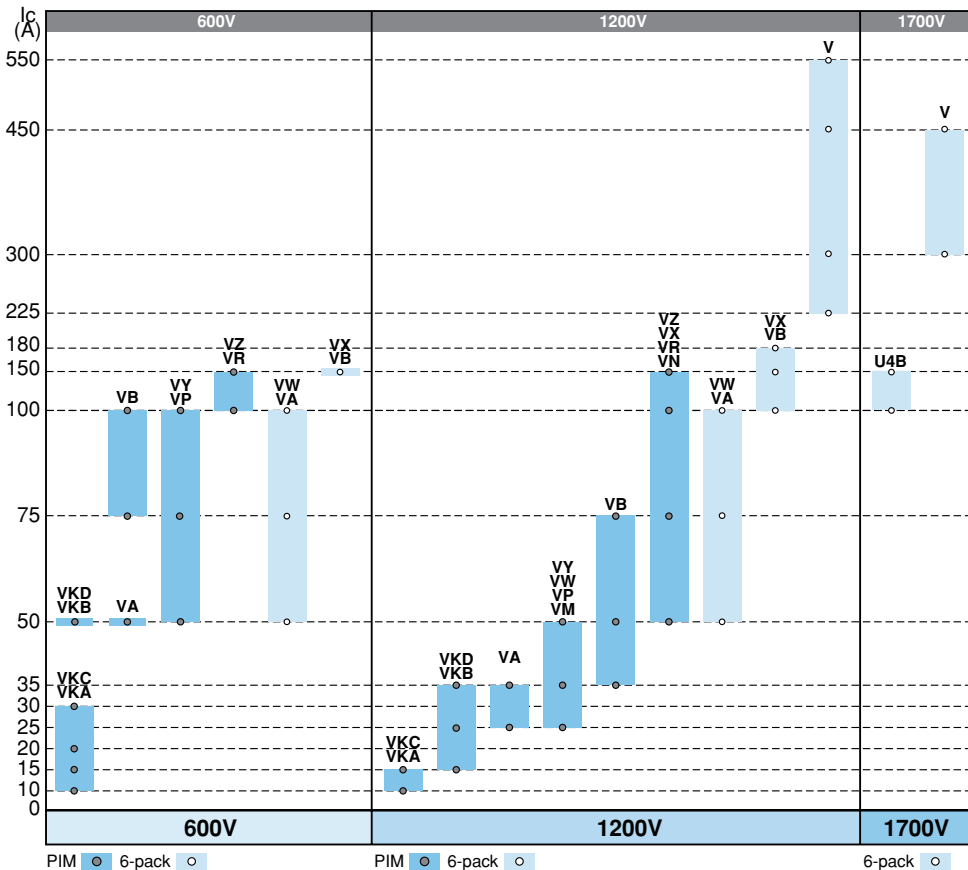
1MBI Ic	IGBT series & Package type	Vces
V	62 × 108 mm	Standard Pack
VC, VR, UG	140 × 130 mm	High Power Module
VD, VS, UE	140 × 190 mm	High Power Module

**2-pack**

2MBI Ic	IGBT series & Package type	Vces
VA	34 × 94 mm	Standard Pack
VB	45 × 92 mm	
VD	62 × 108 mm	
VE	80 × 110 mm	
VH	62 × 108 mm	
VJ, VN, VX	62 × 150 mm	High Power Module
VG, VT	140 × 130 mm	
VXA	89 × 172 mm	PrimePACK™
VXB	89 × 250 mm	

PrimePACK™はInfineon Technologies社の登録商標です。  
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● PIM & 6-pack Products Map



**Power Integrated Module**

7MBR Ic	IGBT series & Package type	Vces
VKA, VKC	33.8 × 62.8 mm	Standard Pack
VKB, VKD	56.7 × 62.8 mm	
VA, VM, VP, VW, VY	45 × 107.5 mm	
VB, VN, VR, VX, VZ	62 × 122 mm	

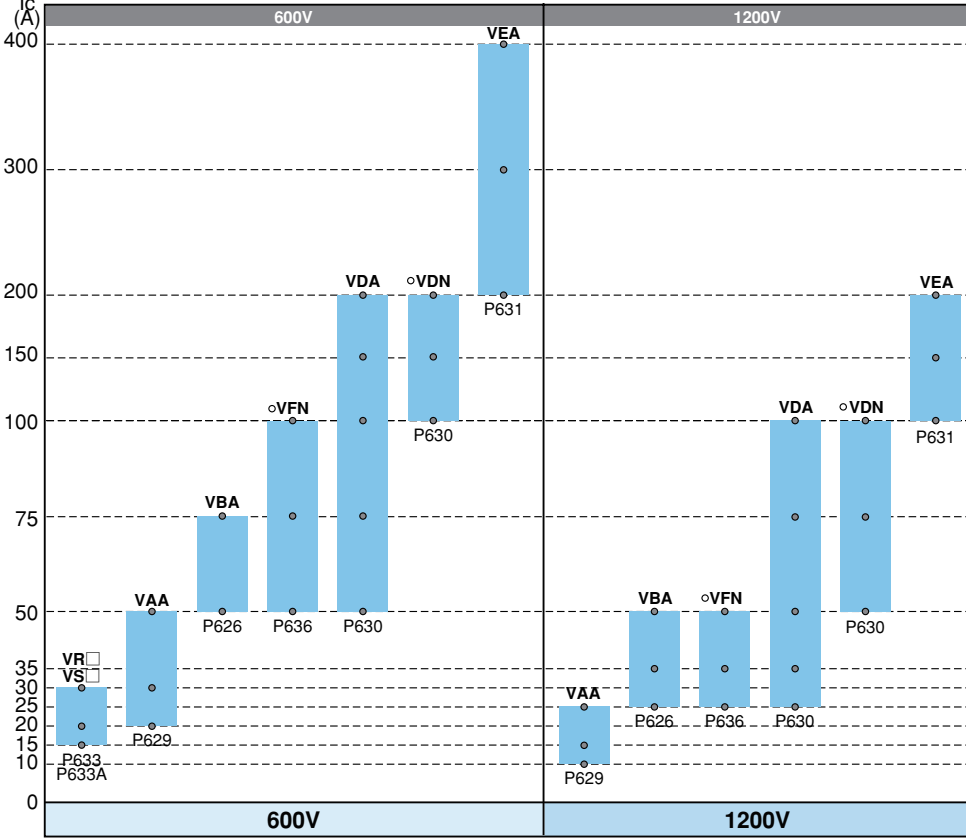
**6-pack**

6MBI Ic	IGBT series & Package type	Vces
VA, VW	45 × 107.5 mm	Standard Pack
VB, VX, U4B	62 × 122 mm	
V	150 × 162 mm	



製品系列マップ Products Map

● Intelligent Power Module Products Map

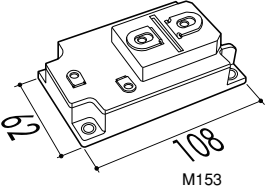
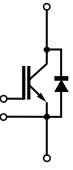


IGBT series & Package type	- Vces	7 in 1	6 in 1
VR□, VS□	26 × 43 mm	-	○
VAA	49.5 × 70 mm	-	○
VBA	50.2 × 87 mm	-	○
VDA, VDN	84 × 128.5 mm	○	○
VEA	110 × 142 mm	○	○
VFN*	55 × 90 mm	○	○

VR□, VS□, type is Small IPM with High Voltage Driver-IC.  
 Thermal impedance of VDN type is lower than VDA type.  
 Thermal impedance of VFN type is lower than VBA type.

○開発中 Under development

■ 1個組 1200Vクラス Standard 1-pack 1200 volts class

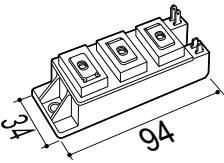
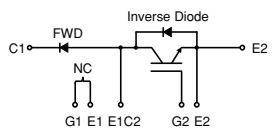
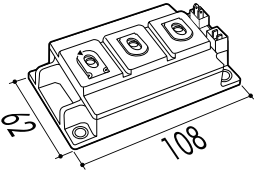
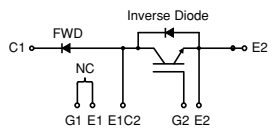
 <p>M153</p>		1200V	
		V series	
		Aluminium oxide DCB	Aluminium nitride DCB
		400A <b>1MBI400V-120-50</b>	<b>1MBI400VF-120-50</b>
		600A <b>1MBI600V-120-50</b>	<b>1MBI600VF-120-50</b>
		900A <b>1MBI900V-120-50</b>	

Dimension [mm]

型 式 Device type	V <sub>CES</sub> Volts	V <sub>GES</sub> Volts	I <sub>C</sub> Amps.	P <sub>C</sub> Watts	V <sub>CE(sat)</sub> Typ.	I <sub>C</sub> Amps.	スイッチングタイム Switching time			パッケージ Package	質量 Net mass Grams
							ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.		
<b>1MBI400V-120-50</b>	1200	±20	400	2410	1.75	400	0.60	1.10	0.14	M153	380
<b>1MBI600V-120-50</b>	1200	±20	600	3000	1.75	600	0.70	0.90	0.10	M153	380
<b>1MBI900V-120-50</b>	1200	±20	900	4280	1.90	900	0.70	0.85	0.10	M153	380
<b>1MBI400VF-120-50</b>	1200	±20	400	3330	1.75	400	0.60	1.10	0.14	M153	380
<b>1MBI600VF-120-50</b>	1200	±20	600	4680	1.75	600	0.70	0.90	0.10	M153	380

V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip

■ チョッパー 600V, 1200Vクラス Chopper 600, 1200 volts class

 <p>M262</p>		I <sub>C</sub>	600V	1200V	
			U series	U series	V series
			50A	<b>1MBI50U4F-120L-50</b>	
			75A	<b>1MBI75U4F-120L-50</b>	
 <p>M259</p>		100A	<b>1MBI100U4F-120L-50</b>		
		150A		<b>1MBI150VA-120L-50</b>	
		200A		<b>1MBI200U4H-120L-50</b>	
		300A	<b>1MBI300U2H-060L-50</b>		

Dimension [mm]

型 式 Device type	V <sub>CES</sub> Volts	V <sub>GES</sub> Volts	I <sub>C</sub> Amps.	P <sub>C</sub> Watts	V <sub>CE(sat)</sub> Typ.	I <sub>C</sub> Amps.	スイッチングタイム Switching time			パッケージ Package	質量 Net mass Grams
							ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.		
<b>1MBI300U2H-060L-50</b>	600	±20	300	1000	2.45	300	0.40	0.48	0.07	M259	360
<b>1MBI50U4F-120L-50</b>	1200	±20	50	400	2.15	50	0.32	0.41	0.07	M262	180
<b>1MBI75U4F-120L-50</b>	1200	±20	75	400	2.20	75	0.32	0.41	0.07	M262	180
<b>1MBI100U4F-120L-50</b>	1200	±20	100	540	2.20	100	0.32	0.41	0.07	M262	180
<b>1MBI200U4H-120L-50</b>	1200	±20	200	1040	2.25	200	0.32	0.41	0.07	M259	360
● <b>1MBI150VA-120L-50</b>	1200	±20	150	785	1.85	150	0.60	0.60	0.04	M262	180

●:新製品 New Products

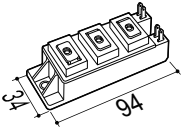
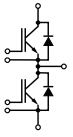
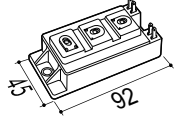
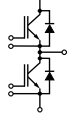
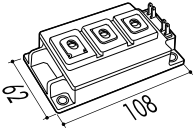
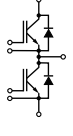
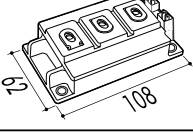
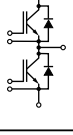
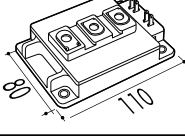
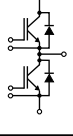
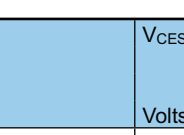
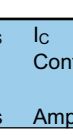
V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip

記号 Letter symbols

V <sub>CES</sub> : コレクタ・エミッタ間電圧	Collector-to-emitter rated voltage (Gate-to-emitter short-circuited)	P <sub>C</sub> : 最大損失	Maximum power dissipation
V <sub>GES</sub> : ゲート・エミッタ間電圧	Gate-to-emitter rated voltage (Collector-to-emitter short-circuited)	V <sub>CE(sat)</sub> : コレクタ・エミッタ飽和電圧	Collector-to-emitter saturation voltage
I <sub>C</sub> : コレクタ電流	Rated collector current	ton: ターンオン時間	Turn-on time
		toff: ターンオフ時間	Turn-off time
		tr: 立下り時間	Fall time



■ 2個組 600V, 1200V, 1700Vクラス Standard 2-pack 600, 1200, 1700 volts class

 M263		Ic	600V	1200V	1700V
			V series	V series	V series
 M274		75A		2MBI75VA-120-50	2MBI75VA-170-50
		100A	2MBI100VA-060-50	2MBI100VA-120-50	2MBI100VA-170-50
		150A	2MBI150VA-060-50	2MBI150VA-120-50	
		200A	2MBI200VA-060-50		
 M275		150A		2MBI150VB-120-50	
		200A		2MBI200VB-120-50	
		300A	2MBI300VB-060-50		
		400A	2MBI400VB-060-50		
 M276		300A		2MBI300VD-120-50	
		400A	2MBI400VD-060-50	2MBI400VD-120-50	
		600A	2MBI600VD-060-50		
 M277		150A			2MBI150VH-170-50
		200A		2MBI200VH-120-50	2MBI200VH-170-50
		300A		2MBI300VH-120-50	2MBI300VH-170-50
		450A		2MBI450VH-120-50	
 M278		300A		2MBI300VE-120-50	2MBI300VE-170-50
		400A			2MBI400VE-170-50
		450A		2MBI450VE-120-50	
		600A	2MBI600VE-060-50	2MBI600VE-120-50	

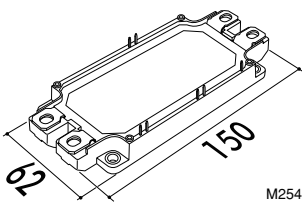
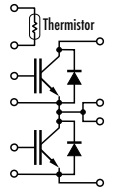
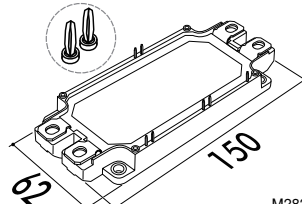
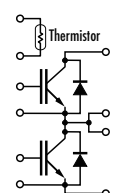
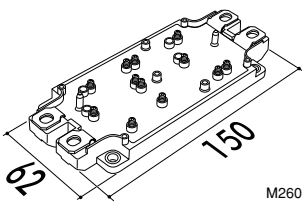
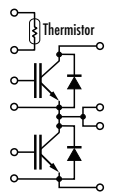
Dimension [mm]

型式 Device type	V <sub>CES</sub> Volts	V <sub>GES</sub> Volts	I <sub>c</sub> Cont. Amps.	P <sub>c</sub> Watts	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V)		スイッチングタイム Switching time			パッケージ 質量 Package Net mass	
					Typ. Volts	I <sub>c</sub> Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.		Grams
2MBI100VA-060-50	600	±20	100	330	1.60	100	0.65	0.60	0.04	M263	180
2MBI150VA-060-50	600	±20	150	480	1.60	150	0.65	0.60	0.04	M263	180
2MBI200VA-060-50	600	±20	200	640	1.60	200	0.65	0.60	0.04	M263	180
2MBI300VB-060-50	600	±20	300	1360	1.60	300	0.65	0.60	0.07	M274	240
2MBI400VB-060-50	600	±20	400	1970	1.60	400	0.65	0.60	0.07	M274	240
2MBI400VD-060-50	600	±20	400	1970	1.60	400	0.65	0.60	0.07	M275	370
2MBI600VD-060-50	600	±20	600	2940	1.60	600	0.75	0.75	0.07	M275	370
2MBI600VE-060-50	600	±20	600	2940	1.60	600	0.75	0.75	0.07	M277	470
2MBI75VA-120-50	1200	±20	75	390	1.85	75	0.60	0.60	0.04	M263	180
2MBI100VA-120-50	1200	±20	100	555	1.85	100	0.60	0.60	0.04	M263	180
2MBI150VA-120-50	1200	±20	150	785	1.85	150	0.60	0.60	0.04	M263	180
2MBI150VB-120-50	1200	±20	150	1070	1.85	150	0.60	0.80	0.08	M274	240
2MBI200VB-120-50	1200	±20	200	1500	1.75	200	0.60	0.80	0.08	M274	240
2MBI300VD-120-50	1200	±20	300	2200	1.85	300	0.60	0.80	0.08	M275	370
2MBI400VD-120-50	1200	±20	400	3330	1.75	400	0.60	0.80	0.08	M275	370
2MBI200VH-120-50	1200	±20	200	1110	1.75	200	0.60	0.80	0.08	M276	370
2MBI300VH-120-50	1200	±20	300	1600	1.75	300	0.60	0.80	0.08	M276	370
2MBI450VH-120-50	1200	±20	450	2400	1.80	450	0.60	0.80	0.08	M276	370
2MBI300VE-120-50	1200	±20	300	2200	1.85	300	0.60	0.80	0.08	M277	470
2MBI450VE-120-50	1200	±20	450	3350	1.80	450	0.60	0.80	0.08	M277	470
2MBI600VE-120-50	1200	±20	600	4800	1.75	600	0.60	0.80	0.08	M277	470
2MBI75VA-170-50	1700	±20	75	555	2.00	75	1.25	1.30	0.15	M263	180
2MBI100VA-170-50	1700	±20	100	665	2.00	100	1.25	1.30	0.15	M263	180
2MBI150VH-170-50	1700	±20	150	1110	2.00	150	0.95	1.05	0.14	M276	370
2MBI200VH-170-50	1700	±20	200	1250	2.00	200	1.15	1.05	0.14	M276	370
2MBI300VH-170-50	1700	±20	300	1805	2.00	300	1.15	1.05	0.14	M276	370
● 2MBI300VE-170-50	1700	±20	300	2830	2.00	300	1.15	1.05	0.14	M277	470
● 2MBI400VE-170-50	1700	±20	400	3840	2.00	400	1.15	1.05	0.14	M277	470

●: 新製品 New Products

V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip

■ 2個組 1200V, 1700Vクラス Standard 2-pack 1200, 1700 volts class

With NTC, solder pins	 M254		Ic	1200V	1700V
				V series	V series
With NTC, Pressfit pins	 M282		225A	<b>2MBI225VN-120-50</b>	<b>2MBI225VN-170-50</b>
			300A	<b>2MBI300VN-120-50</b>	<b>2MBI300VN-170-50</b>
			450A	<b>2MBI450VN-120-50</b>	<b>2MBI450VN-170-50</b>
			550A		<b>2MBI550VN-170-50</b>
			600A	<b>2MBI600VN-120-50</b>	
With NTC, spring contacts	 M260		225A	<b>2MBI225VJ-120-50</b>	
			300A	<b>2MBI300VJ-120-50</b>	
			450A	<b>2MBI450VJ-120-50</b>	
			550A		<b>2MBI550VJ-170-50</b>
			600A	<b>2MBI600VJ-120-50</b>	

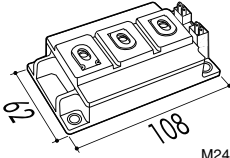
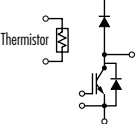
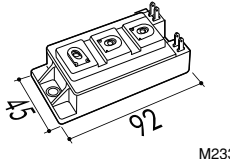
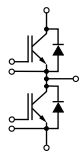
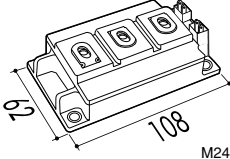
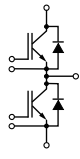
Dimension [mm]

型 式 Device type	V <sub>CEs</sub> Volts	V <sub>GES</sub> Volts	I <sub>c</sub> Cont. Amps.	P <sub>c</sub> Watts	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V) Typ.		スイッチングタイム Switching time			パッケージ 質量 Package Net mass	
					V <sub>CE(sat)</sub> Volts	I <sub>c</sub> Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.	Package	Net mass Grams
<b>2MBI225VN-120-50</b>	1200	±20	225	1070	1.85	225	0.55	1.05	0.11	M254	350
<b>2MBI300VN-120-50</b>	1200	±20	300	1595	1.75	300	0.55	1.05	0.11	M254	350
<b>2MBI450VN-120-50</b>	1200	±20	450	2270	1.75	450	0.55	1.05	0.11	M254	350
<b>2MBI600VN-120-50</b>	1200	±20	600	3750	1.85	600	0.55	1.05	0.11	M254	350
○ <b>2MBI225VX-120-50</b>	1200	±20	225	1070	1.85	225	0.55	1.05	0.11	M282	350
○ <b>2MBI300VX-120-50</b>	1200	±20	300	1595	1.85	300	0.55	1.05	0.11	M282	350
○ <b>2MBI450VX-120-50</b>	1200	±20	450	2270	1.85	450	0.55	1.05	0.11	M282	350
○ <b>2MBI600VX-120-50</b>	1200	±20	600	3750	1.85	600	0.55	1.05	0.11	M282	350
<b>2MBI225VJ-120-50</b>	1200	±20	225	1070	1.85	225	0.55	1.05	0.11	M260	360
<b>2MBI300VJ-120-50</b>	1200	±20	300	1595	1.75	300	0.55	1.05	0.11	M260	360
<b>2MBI450VJ-120-50</b>	1200	±20	450	2270	1.75	450	0.55	1.05	0.11	M260	360
<b>2MBI600VJ-120-50</b>	1200	±20	600	3750	1.85	600	0.55	1.05	0.11	M260	360
<b>2MBI300VN-170-50</b>	1700	±20	300	1665	2.00	300	0.90	1.30	0.10	M254	350
<b>2MBI450VN-170-50</b>	1700	±20	450	2500	2.00	450	0.90	1.30	0.10	M254	350
<b>2MBI550VN-170-50</b>	1700	±20	550	3750	2.15	550	1.00	1.30	0.10	M254	350
○ <b>2MBI225VX-170-50</b>	1700	±20	225	1250	2.00	225	0.90	1.20	0.10	M282	350
○ <b>2MBI300VX-170-50</b>	1700	±20	300	1665	2.00	300	0.90	1.30	0.10	M282	350
○ <b>2MBI450VX-170-50</b>	1700	±20	450	2500	2.00	450	0.90	1.30	0.10	M282	350
○ <b>2MBI550VX-170-50</b>	1700	±20	550	3750	2.15	550	1.00	1.30	0.10	M282	350
<b>2MBI550VJ-170-50</b>	1700	±20	550	3750	2.15	550	1.00	1.30	0.10	M260	360

○ : 開発中 Under development

V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip

## ■高速IGBTモジュール 1200Vクラス High Speed 1200 volts class

Chopper		1200V	
		High Speed IGBT	
 M249		Ic	
		200A	<b>1MBI200HH-120L-50</b>
		300A	<b>1MBI300HH-120L-50</b>
		400A	<b>1MBI400HH-120L-50</b>
2-pack		100A	<b>2MBI100HB-120-50</b>
 M233			
2-pack		150A	<b>2MBI150HH-120-50</b>
 M249		200A	<b>2MBI200HH-120-50</b>

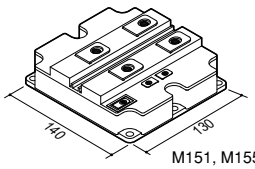
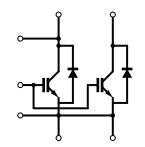
Dimension [mm]

型 式 Device type	V <sub>CES</sub> Volts	V <sub>GES</sub> Volts	I <sub>c</sub> Cont. Amps.	P <sub>C</sub> Watts	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V)		スイッチングタイム Switching time			パッケージ 質量 Package Net mass	
					Typ. Volts	I <sub>c</sub> Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.		Grams
<b>1MBI200HH-120L-50</b>	1200	±20	200	1390	3.10	200	0.2	0.3	0.05	M249	370
<b>1MBI300HH-120L-50</b>	1200	±20	300	2090	3.20	300	0.2	0.3	0.05	M249	370
<b>1MBI400HH-120L-50</b>	1200	±20	400	2500	3.10	400	0.2	0.4	0.05	M249	370
<b>2MBI100HB-120-50</b>	1200	±20	100	1040	3.10	100	-	0.30	0.05	M233	240
<b>2MBI150HH-120-50</b>	1200	±20	150	1390	3.20	150	-	0.30	0.05	M249	370
<b>2MBI200HH-120-50</b>	1200	±20	200	1790	3.10	200	-	0.30	0.05	M249	370

 V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip

■ハイパワーモジュール 1200V, 1700V, 3300Vクラス

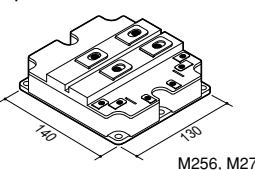
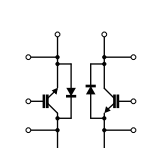
High Power Module 1200, 1700, 3300 volts class

1-pack	 M151, M155		1200V		1700V		3300V
			V series		V series		U Series
			Cu-baseplate		Cu-baseplate	AlSiC-baseplate	AlSiC-baseplate
			Ic				
			800A				1MBI800UG-330
			1000A				1MBI1000UG-330
			1200A	1MBI1200VC-120P	1MBI1200VC-170E	1MBI1200VR-170E	
			1600A	1MBI1600VC-120P	1MBI1600VC-170E	1MBI1600VR-170E	
			2400A	1MBI2400VC-120P	1MBI2400VC-170E	1MBI2400VR-170E	
			1200A				1MBI1200UE-330
			1500A				1MBI1500UE-330
			2400A	1MBI2400VD-120P	1MBI2400VD-170E	1MBI2400VS-170E	
			3600A	1MBI3600VD-120P	1MBI3600VD-170E	1MBI3600VS-170E	

Dimension [mm]

型 式 Device type	V <sub>CES</sub>	V <sub>GES</sub>	I <sub>c</sub> Cont.	P <sub>c</sub> Watts	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V)		スイッチングタイム Switching time			パッケージ Package	質量 Net mass
					Typ.	I <sub>c</sub>	ton Typ.	toff Typ.	tf Typ.		
	Volts	Volts	Amps.		Volts	Amps.	µsec.	µsec.	µsec.		Grams
1MBI1200VC-120P	1200	±20	1200	7890	1.70	1200	1.73	1.52	0.15	M151	1500
1MBI1600VC-120P	1200	±20	1600	10340	1.70	1600	2.22	1.47	0.19	M151	1500
1MBI2400VC-120P	1200	±20	2400	13630	1.70	2400	3.15	1.93	0.24	M151	1500
1MBI2400VD-120P	1200	±20	2400	15780	1.70	2400	2.38	1.64	0.21	M152	2300
1MBI3600VD-120P	1200	±20	3600	20540	1.70	3600	2.98	2.15	0.27	M152	2300
1MBI1200VC-170E	1700	±20	1200	8820	2.00	1200	2.18	2.20	0.45	M151	1500
1MBI1600VC-170E	1700	±20	1600	11700	2.00	1600	2.28	2.17	0.40	M151	1500
1MBI2400VC-170E	1700	±20	2400	15000	2.00	2400	2.63	2.41	0.38	M151	1500
1MBI2400VD-170E	1700	±20	2400	17640	2.00	2400	2.30	2.22	0.43	M152	2300
1MBI3600VD-170E	1700	±20	3600	22380	2.00	3600	2.27	2.67	0.31	M152	2300
1MBI1200VR-170E	1700	±20	1200	8570	2.00	1200	1.51	2.20	0.45	M155	900
1MBI1600VR-170E	1700	±20	1600	10710	2.00	1600	1.83	2.17	0.40	M155	900
1MBI2400VR-170E	1700	±20	2400	14010	2.00	2400	2.51	2.41	0.38	M155	900
1MBI2400VS-170E	1700	±20	2400	16120	2.00	2400	2.09	2.22	0.43	M156	1300
1MBI3600VS-170E	1700	±20	3600	21120	2.00	3600	2.70	2.66	0.32	M156	1300
1MBI800UG-330	3300	±20	800	9600	2.28	800	3.40	2.40	0.40	M155	900
1MBI1000UG-330	3300	±20	1000	10400	2.46	1000	2.50	2.00	0.50	M155	900
1MBI1200UE-330	3300	±20	1200	14700	2.28	1200	3.40	2.40	0.40	M156	1300
1MBI1500UE-330	3300	±20	1500	15600	2.46	1500	3.10	2.00	0.50	M156	1300

Note: M151, M152: Cu-baseplate M155, M156: AlSiC-baseplate V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip Switching time: at T<sub>j</sub>=125°C, at T<sub>j</sub>=150°C (3300V type only)

2-pack	 M256, M278		1200V		1700V		3300V
			V series		V series		U Series
			Cu-baseplate		Cu-baseplate	AlSiC-baseplate	AlSiC-baseplate
			Ic				
			600A	2MBI600VG-120P	2MBI600VG-170E	2MBI600VT-170E	
			800A	2MBI800VG-120P	2MBI800VG-170E	2MBI800VT-170E	
			1200A	2MBI1200VG-120P	2MBI1200VG-170E	2MBI1200VT-170E	

Dimension [mm]

型 式 Device type	V <sub>CES</sub>	V <sub>GES</sub>	I <sub>c</sub> Cont.	P <sub>c</sub> Watts	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V)		スイッチングタイム Switching time			パッケージ Package	質量 Net mass
					Typ.	I <sub>c</sub>	ton Typ.	toff Typ.	tf Typ.		
	Volts	Volts	Amps.		Volts	Amps.	µsec.	µsec.	µsec.		Grams
2MBI600VG-120P	1200	±20	600	3940	1.70	600	1.86	1.25	0.12	M256	1500
2MBI800VG-120P	1200	±20	800	5170	1.70	800	1.97	1.33	0.15	M256	1500
2MBI1200VG-120P	1200	±20	1200	6810	1.70	1200	2.55	1.67	0.16	M256	1500
2MBI600VG-170E	1700	±20	600	4410	2.00	600	2.28	2.07	0.58	M256	1500
2MBI800VG-170E	1700	±20	800	5760	2.00	800	2.41	2.13	0.55	M256	1500
2MBI1200VG-170E	1700	±20	1200	7500	2.00	1200	2.76	2.29	0.33	M256	1500
2MBI600VT-170E	1700	±20	600	4280	2.00	600	1.51	2.07	0.58	M278	900
2MBI800VT-170E	1700	±20	800	5370	2.00	800	2.00	2.13	0.55	M278	900
2MBI1200VT-170E	1700	±20	1200	7040	2.00	1200	2.14	2.29	0.33	M278	900

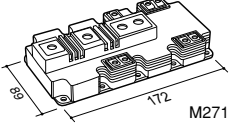


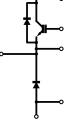
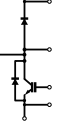
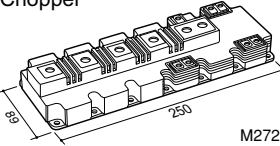


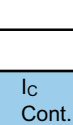

Note: M256: Cu-baseplate M278: AlSiC-baseplate

V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip Switching time: at T<sub>j</sub>=125°C





## PrimePACK™ 1200V, 1700Vクラス PrimePACK™ 1200, 1700 volts class

Chopper	Low Side Thermistor	High Side Thermistor	Ic	1200V		1700V	
				V series		V series	
				Soft turn off Low side configuration	Soft turn off High side configuration	Low switching loss Low side configuration	Low switching loss High side configuration
 M271	 	 	650A			1MBI650VXA-170EL-50	1MBI650VXA-170EH-50
						1MBI650VXA-170EL-54	1MBI650VXA-170EH-54
 M272	 	 	1000A			1MBI1000VXB-170EL-50	1MBI1000VXB-170EH-50
						1MBI1000VXB-170EL-54	1MBI1000VXB-170EH-54
			1400A	1MBI1400VXB-120PL-54	1MBI1400VXB-120PH-54		

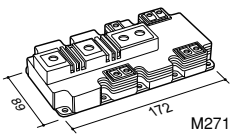


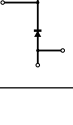
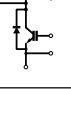
Dimension [mm]

型 式 Device type	V <sub>CES</sub> Volts	V <sub>GES</sub> Volts	I <sub>c</sub> Cont. Amps.	P <sub>c</sub> Watts	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V)		スイッチングタイム Switching time			パッケージ 質量 Package Net mass	
					Typ. Volts	I <sub>c</sub> Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.	Package	Net mass Grams
1MBI1400VXB-120PL-54	1200	±20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
1MBI1400VXB-120PH-54	1200	±20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
1MBI650VXA-170EL-50	1700	±20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI650VXA-170EL-54	1700	±20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI1000VXB-170EL-50	1700	±20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
1MBI1000VXB-170EL-54	1700	±20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
1MBI650VXA-170EH-50	1700	±20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI650VXA-170EH-54	1700	±20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI1000VXB-170EH-50	1700	±20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
1MBI1000VXB-170EH-54	1700	±20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250

注: PrimePACK™はInfineon Technologies社の登録商標です。  
-54…V<sub>sat</sub>及びV<sub>F</sub>のランクをラベルに表示

V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip

Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.  
The products with suffix '-54' on this page are labeled to specify the rank of V<sub>sat</sub> and V<sub>F</sub>.

Chopper	Low Side Thermistor	High Side Thermistor	Ic	1200V		1700V	
				V series		V series	
				Boost (Low side) Chopper	Buck (High side) Chopper	Boost (Low side) Chopper	Buck (High side) Chopper
 M271	 	 	900A	1MBI900VXA-120PD-50	1MBI900VXA-120PC-50		
				1MBI900VXA-120PD-54	1MBI900VXA-120PC-54		

Dimension [mm]

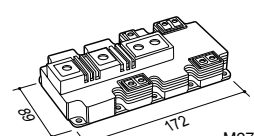
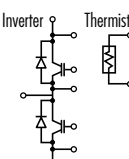
型 式 Device type	V <sub>CES</sub> Volts	V <sub>GES</sub> Volts	I <sub>c</sub> Cont. Amps.	P <sub>c</sub> Watts	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V)		スイッチングタイム Switching time			パッケージ 質量 Package Net mass	
					Typ. Volts	I <sub>c</sub> Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.	Package	Net mass Grams
1MBI900VXA-120PC-50	1200	±20	900	5100	1.65	900	1.10	1.20	0.15	M271	850
1MBI900VXA-120PC-54	1200	±20	900	5100	1.65	900	1.10	1.20	0.15	M271	850
1MBI900VXA-120PD-50	1200	±20	900	5100	1.65	900	1.10	1.20	0.15	M271	850
1MBI900VXA-120PD-54	1200	±20	900	5100	1.65	900	1.10	1.20	0.15	M271	850

注: PrimePACK™はInfineon Technologies社の登録商標です。  
-54…V<sub>sat</sub>及びV<sub>F</sub>のランクをラベルに表示  
逆並列接続ダイオードの電流定格は120Aです。Boost/Buck chopper回路にのみ適用願います。

V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip

Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.  
The products with suffix '-54' on this page are labeled to specify the rank of V<sub>sat</sub> and V<sub>F</sub>.  
Antiparallel diode current rating is 120A. Application circuit is Boost/Buck chopper only.

PrimePACK™ 1200V, 1700Vクラス PrimePACK™ 1200, 1700 volts class

2-pack	 M271		1200V		1700V	
			V series		V series	
			Low switching loss	Soft turn off	Low switching loss	Soft turn off
600A			<b>2MBI600VXA-120E-50</b>			
			<b>2MBI600VXA-120E-54</b>			
650A					<b>2MBI650VXA-170E-50</b>	
					<b>2MBI650VXA-170E-54</b>	
					<b>2MBI650VXA-170EA-50</b>	
					<b>2MBI650VXA-170EA-54</b>	
900A			<b>2MBI900VXA-120E-50</b>	<b>2MBI900VXA-120P-50</b>		
			<b>2MBI900VXA-120E-54</b>	<b>2MBI900VXA-120P-54</b>		
1000A					<b>2MBI1000VXB-170E-50</b>	
					<b>2MBI1000VXB-170E-54</b>	
					<b>2MBI1000VXB-170EA-50</b>	
					<b>2MBI1000VXB-170EA-54</b>	
1400A			<b>2MBI1400VXB-120E-50</b>	<b>2MBI1400VXB-120P-50</b>	<b>2MBI1400VXB-170E-50</b>	<b>2MBI1400VXB-170P-50</b>
			<b>2MBI1400VXB-120E-54</b>	<b>2MBI1400VXB-120P-54</b>	<b>2MBI1400VXB-170E-54</b>	<b>2MBI1400VXB-170P-54</b>

Dimension [mm]

型 式 Device type	V <sub>CEs</sub> Volts	V <sub>GES</sub> Volts	I <sub>c</sub> Cont. Amps.	P <sub>c</sub> Watts	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V)		スイッチングタイム Switching time			パッケージ 質量 Package Net mass	
					Typ. Volts	I <sub>c</sub> Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.	Package	Net mass Grams
<b>2MBI600VXA-120E-50</b>	1200	±20	600	3350	1.75	600	1.00	1.20	0.15	M271	850
<b>2MBI600VXA-120E-54</b>	1200	±20	600	3350	1.75	600	1.00	1.20	0.15	M271	850
<b>2MBI900VXA-120E-50</b>	1200	±20	900	5100	1.75	900	1.00	1.20	0.15	M271	850
<b>2MBI900VXA-120E-54</b>	1200	±20	900	5100	1.75	900	1.00	1.20	0.15	M271	850
● <b>2MBI1400VXB-120E-50</b>	1200	±20	1400	7650	1.75	1400	1.00	1.20	0.15	M272	1250
● <b>2MBI1400VXB-120E-54</b>	1200	±20	1400	7650	1.75	1400	1.00	1.20	0.15	M272	1250
<b>2MBI900VXA-120P-50</b>	1200	±20	900	5100	1.65	900	1.00	1.20	0.15	M271	850
<b>2MBI900VXA-120P-54</b>	1200	±20	900	5100	1.65	900	1.00	1.20	0.15	M271	850
<b>2MBI1400VXB-120E-50</b>	1200	±20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
<b>2MBI1400VXB-120P-54</b>	1200	±20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
<b>2MBI650VXA-170E-50</b>	1700	±20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
<b>2MBI650VXA-170E-54</b>	1700	±20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
● <b>2MBI650VXA-170EA-50</b>	1700	±20	650	4150	2.00	650	1.70	1.60	0.11	M271	850
● <b>2MBI650VXA-170EA-54</b>	1700	±20	650	4150	2.00	650	1.70	1.60	0.11	M271	850
<b>2MBI1000VXB-170E-50</b>	1700	±20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
<b>2MBI1000VXB-170E-54</b>	1700	±20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
● <b>2MBI1000VXB-170EA-50</b>	1700	±20	1000	6250	2.00	1000	1.70	1.60	0.11	M272	1250
● <b>2MBI1000VXB-170EA-54</b>	1700	±20	1000	6250	2.00	1000	1.70	1.60	0.11	M272	1250
<b>2MBI1400VXB-170E-50</b>	1700	±20	1400	8820	2.15	1400	1.25	1.55	0.15	M272	1250
<b>2MBI1400VXB-170E-54</b>	1700	±20	1400	8820	2.15	1400	1.25	1.55	0.15	M272	1250
<b>2MBI1400VXB-170P-50</b>	1700	±20	1400	8820	1.90	1400	1.35	1.80	0.20	M272	1250
<b>2MBI1400VXB-170P-54</b>	1700	±20	1400	8820	1.90	1400	1.35	1.80	0.20	M272	1250

●: 新製品 New Products

V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip

注: PrimePACK™はInfineon Technologies社の登録商標です。

-54...V<sub>sat</sub>及びV<sub>F</sub>のランクをラベルに表示

本ページでEAの付く型式は、ダイオードの負荷が厳しいアプリケーションに対応し、FWDを最適化したことにより、V<sub>F</sub>および熱抵抗を低減。

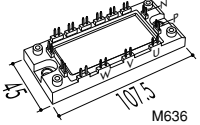
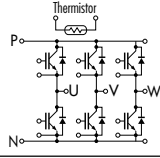
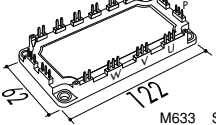
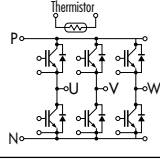
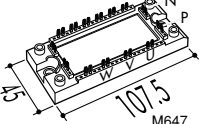
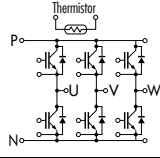
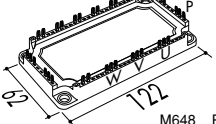
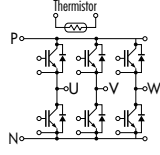
Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.

The products with suffix '-54' on this page are labeled to specify the rank of V<sub>sat</sub> and V<sub>F</sub>.

The products with 'EA' on this page have optimized FWD for the application causing heavy load through FWD. The optimized FWD reduces V<sub>F</sub> and thermal resistance.



6個組 EconoPACK™ 600V, 1200V, 1700Vクラス  
6-pack EconoPACK™ 600, 1200, 1700 volts class

With NTC, solder pins	 M636 Solder pins		Ic	600V	1200V	1700V
				V series	V series	U series
With NTC, solder pins	 M633 Solder pins		100A		6MBI100VB-120-50	6MBI100U4B-170-50
			150A	6MBI150VB-060-50	6MBI150VB-120-50	6MBI150U4B-170-50
			180A		6MBI180VB-120-50	6MBI180VB-120-55
With NTC, press fit pins	 M647 Press fit pins		50A	6MBI50VW-060-50	6MBI50VW-120-50	
			75A	6MBI75VW-060-50	6MBI75VW-120-50	
			100A	6MBI100VW-060-50	6MBI100VW-120-50	
With NTC, press fit pins	 M648 Press fit pins		100A		6MBI100VX-120-50	
			150A	6MBI150VX-060-50	6MBI150VX-120-50	
			180A		6MBI180VX-120-50	6MBI180VX-120-55

Dimension [mm]

型 式 Device type	V <sub>CES</sub> Volts	V <sub>GES</sub> Volts	I <sub>c</sub> Cont. Amps.	P <sub>c</sub> Watts	V <sub>CE(sat)</sub> Typ. Volts	V <sub>GE=15V</sub> I <sub>c</sub> Amps.	スイッチングタイム Switching time			パッケージ 質量 Package Net mass Grams
							ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.	
6MBI50VA-060-50	600	±20	50	200	1.6	50	0.36	0.52	0.03	M636 180
6MBI75VA-060-50	600	±20	75	275	1.6	75	0.36	0.52	0.03	M636 180
6MBI100VA-060-50	600	±20	100	335	1.6	100	0.36	0.52	0.03	M636 180
6MBI150VB-060-50	600	±20	150	485	1.6	150	0.36	0.52	0.03	M633 300
6MBI50VW-060-50	600	±20	50	215	1.6	50	0.36	0.52	0.03	M647 200
6MBI75VW-060-50	600	±20	75	300	1.6	75	0.36	0.52	0.03	M647 200
6MBI100VW-060-50	600	±20	100	335	1.6	100	0.36	0.52	0.03	M647 200
6MBI150VX-060-50	600	±20	150	485	1.6	150	0.36	0.52	0.03	M648 300
6MBI50VA-120-50	1200	±20	50	280	1.85	50	0.39	0.53	0.06	M636 180
6MBI75VA-120-50	1200	±20	75	385	1.85	75	0.39	0.53	0.06	M636 180
6MBI100VA-120-50	1200	±20	100	520	1.75	100	0.39	0.53	0.06	M636 180
6MBI100VB-120-50	1200	±20	100	520	1.75	100	0.39	0.53	0.06	M633 300
6MBI150VB-120-50	1200	±20	150	770	1.75	150	0.39	0.53	0.06	M633 300
6MBI180VB-120-50	1200	±20	150	835	1.85	200	0.39	0.53	0.06	M633 300
6MBI180VB-120-55	1200	±20	150	1075	1.85	200	0.39	0.53	0.06	M633 300
6MBI50VW-120-50	1200	±20	50	280	1.85	50	0.39	0.53	0.06	M647 200
6MBI75VW-120-50	1200	±20	75	385	1.85	75	0.39	0.53	0.06	M647 200
6MBI100VW-120-50	1200	±20	100	520	1.75	100	0.39	0.53	0.06	M647 200
6MBI100VX-120-50	1200	±20	100	520	1.75	100	0.39	0.53	0.06	M648 300
6MBI150VX-120-50	1200	±20	150	770	1.75	150	0.39	0.53	0.06	M648 300
6MBI180VX-120-50	1200	±20	150	835	1.85	200	0.39	0.53	0.06	M648 300
6MBI180VX-120-55	1200	±20	150	1075	1.85	200	0.39	0.53	0.06	M648 300
6MBI100U4B-170-50	1700	±20	100	520	2.25	100	0.62	0.55	0.09	M633 300
6MBI150U4B-170-50	1700	±20	150	735	2.25	150	0.62	0.55	0.09	M633 300

注: EconoPACK™はInfineon Technologies社の登録商標です。

6MBI180VB-120-55, 6MBI180VX-120-55は低熱抵抗パッケージ適用

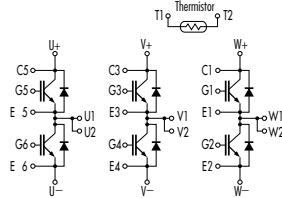
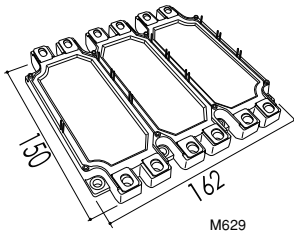
Note: EconoPACK™ is registered trademarks of Infineon Technologies AG, Germany.

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

V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip

■ 6個組 EconoPACK™+ 1200V, 1700Vクラス  
6-pack EconoPACK™+ 1200, 1700 volts class

With NTC, High power 6-pack



Ic	1200V	1700V
	V series	V series
225A	<b>6MBI225V-120-50</b>	
300A	<b>6MBI300V-120-50</b>	<b>6MBI300V-170-50</b>
450A	<b>6MBI450V-120-50</b>	<b>6MBI450V-170-50</b>
550A	<b>6MBI550V-120-50</b>	

Dimension [mm]

型 式 Device type	V <sub>CEs</sub> Volts	V <sub>GES</sub> Volts	I <sub>c</sub> Amps.	P <sub>c</sub> Watts	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V)		スイッチングタイム Switching time			パッケージ 質量 Package Net mass Grams
					Typ.	I <sub>c</sub>	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.	
<b>6MBI225V-120-50</b>	1200	±20	225	1070	1.85	225	0.55	1.05	0.11	M629 950
<b>6MBI300V-120-50</b>	1200	±20	300	1600	1.75	300	0.55	1.05	0.11	M629 950
<b>6MBI450V-120-50</b>	1200	±20	450	2250	1.75	450	0.55	1.05	0.11	M629 950
<b>6MBI550V-120-50</b>	1200	±20	550	2500	1.85	600	0.55	1.05	0.11	M629 950
<b>6MBI300V-170-50</b>	1700	±20	300	1665	2.00	300	0.90	1.30	0.10	M629 950
<b>6MBI450V-170-50</b>	1700	±20	450	2500	2.00	450	0.90	1.30	0.10	M629 950

注: EconoPACK™+はInfineon Technologies社の登録商標です。

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

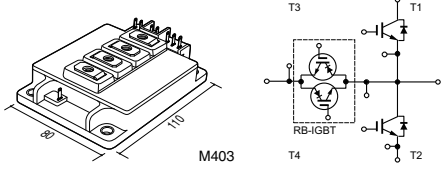
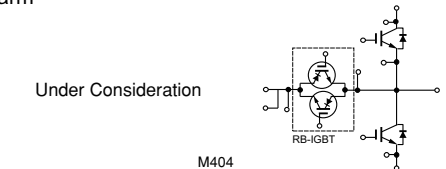
V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip



## ■アドバンスドTタイプNPC3レベル回路 600V, 1200Vクラス Advanced T-type NPC 3-level Circuits 600, 1200 volts class

### ■特長 Features

- 電力変換効率に優れた T タイプ NPC3 レベル回路に対応
- 1 アームまたは 3 アーム (3 相分) を 1 パッケージに搭載、またモジュールの外部配線が容易
- 低パッケージ内部インダクタンスにより低サージ電圧を実現
- AC-SW 部には RB-IGBT を採用、低損失を実現
- メイン SW 部には最新第 6 世代 IGBT,FWD を採用し低損失を実現
- Applicable to T-type NPC 3-level circuit, for highest power conversion efficiency.
- There are 1-arm or 3-arm (3 phase) circuits in one package and it is easier to makes external wiring of module.
- Lower surge voltage by smaller internal package stray inductance.
- Lower power loss can be achieved by using RB-IGBT as for AC-SW device.
- Lowest power loss can be achieved by using 6th Gen. IGBT and FWD as for Main-SW device.

1-arm		Ic	600V		1200V	
			V series	RB-IGBT	V series	RB-IGBT
1-arm		300A			4MBI300VG-120R-50	600V
		400A	4MBI400VG-060R-50	600V	4MBI300VG-120R1-50	900V
					4MBI400VF-120R-50	600V
		450A			4MBI450VB-120R1-50	900V
		650A			4MBI650VB-120R1-50	900V
		900A			4MBI900VB-120R1-50	900V

Dimension [mm]

型 式 Device type	T1, T2					T3, T4					パッケージ Package	質量 Net mass
	V <sub>CES</sub>	I <sub>c</sub>	P <sub>C</sub>	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V)		V <sub>CES</sub>	I <sub>c</sub>	P <sub>C</sub>	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V)			
	Volts	Cont. Amps.	Watts	Typ. Volts	I <sub>c</sub> Amps.	Volts	Cont. Amps.	Watts	Typ. Volts	I <sub>c</sub> Amps.		
4MBI400VG-060R-50	600	400	1135	1.60	400	600	400	1560	2.45	400	M403	460
4MBI300VG-120R-50	1200	300	1250	1.85	300	600	300	1250	2.45	300	M403	460
○ 4MBI300VG-120R1-50	1200	300	1250	1.85	300	900	300	1300	2.40	300	M403	460
○ 4MBI400VF-120R-50	1200	400	1835	2.00	400	600	450	2230	2.45	400	M403	460
○ 4MBI450VB-120R1-50	1200	450	TBD	TBD	450	900	450	TBD	TBD	450	M404	TBD
○ 4MBI650VB-120R1-50	1200	650	TBD	TBD	650	900	650	TBD	TBD	650	M404	TBD
○ 4MBI900VB-120R1-50	1200	900	TBD	TBD	900	900	900	TBD	TBD	900	M404	TBD

○:開発中 Under development

注: 製品名にVFが含まれる型式は低熱抵抗パッケージ適用  
Note: Vf type is lower thermal resistance version.

V<sub>CE(sat)</sub>: at T<sub>j</sub>=25°C, Chip

3-arm	Solder Pins			Ic	600V		1200V	
					V series	RB-IGBT	V series	RB-IGBT
3-arm	PressFit Contacts			50A			<b>12MBI50VN-120-50</b>	<b>600V</b>
				75A			<b>12MBI75VN-120-50</b>	<b>600V</b>
				100A			<b>12MBI100VN-120-50</b>	<b>600V</b>
				50A			<b>12MBI50VX-120-50</b>	<b>600V</b>
				75A			<b>12MBI75VX-120-50</b>	<b>600V</b>
				100A			<b>12MBI100VX-120-50</b>	<b>600V</b>

Dimension [mm]

型 式 Device type	T1, T2					T3, T4					パッケージ Package	質量 Net mass
	V <sub>CES</sub>	I <sub>C</sub>	P <sub>C</sub>	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V)		V <sub>CES</sub>	I <sub>C</sub>	P <sub>C</sub>	V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V)			
	Volts	Cont. Amps.	Watts	Typ. Volts	I <sub>C</sub> Amps.	Volts	Cont. Amps.	Watts	Typ. Volts	I <sub>C</sub> Amps.		
● <b>12MBI50VN-120-50</b>	1200	50	230	1.85	50	600	50	235	2.45	50	M1203	302
● <b>12MBI75VN-120-50</b>	1200	75	320	1.85	75	600	75	305	2.45	75	M1203	302
● <b>12MBI100VN-120-50</b>	1200	100	430	1.75	100	600	100	400	2.45	100	M1203	302
● <b>12MBI50VX-120-50</b>	1200	50	230	1.85	50	600	50	235	2.45	50	M1202	302
● <b>12MBI75VX-120-50</b>	1200	75	320	1.85	75	600	75	305	2.45	75	M1202	302
● <b>12MBI100VX-120-50</b>	1200	100	430	1.75	100	600	100	400	2.45	100	M1202	302

●:新製品 New Products

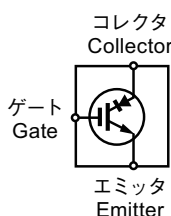
V<sub>CE(sat)</sub>: at T<sub>J</sub>=25°C, Chip

## ■ ディスクリートRB-IGBT Discrete RB-IGBT Reverse Blocking IGBT

### ■ 特長 Features

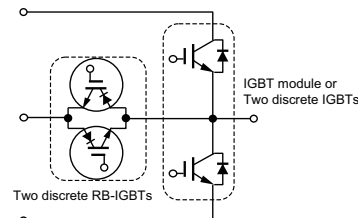
- 富士電機の独自技術により、逆耐圧特性を有する IGBT を 1 チップで実現
- 3 レベルインバータ (T タイプ) への適用で高効率を実現
- 鉛フリー
- Reverse blocking character is realized for 1 chip by Fuji's original technology.
- High efficiency by applying to T-type 3 level inverter circuit.
- Lead Free Package

### ■ 等価回路 Equivalent circuit



### ■ 適用例 Application

- Advanced T-type NPC 3-Level circuits



### ■ 特性 Characteristics

型 式 Device type	絶対最大定格 Maximum Ratings					V <sub>CE(sat)</sub> (V <sub>GE</sub> =15V) Typ. Volts	E <sub>on</sub> (R <sub>g</sub> =10Ω) typ. mJ	E <sub>off</sub> mJ	Q <sub>g</sub> typ. nC	trr typ. n sec	パッケージ Package	質量 Net mass Grams
	V <sub>CES</sub>	I <sub>C</sub>	I <sub>CP</sub>	t <sub>sc</sub>	P <sub>D</sub>							
	Volts	Amps.	Amps.	μsec.	Watts							
<b>FGW85N60RB</b>	600	85	170	10	600	4.7	2.4	300	165	TO-247-P2	6.0	



■小容量PIM（コンバータ部、ブレーキ部内蔵）600V, 1200Vクラス  
Small PIM/Built-in converter and brake 600, 1200 volts class

With NTC, press fit pins	ic	600V	1200V
		V series	V series
<p>M726 Press fit pins</p>	10A	<b>7MBR10VKA060-50</b>	<b>7MBR10VKA120-50</b>
	15A	<b>7MBR15VKA060-50</b>	<b>7MBR15VKA120-50</b>
	20A	<b>7MBR20VKA060-50</b>	
	30A	<b>7MBR30VKA060-50</b>	
<p>M727 Press fit pins</p>	15A		<b>7MBR15VKB120-50</b>
	25A		<b>7MBR25VKB120-50</b>
	35A		<b>7MBR35VKB120-50</b>
	50A	<b>7MBR50VKB060-50</b>	
<p>M728 Solder pins</p>	10A	<b>7MBR10VKC060-50</b>	<b>7MBR10VKC120-50</b>
	15A	<b>7MBR15VKC060-50</b>	<b>7MBR15VKC120-50</b>
	20A	<b>7MBR20VKC060-50</b>	
	30A	<b>7MBR30VKC060-50</b>	
<p>M729 Solder pins</p>	15A		<b>7MBR15VKD120-50</b>
	25A		<b>7MBR25VKD120-50</b>
	35A		<b>7MBR35VKD120-50</b>
	50A	<b>7MBR50VKD060-50</b>	

Dimension [mm]

型 式 Device type	インバータ部 Inverter [IGBT]				ブレーキ部 Brake [IGBT+FWD]			コンバータ部 Converter [Diode]				パッケージ Package	質量 Net mass Grams
	V <sub>CES</sub>	I <sub>c</sub>	P <sub>c</sub>	V <sub>CE(sat)</sub>	V <sub>CES</sub>	I <sub>c</sub>	V <sub>RRM</sub>	V <sub>RRM</sub>	I <sub>o</sub>	V <sub>FM</sub>	I <sub>FSM</sub>		
	Volts	Cont. Amps.	Watts	Typ. Volts	Volts	Cont. Amps.	Volts	Volts	Cont. Amps.	Typ. Volts	Amps.		
<b>7MBR10VKA060-50</b>	600	10	65	1.70	600	10	600	800	10	0.95	360	M726	25
<b>7MBR15VKA060-50</b>	600	15	80	1.70	600	15	600	800	15	1.00	360	M726	25
<b>7MBR20VKA060-50</b>	600	20	90	1.70	600	20	600	800	20	1.05	360	M726	25
<b>7MBR30VKA060-50</b>	600	30	115	1.70	600	30	600	800	30	1.15	360	M726	25
<b>7MBR50VKB060-50</b>	600	50	180	1.60	600	50	600	800	50	1.25	580	M727	45
<b>7MBR10VKC060-50</b>	600	10	65	1.70	600	10	600	800	10	0.95	360	M728	25
<b>7MBR15VKC060-50</b>	600	15	80	1.70	600	15	600	800	15	1.00	360	M728	25
<b>7MBR20VKC060-50</b>	600	20	90	1.70	600	20	600	800	20	1.05	360	M728	25
<b>7MBR30VKC060-50</b>	600	30	115	1.70	600	30	600	800	30	1.15	360	M728	25
<b>7MBR50VKD060-50</b>	600	50	180	1.60	600	50	600	800	50	1.25	580	M729	45
<b>7MBR10VKA120-50</b>	1200	10	110	1.85	1200	10	1200	1600	10	0.95	245	M726	25
<b>7MBR15VKA120-50</b>	1200	15	135	1.90	1200	15	1200	1600	15	1.00	245	M726	25
<b>7MBR15VKB120-50</b>	1200	15	135	1.90	1200	15	1200	1600	15	1.00	245	M727	45
<b>7MBR25VKB120-50</b>	1200	25	180	1.85	1200	25	1200	1600	25	1.00	370	M727	45
<b>7MBR35VKB120-50</b>	1200	35	215	1.85	1200	35	1200	1600	35	1.05	370	M727	45
<b>7MBR10VKC120-50</b>	1200	10	110	1.85	1200	10	1200	1600	10	0.95	245	M728	25
<b>7MBR15VKC120-50</b>	1200	15	135	1.90	1200	15	1200	1600	15	1.00	245	M728	25
<b>7MBR15VKD120-50</b>	1200	15	135	1.90	1200	15	1200	1600	15	1.00	245	M729	45
<b>7MBR25VKD120-50</b>	1200	25	180	1.85	1200	25	1200	1600	25	1.00	370	M729	45
<b>7MBR35VKD120-50</b>	1200	35	215	1.85	1200	35	1200	1600	35	1.05	370	M729	45

V<sub>CE(sat)</sub>, V<sub>FM</sub>: at T<sub>j</sub>=25°C, Chip

■ PIM (コンバータ部、ブレーキ部内蔵) EconoPIM™ 600V, 1200Vクラス  
 PIM/Built-in converter and brake EconoPIM™ 600, 1200 volts class

With NTC, solder pins, PIM	Circuit Diagram	Power Flow Diagram	Ic	600V	1200V
				V series	V series
 M711			25A		7MBR25VA120-50
			35A		7MBR35VA120-50
			50A	7MBR50VA060-50	
 M712			35A		7MBR35VB120-50
			50A		7MBR50VB120-50
			75A	7MBR75VB060-50	7MBR75VB120-50
 M719			25A		7MBR25VM120-50
			35A		7MBR35VM120-50
			50A		7MBR50VM120-50
 M720			50A		7MBR50VN120-50
			75A		7MBR75VN120-50
			100A		7MBR100VN120-50
 M719			150A		7MBR150VN120-50
			25A		7MBR25VP120-50
			35A		7MBR35VP120-50
 M719			50A	7MBR50VP060-50	7MBR50VP120-50
			75A	7MBR75VP060-50	
			100A	7MBR100VP060-50	
 M720			50A		7MBR50VR120-50
			75A		7MBR75VR120-50
			100A	7MBR100VR060-50	7MBR100VR120-50
 M720			150A	7MBR150VR060-50	7MBR150VR120-50

Dimension [mm]

型 式 Device type	インバータ部 Inverter [IGBT]				ブレーキ部 Brake [IGBT+FWD]			コンバータ部 Converter [Diode]				パッケージ Package	質量 Net mass Grams
	V <sub>CEs</sub> Volts	I <sub>c</sub> Cont. Amps.	P <sub>c</sub> Watts	V <sub>CE(sat)</sub> Typ. Volts	V <sub>CEs</sub> Volts	I <sub>c</sub> Cont. Amps.	V <sub>RRM</sub> Volts	V <sub>RRM</sub> Volts	I <sub>o</sub> Cont. Amps.	V <sub>FM</sub> Typ. Volts	I <sub>FSM</sub> Amps.		
7MBR50VA060-50	600	50	200	1.6	600	50	600	800	50	1.3	210	M711	180
7MBR75VB060-50	600	75	300	1.6	600	50	600	800	75	1.25	500	M712	300
7MBR100VB060-50	600	100	335	1.6	600	50	600	800	100	1.25	700	M712	300
7MBR50VP060-50	600	50	200	1.6	600	50	600	800	50	1.3	210	M719	200
7MBR75VP060-50	600	75	300	1.6	600	50	600	800	75	1.25	500	M719	200
7MBR100VP060-50	600	100	430	1.85	600	50	600	800	100	1.25	700	M719	200
7MBR100VR060-50	600	100	335	1.6	600	50	600	800	100	1.25	700	M720	310
7MBR150VR060-50	600	150	485	1.6	600	75	600	800	150	1.25	700	M720	310
7MBR25VA120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.4	155	M711	180
7MBR35VA120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M711	180
7MBR35VB120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M712	300
7MBR50VB120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M712	300
7MBR75VB120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M712	300
7MBR25VM120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.4	155	M719	200
7MBR35VM120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M719	200
7MBR50VM120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M719	200
7MBR50VN120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M720	310
7MBR75VN120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M720	310
7MBR100VN120-50	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M720	310
7MBR150VN120-50	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M720	310
7MBR25VP120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.4	155	M719	200
7MBR35VP120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M719	200
7MBR50VP120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M719	200
7MBR50VR120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M720	310
7MBR75VR120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M720	310
7MBR100VR120-50	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M720	310
7MBR150VR120-50	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M720	310

注: EconoPIM™はInfineon Technologies社の登録商標です。

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

V<sub>CE</sub>(sat), V<sub>FM</sub>: at T<sub>j</sub>=25°C, Chip





■ PIM (コンバータ部、ブレーキ部内蔵) EconoPIM™ 600V, 1200Vクラス  
 PIM/Built-in converter and brake EconoPIM™ 600, 1200 volts class

With NTC, press fit pins. PIM		600V		1200V	
		V series		V series	
		Ic			
		25A			<b>7MBR25VW120-50</b>
		35A			<b>7MBR35VW120-50</b>
		50A			<b>7MBR50VW120-50</b>
		50A			<b>7MBR50VX120-50</b>
		75A			<b>7MBR75VX120-50</b>
		100A			<b>7MBR100VX120-50</b>
		150A			<b>7MBR150VX120-50</b>
		25A			<b>7MBR25VY120-50</b>
		35A			<b>7MBR35VY120-50</b>
		50A	<b>7MBR50VY060-50</b>		<b>7MBR50VY120-50</b>
		75A	<b>7MBR75VY060-50</b>		
		100A	<b>7MBR100VY060-50</b>		
		50A			<b>7MBR50VZ120-50</b>
		75A			<b>7MBR75VZ120-50</b>
		100A	<b>7MBR100VZ060-50</b>		<b>7MBR100VZ120-50</b>
		150A	<b>7MBR150VZ060-50</b>		<b>7MBR150VZ120-50</b>

Dimension [mm]

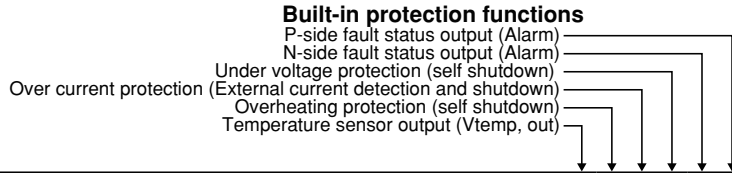
型 式 Device type	インバータ部 Inverter [IGBT]				ブレーキ部 Brake [IGBT+FWD]			コンバータ部 Converter [Diode]				パッケージ Package	質量 Net mass Grams
	V <sub>CES</sub> Volts	I <sub>c</sub> Cont. Amps.	P <sub>c</sub> Watts	V <sub>CE(sat)</sub> Typ. Volts	V <sub>CES</sub> Volts	I <sub>c</sub> Cont. Amps.	V <sub>RRM</sub> Volts	V <sub>RRM</sub> Volts	I <sub>o</sub> Cont. Amps.	V <sub>FM</sub> Typ. Volts	I <sub>FSM</sub> Amps.		
<b>7MBR50VY060-50</b>	600	50	215	1.6	600	50	600	800	50	1.3	210	M721	200
<b>7MBR75VY060-50</b>	600	75	300	1.6	600	50	600	800	75	1.25	500	M721	200
<b>7MBR100VY060-50</b>	600	100	430	1.85	600	50	600	800	100	1.25	700	M721	200
<b>7MBR100VZ060-50</b>	600	100	335	1.6	600	50	600	800	100	1.25	700	M722	310
<b>7MBR150VZ060-50</b>	600	150	485	1.6	600	75	600	800	150	1.25	700	M722	310
<b>7MBR25VW120-50</b>	1200	25	170	1.85	1200	25	1200	1600	25	1.4	155	M721	200
<b>7MBR35VW120-50</b>	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M721	200
<b>7MBR50VW120-50</b>	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M721	200
<b>7MBR50VX120-50</b>	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M722	310
<b>7MBR75VX120-50</b>	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M722	310
<b>7MBR100VX120-50</b>	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M722	310
<b>7MBR150VX120-50</b>	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M722	310
<b>7MBR25VY120-50</b>	1200	25	170	1.85	1200	25	1200	1600	25	1.42	155	M721	200
<b>7MBR35VY120-50</b>	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M721	200
<b>7MBR50VY120-50</b>	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M721	200
<b>7MBR50VZ120-50</b>	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M722	310
<b>7MBR75VZ120-50</b>	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M722	310
<b>7MBR100VZ120-50</b>	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M722	310
<b>7MBR150VZ120-50</b>	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M722	310

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V<sub>CE(sat)</sub>, V<sub>FM</sub>: at T<sub>j</sub>=25°C, Chip

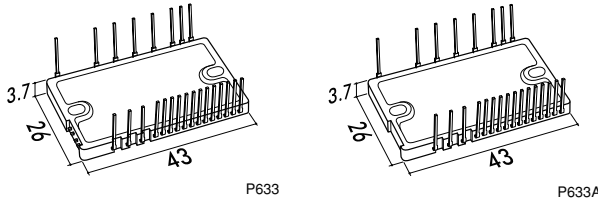
■小容量IPM (Intelligent Power Module) 600Vクラス  
Small IPM (Intelligent Power Module) 600 volts class

IGBT



Small IPM with High Voltage Driver-IC without Brake-Chopper		600V V series	
Package	Model	IC	Features
P633	15A 6MBP15VRA060-50	✓	✓
	15A 6MBP15VRD060-50	✓	✓
	15A 6MBP15VSG060-50	✓	✓
	20A 6MBP20VSA060-50	✓	✓
	30A 6MBP30VSA060-50	✓	✓
	15A 6MBP15VRB060-50	✓	✓
	15A 6MBP15VRC060-50	✓	✓
	15A 6MBP15VSH060-50	✓	✓
	20A 6MBP20VSC060-50	✓	✓
	30A 6MBP30VSC060-50	✓	✓

Dimension [mm]



型式 Device type	インバータ部 Inverter			制御部 Control			保護機能 Protection function					パッケージ 質量 Package Net mass		
	V <sub>CE(sat)</sub> Typ. Volts	I <sub>c</sub> Amps.	V <sub>CE(sat)</sub> Typ. Volts	V <sub>CC(L)</sub> Typ. Volts	Boot-strap Diode	Input signal Active logic and Voltage level	UV V <sub>CC(L)</sub> VB(*)	OC ※1	Vtemp ※2	TOH ※2	Alarm出力 VFO fault output		Package	Net mass Grams
6MBP15VRA060-50	600	15	1.80	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	-	N-side(UV,OC)		P633	9.3
● 6MBP15VRD060-50	600	15	1.55	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	-	N-side(UV,OC)		P633	9.3
● 6MBP15VSG060-50	600	15	1.50	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	-	N-side(UV,OC)		P633A	9.3
● 6MBP20VSA060-50	600	20	1.44	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	-	N-side(UV,OC)		P633A	9.3
● 6MBP30VSA060-50	600	30	1.44	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	-	N-side(UV,OC)		P633A	9.3
6MBP15VRB060-50	600	15	1.80	15	Built-in	High(3.3/5V)	P&N-side	N-side	-	N-side(125±10°C)	N-side(UV,OC,TOH)		P633	9.3
6MBP15VRC060-50	600	15	1.80	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	N-side(125±10°C)	N-side(UV,OC,TOH)		P633	9.3
● 6MBP15VSH060-50	600	15	1.50	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	N-side(125±10°C)	N-side(UV,OC,TOH)		P633A	9.3
● 6MBP20VSC060-50	600	20	1.44	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	N-side(125±10°C)	N-side(UV,OC,TOH)		P633A	9.3
● 6MBP30VSC060-50	600	30	1.44	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	N-side(125±10°C)	N-side(UV,OC,TOH)		P633A	9.3

●: 新製品 New Products

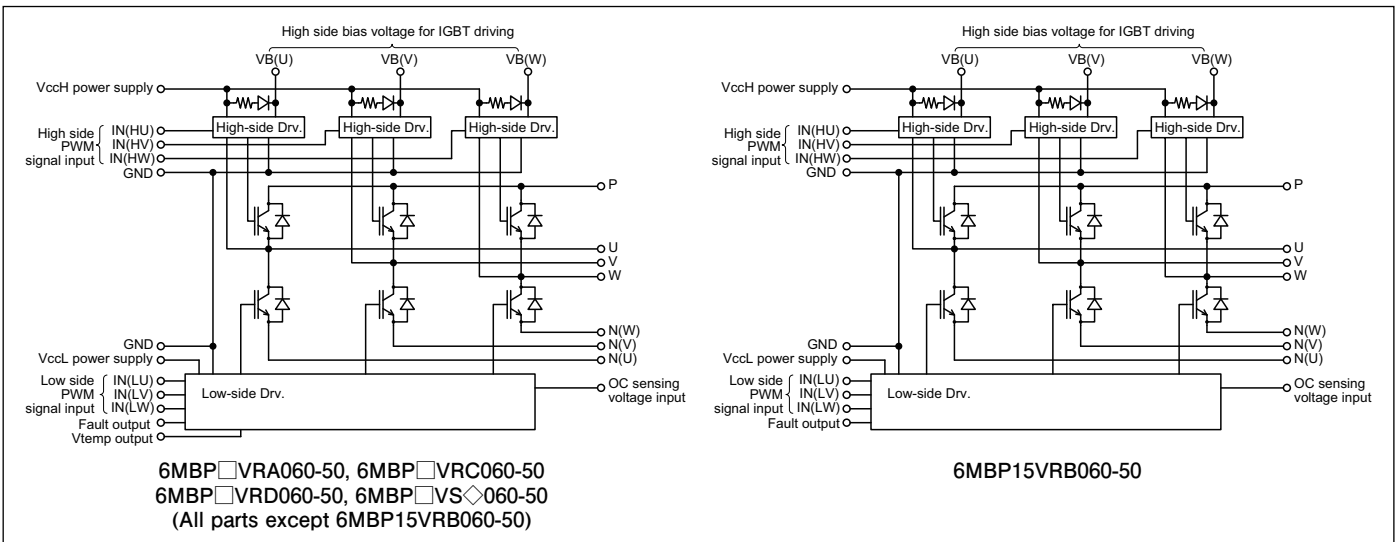
※1 外部電流検出方式

※1 External current detection

※2 LVIC内での温度検出

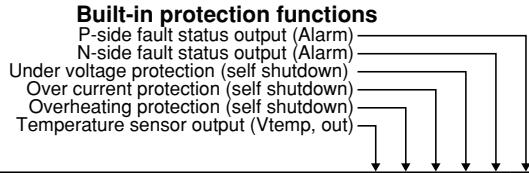
※2 Temperature detection in LVIC

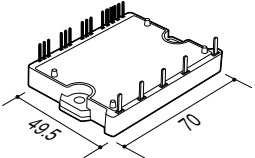
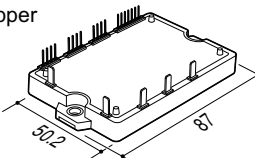
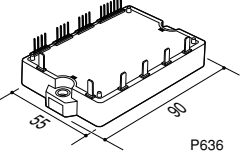
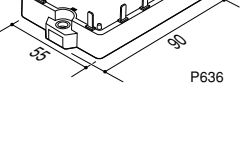
●ブロック図 Block Diagram





■ IPM (Intelligent Power Module) 600V, 1200Vクラス  
 IPM (Intelligent Power Module) 600, 1200 volts class



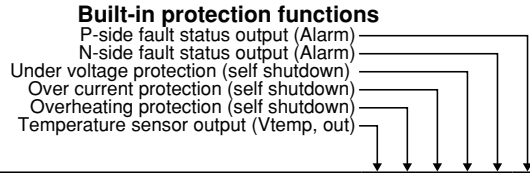
Without Brake-Chopper	P629	P629	P629	P629	P629	Ic	600V	1200V
							V series	V series
	P629	P629	P629	P629	P629	10A		6MBP10VAA120-50
						15A		6MBP15VAA120-50
						20A	6MBP20VAA060-50	
						25A		6MBP25VAA120-50
						30A	6MBP30VAA060-50	
						50A	6MBP50VAA060-50	
	P626	P626	P626	P626	P626	25A		6MBP25VBA120-50
						35A		6MBP35VBA120-50
						50A	6MBP50VBA060-50	6MBP50VBA120-50
						75A	6MBP75VBA060-50	
	P636	P636	P636	P636	P636	25A		6MBP25VFN120-50
						35A		6MBP35VFN120-50
						50A	6MBP50VFN060-50	6MBP50VFN120-50
						75A	6MBP75VFN060-50	
						100A	6MBP100VFN060-50	
	P636	P636	P636	P636	P636	25A		7MBP25VFN120-50
						35A		7MBP35VFN120-50
						50A	7MBP50VFN060-50	7MBP50VFN120-50
						75A	7MBP75VFN060-50	
						100A	7MBP100VFN060-50	

Dimension [mm]

型式 Device type	インバータ部 Inverter			ブレーキ部 Brake		制御部 Control			TjOH Min. °C	Alarm OC(typ.) ms	UV(typ.) ms	TjOH(typ.) ms	パッケージ 質量 Package Net mass Grams	
	V <sub>CE(sat)</sub> Volts	I <sub>c</sub> Cont. Amps.	V <sub>CE(sat)</sub> Typ. Volts	V <sub>CE(sat)</sub> Volts	I <sub>c</sub> Cont. Amps.	V <sub>CC</sub> Typ. Volts	I <sub>oc</sub> [INV] Min. Amps.	V <sub>UV</sub> Volts					Package	Net mass Grams
6MBP20VAA060-50	600	20	1.4	-	-	15	30	11.0 to 12.5	150	2	4	8	P629	80
6MBP30VAA060-50	600	30	1.4	-	-	15	45	11.0 to 12.5	150	2	4	8	P629	80
6MBP50VAA060-50	600	50	1.4	-	-	15	75	11.0 to 12.5	150	2	4	8	P629	80
6MBP50VBA060-50	600	50	1.4	-	-	15	75	11.0 to 12.5	150	2	4	8	P626	100
6MBP75VBA060-50	600	75	1.4	-	-	15	113	11.0 to 12.5	150	2	4	8	P626	100
○ 6MBP50VFN060-50	600	50	TBD	-	-	15	100	11.0 to 12.5	150	2	4	8	P636	190
○ 6MBP75VFN060-50	600	75	TBD	-	-	15	150	11.0 to 12.5	150	2	4	8	P636	190
○ 6MBP100VFN060-50	600	100	TBD	-	-	15	200	11.0 to 12.5	150	2	4	8	P636	190
○ 7MBP50VFN060-50	600	50	TBD	600	30	15	100	11.0 to 12.5	150	2	4	8	P636	190
○ 7MBP75VFN060-50	600	75	TBD	600	50	15	150	11.0 to 12.5	150	2	4	8	P636	190
○ 7MBP100VFN060-50	600	100	TBD	600	50	15	200	11.0 to 12.5	150	2	4	8	P636	190
6MBP10VAA120-50	1200	10	1.7	-	-	15	15	11.0 to 12.5	150	2	4	8	P629	80
6MBP15VAA120-50	1200	15	1.7	-	-	15	23	11.0 to 12.5	150	2	4	8	P629	80
6MBP25VAA120-50	1200	25	1.7	-	-	15	38	11.0 to 12.5	150	2	4	8	P629	80
6MBP25VBA120-50	1200	25	1.7	-	-	15	38	11.0 to 12.5	150	2	4	8	P626	100
6MBP35VBA120-50	1200	35	1.7	-	-	15	53	11.0 to 12.5	150	2	4	8	P626	100
6MBP50VBA120-50	1200	50	1.7	-	-	15	75	11.0 to 12.5	150	2	4	8	P626	100
○ 6MBP25VFN120-50	1200	25	TBD	-	-	15	TBD	11.0 to 12.5	150	2	4	8	P636	190
○ 6MBP35VFN120-50	1200	35	TBD	-	-	15	TBD	11.0 to 12.5	150	2	4	8	P636	190
○ 6MBP50VFN120-50	1200	50	TBD	-	-	15	TBD	11.0 to 12.5	150	2	4	8	P636	190
○ 7MBP25VFN120-50	1200	25	TBD	1200	15	15	TBD	11.0 to 12.5	150	2	4	8	P636	190
○ 7MBP35VFN120-50	1200	35	TBD	1200	25	15	TBD	11.0 to 12.5	150	2	4	8	P636	190
○ 7MBP50VFN120-50	1200	50	TBD	1200	25	15	TBD	11.0 to 12.5	150	2	4	8	P636	190

○ : 開発中 Under development

■ IPM (Intelligent Power Module) 600V, 1200Vクラス  
 IPM (Intelligent Power Module) 600, 1200 volts class



	P630	Protection Functions					Ic	600V	1200V	
		✓	✓	✓	✓	✓		V series	V series	
Without Brake-Chopper							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	6MBP100VDN120-50
								150A	6MBP150VDA060-50	
									6MBP150VDN060-50	
With Brake-Chopper							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	7MBP100VDN120-50
								150A	7MBP150VDA060-50	
									7MBP150VDN060-50	
Without Brake-Chopper							100A		6MBP100VEA120-50	
							150A		6MBP150VEA120-50	
							200A	6MBP200VEA060-50	6MBP200VEA120-50	
				✓	✓	✓	✓	300A	6MBP300VEA060-50	
								400A	6MBP400VEA060-50	
With Brake-Chopper							100A		7MBP100VEA120-50	
							150A		7MBP150VEA120-50	
							200A	7MBP200VEA060-50	7MBP200VEA120-50	
				✓	✓	✓	✓	300A	7MBP300VEA060-50	
								400A	7MBP400VEA060-50	

Dimension [mm]



# パワーデバイス/Power Devices (IGBT)

IGBT

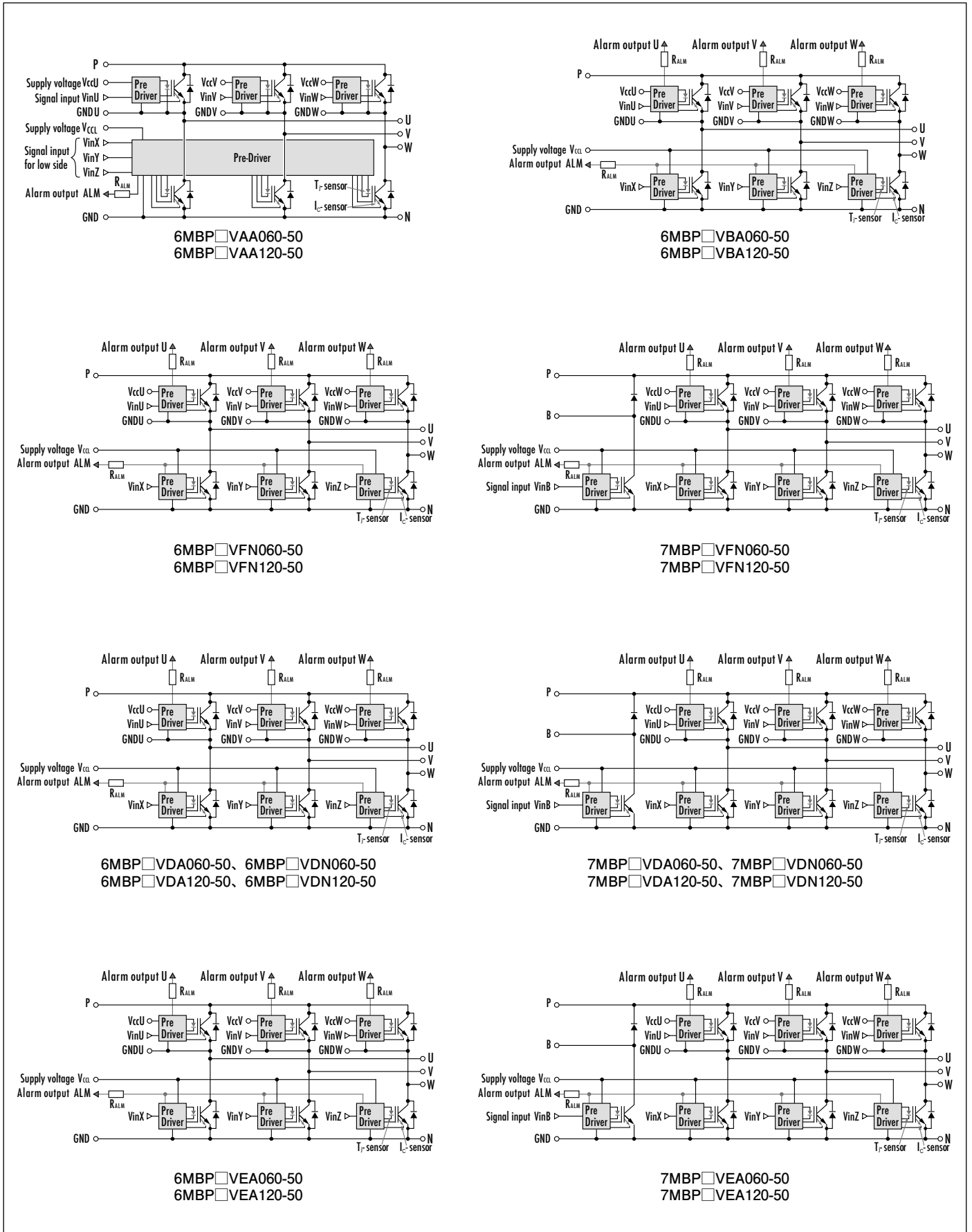
型 式 Device type	インバータ部 Inverter			ブレーキ部 Brake		制御部 Control							パッケージ 質量 Package Net mass	
	V <sub>CES</sub>	I <sub>c</sub>	V <sub>CE(sat)</sub>	V <sub>CES</sub>	I <sub>c</sub>	V <sub>cc</sub>	I <sub>oc</sub> [INV]	V <sub>UV</sub>	T <sub>JOH</sub>	Alarm	UV	T <sub>JOH</sub>	Package	Net mass Grams
	Volts	Amps.	Volts	Volts	Amps.	Volts	Amps.	Volts	Min. °C	OC(typ.) ms	UV(typ.) ms	T <sub>JOH</sub> (typ.) ms		
6MBP50VDA060-50	600	50	1.4	-	-	15	75	11.0 to 12.5	150	2	4	8	P630	290
6MBP75VDA060-50	600	75	1.4	-	-	15	113	11.0 to 12.5	150	2	4	8	P630	290
6MBP100VDA060-50	600	100	1.4	-	-	15	150	11.0 to 12.5	150	2	4	8	P630	290
○ 6MBP100VDN060-50	600	100	1.4	-	-	15	150	11.0 to 12.5	150	2	4	8	P630	290
6MBP150VDA060-50	600	150	1.4	-	-	15	225	11.0 to 12.5	150	2	4	8	P630	290
○ 6MBP150VDN060-50	600	150	1.4	-	-	15	225	11.0 to 12.5	150	2	4	8	P630	290
6MBP200VDA060-50	600	200	1.4	-	-	15	300	11.0 to 12.5	150	2	4	8	P630	290
○ 6MBP200VDN060-50	600	200	1.4	-	-	15	300	11.0 to 12.5	150	2	4	8	P630	290
7MBP50VDA060-50	600	50	1.4	600	30	15	75	11.0 to 12.5	150	2	4	8	P630	290
7MBP75VDA060-50	600	75	1.4	600	50	15	113	11.0 to 12.5	150	2	4	8	P630	290
7MBP100VDA060-50	600	100	1.4	600	50	15	150	11.0 to 12.5	150	2	4	8	P630	290
○ 7MBP100VDN060-50	600	100	1.4	600	50	15	150	11.0 to 12.5	150	2	4	8	P630	290
7MBP150VDA060-50	600	150	1.4	600	75	15	225	11.0 to 12.5	150	2	4	8	P630	290
○ 7MBP150VDN060-50	600	150	1.4	600	75	15	225	11.0 to 12.5	150	2	4	8	P630	290
7MBP200VDA060-50	600	200	1.4	600	100	15	300	11.0 to 12.5	150	2	4	8	P630	290
○ 7MBP200VDN060-50	600	200	1.4	600	100	15	300	11.0 to 12.5	150	2	4	8	P630	290
6MBP200VEA060-50	600	200	1.25	-	-	15	300	11.0 to 12.5	150	2	4	8	P631	950
6MBP300VEA060-50	600	300	1.25	-	-	15	450	11.0 to 12.5	150	2	4	8	P631	950
6MBP400VEA060-50	600	400	1.25	-	-	15	600	11.0 to 12.5	150	2	4	8	P631	950
7MBP200VEA060-50	600	200	1.25	600	100	15	300	11.0 to 12.5	150	2	4	8	P631	950
7MBP300VEA060-50	600	300	1.25	600	150	15	450	11.0 to 12.5	150	2	4	8	P631	950
7MBP400VEA060-50	600	400	1.25	600	200	15	600	11.0 to 12.5	150	2	4	8	P631	950
6MBP25VDA120-50	1200	25	1.7	-	-	15	38	11.0 to 12.5	150	2	4	8	P630	290
6MBP35VDA120-50	1200	35	1.7	-	-	15	53	11.0 to 12.5	150	2	4	8	P630	290
6MBP50VDA120-50	1200	50	1.7	-	-	15	75	11.0 to 12.5	150	2	4	8	P630	290
○ 6MBP50VDN120-50	1200	50	1.7	-	-	15	75	11.0 to 12.5	150	2	4	8	P630	290
6MBP75VDA120-50	1200	75	1.7	-	-	15	113	11.0 to 12.5	150	2	4	8	P630	290
○ 6MBP75VDN120-50	1200	75	1.7	-	-	15	113	11.0 to 12.5	150	2	4	8	P630	290
6MBP100VDA120-50	1200	100	1.7	-	-	15	150	11.0 to 12.5	150	2	4	8	P630	290
○ 6MBP100VDN120-50	1200	100	1.7	-	-	15	150	11.0 to 12.5	150	2	4	8	P630	290
7MBP25VDA120-50	1200	25	1.7	1200	15	15	38	11.0 to 12.5	150	2	4	8	P630	290
7MBP35VDA120-50	1200	35	1.7	1200	15	15	53	11.0 to 12.5	150	2	4	8	P630	290
7MBP50VDA120-50	1200	50	1.7	1200	25	15	75	11.0 to 12.5	150	2	4	8	P630	290
○ 7MBP50VDN120-50	1200	50	1.7	1200	25	15	75	11.0 to 12.5	150	2	4	8	P630	290
7MBP75VDA120-50	1200	75	1.7	1200	35	15	113	11.0 to 12.5	150	2	4	8	P630	290
○ 7MBP75VDN120-50	1200	75	1.7	1200	35	15	113	11.0 to 12.5	150	2	4	8	P630	290
7MBP100VDA120-50	1200	100	1.7	1200	50	15	150	11.0 to 12.5	150	2	4	8	P630	290
○ 7MBP100VDN120-50	1200	100	1.7	1200	50	15	150	11.0 to 12.5	150	2	4	8	P630	290
6MBP100VEA120-50	1200	100	1.7	-	-	15	150	11.0 to 12.5	150	2	4	8	P631	950
6MBP150VEA120-50	1200	150	1.7	-	-	15	225	11.0 to 12.5	150	2	4	8	P631	950
6MBP200VEA120-50	1200	200	1.7	-	-	15	300	11.0 to 12.5	150	2	4	8	P631	950
7MBP100VEA120-50	1200	100	1.7	1200	50	15	150	11.0 to 12.5	150	2	4	8	P631	950
7MBP150VEA120-50	1200	150	1.7	1200	75	15	225	11.0 to 12.5	150	2	4	8	P631	950
7MBP200VEA120-50	1200	200	1.7	1200	100	15	300	11.0 to 12.5	150	2	4	8	P631	950

○: 開発中 Under development

注: 本ページでVDNの付く型式は高放熱特性。

Note: The products with "VDN" on this page have high heat dissipation characteristics.

●ブロック図 Block Diagram





## ■ ディスクリートIGBT Vシリーズ 600V, 1200Vクラス Discrete IGBTs V series 600V, 1200V class

IGBT in field-stop technology and trench-gate structure with Ultra fast FWD  
600Vクラス 600 volts class

型 式 Device type	絶対最大定格 Maximum Ratings				$V_{CE(sat)}$ ( $V_{GE}=15V$ ) Typ. Volts	$E_{on}$ ( $R_g=10\Omega$ ) typ. mJ	$E_{off}$ mJ	$Q_g$ typ. nC	$V_F$		$Q_{rr}$ typ. $\mu C$	パッケージ Package	質量 Net mass Grams
	$V_{CES}$	$I_C$	$I_{CP}$	$P_D$					$I_F$				
	Volts	Amps. $T_c=100^\circ C$	Amps.	Watts IGBT						Volts			
<b>FGW30N60VD</b>	600	30	60	230	1.6	1.2	0.7	225	1.5	25	0.7	TO-247-P2	6.0
<b>FGW35N60H</b>	600	35	105	230	1.5	0.9	0.85	210	-	-	-	TO-247-P2	6.0
<b>FGW35N60HD</b>	600	35	105	230	1.5	0.9	0.85	210	2.0	15	0.06	TO-247-P2	6.0
● <b>FGW35N60HC</b>	600	35	105	230	1.5	0.95	0.85	210	2.35	35	0.13	TO-247-P2	6.0
<b>FGW50N60H</b>	600	50	150	360	1.5	1.4	1.7	305	-	-	-	TO-247-P2	6.0
<b>FGW50N60HD</b>	600	50	150	360	1.5	1.4	1.7	305	2.0	25	0.08	TO-247-P2	6.0
● <b>FGW50N60HC</b>	600	50	150	360	1.5	1.5	1.7	305	2.3	50	0.07	TO-247-P2	6.0
<b>FGW50N60VD</b>	600	50	100	360	1.6	2.4	1.4	360	1.5	35	0.75	TO-247-P2	6.0
<b>FGW75N60H</b>	600	75	225	500	1.5	3.0	4.2	460	-	-	0.12	TO-247-P2	6.0
<b>FGW75N60HD</b>	600	75	225	500	1.5	3.0	4.2	460	2.0	35	0.13	TO-247-P2	6.0

●: 新製品 New Products

1200Vクラス 1200 volts class

型 式 Device type	絶対最大定格 Maximum Ratings				$V_{CE(sat)}$ ( $V_{GE}=15V$ ) Typ. Volts	$E_{on}$ ( $R_g=10\Omega$ ) typ. mJ	$E_{off}$ mJ	$Q_g$ typ. nC	$V_F$		$Q_{rr}$ typ. $\mu C$	パッケージ Package	質量 Net mass Grams
	$V_{CES}$	$I_C$	$I_{CP}$	$P_D$					$I_F$				
	Volts	Amps. $T_c=100^\circ C$	Amps.	Watts IGBT						Volts			
<b>FGW15N120H</b>	1200	15	45	155	1.8	0.6	0.8	140	-	-	-	TO-247-P2	6.0
<b>FGW15N120HD</b>	1200	15	45	155	1.8	0.6	0.8	140	2.2	12	0.6	TO-247-P2	6.0
<b>FGW15N120VD</b>	1200	15	30	155	1.85	1.1	0.8	150	1.7	15	0.85	TO-247-P2	6.0
<b>FGW25N120VD</b>	1200	25	50	260	1.85	2.2	1.4	235	1.7	25	1.2	TO-247-P2	6.0
<b>FGW30N120H</b>	1200	30	90	260	1.8	1.6	1.5	230	-	-	-	TO-247-P2	6.0
<b>FGW30N120HD</b>	1200	30	90	260	1.8	1.6	1.5	230	2.2	20	0.95	TO-247-P2	6.0
<b>FGW40N120H</b>	1200	40	120	340	1.8	2.8	1.8	300	-	-	-	TO-247-P2	6.0
<b>FGW40N120HD</b>	1200	40	120	340	1.8	2.8	1.8	300	2.2	30	1.35	TO-247-P2	6.0
<b>FGW40N120VD</b>	1200	40	80	340	1.85	4.3	2.2	320	1.7	30	1.45	TO-247-P2	6.0

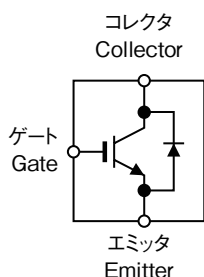
### ■ 型式の見方 Part numbers

FGW35N60HD (example)

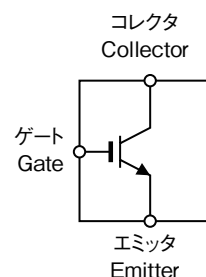
F	G		W		35	N		60		HD	
社名 Company	機種コード Device code		パッケージコード Package type		定格電流 Current	極性 Polarity		定格電圧 Voltage		シリーズ Series	
Fuji	G	IGBT	W	TO-247	×1	N	N-ch	60	600V	H	High Speed V w/o FWD
								120	1200V	HC	High Speed V with FWD
										HD	
										VD	V series with FWD

### ■ 等価回路 Equivalent circuit

(a) ダイオード内蔵  
with Diode



(b) ダイオードなし  
without Diode

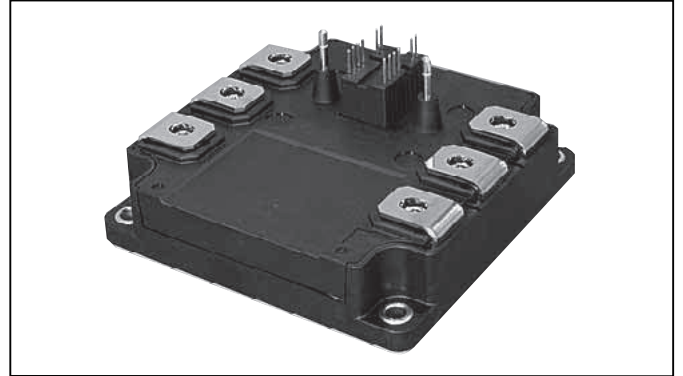


## EV, HEV用IGBT IPMの特長

### Features of IGBT IPM for Electric Vehicle and Hybrid Electric Vehicle

#### ■特長 Features

- ドライブ回路、保護機能内蔵
- 光絶縁  
(信号入力、IGBT チップ温度モニター、異常検出時アラーム出力)
- 短絡保護、過熱保護、制御電圧低下保護
- 鉛フリー
  
- Including circuit board which has IGBT drive and protection function
- Optical isolated  
(signal input, IGBT's temperature monitor, alarm output)
- Detection and protection  
(short-circuit, over-temperature, under-voltage)
- Lead Free Package



#### ■特性 Characteristics

(T<sub>J</sub>=25°C)

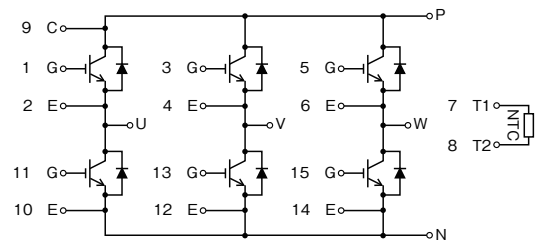
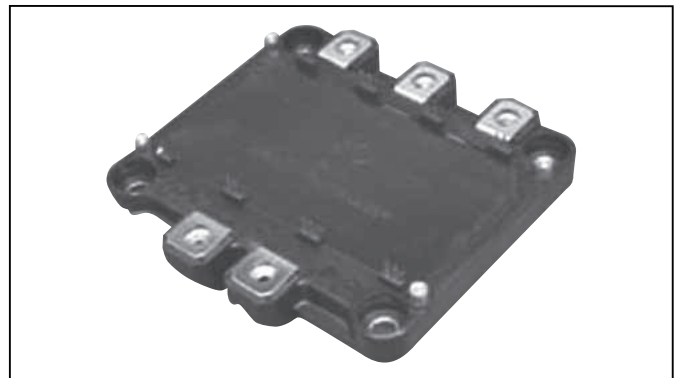
型式 Device type	V <sub>CES</sub> Volts	I <sub>c</sub> (Cont) Amps.	V <sub>CE(sat)</sub> Typ. Volts	V <sub>F</sub> Typ. Volts	パッケージ Package	質量 Net mass Grams
<b>2MBP600UN-120V</b>	1200	600	2.00	2.20	P401	680g

## EV, HEV用IGBTモジュールの特長

### Features of IGBT Module for Electric Vehicle and Hybrid Electric Vehicle

#### ■特長 Features

- 第6世代 “V シリーズ” 650V-IGBT
- 直接水冷銅フィンベース
- 高パワー密度および小型パッケージ
- RoHS 対応
  
- 6th Generation “V-series” 650V-IGBT
- Direct liquid Cooling Fin-base with copper
- High power density and small package size
- RoHS compliant



#### ■特性 Characteristics

V<sub>CE(sat)</sub>: at T<sub>J</sub>=25°C, Chip

型式 Device type	V <sub>CES</sub> Volts	I <sub>c</sub> (Cont) Amps.	I <sub>c</sub> (Peak) Amps.	V <sub>CE(sat)</sub> Typ. Volts	V <sub>F</sub> Typ. Volts	パッケージ Package	質量 Net mass Grams
○ <b>6MBI400VW-065V</b>	650	200	400	2.00 (I <sub>c</sub> =400A)	1.70 (I <sub>F</sub> =400A)	M651	660g
○ <b>6MBI600VW-065V</b>	650	300	600	2.00 (I <sub>c</sub> =600A)	1.70 (I <sub>F</sub> =600A)	M652	900g

○ : 開発中 Under development