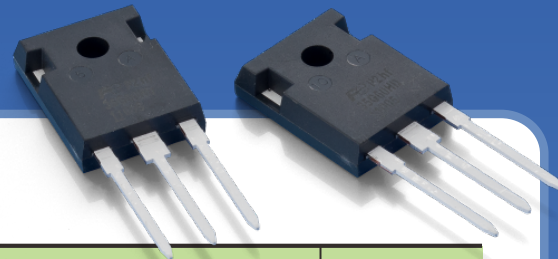





# Fuji High-speed V-series Discrete IGBT

- **6<sup>th</sup> gen. IGBT technology**  
Field-stop technology and trench-gate structure
- **Improved Vce(sat)-Eoff, Vf-Err trade-off**  
Suitable for UPS, PV, welding and motor control
- **Tj(max)=175°C, Tj(op)=175°C guaranteed**
- **Two options for switching speed**  
"High-speed V-series" with ultra-fast FWD  
"V-series" with soft-recovery FWD




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## High-Speed V-series

	VCE (V)	PACKAGE	IC(A)											NOTE
			12	15	20	25	30	35	40	50	60	70	75	
IGBT with FWD 	600	TO-247						○		○			○	
	1200	TO-247		○			○		○					
IGBT without FWD 	600	TO-247						○		○			○	
	1200	TO-247		○			○		○					
Ultra fast FWD 	600	TO-220		○		○								
		TO-247		○		○		○		○*		○**		*25Ax2 **35Ax2
	1200	TO-220	○		○									
		TO-247	○		○		○		○*		○**			*20Ax2 **30Ax2

## V-series

	VCE (V)	PACKAGE	IC(A)								NOTE	
			12	15	20	25	30	40	50	75		
IGBT with FWD 	600	TO-247					○		○			
	1200	TO-247		○		○		○				

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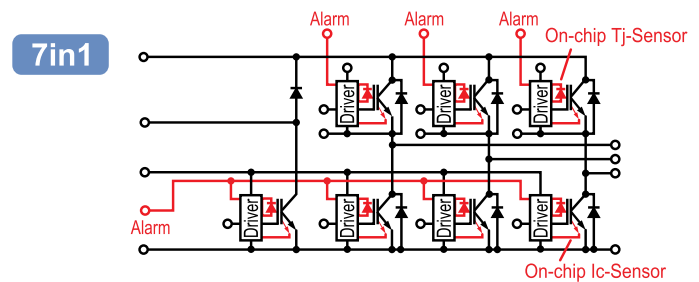
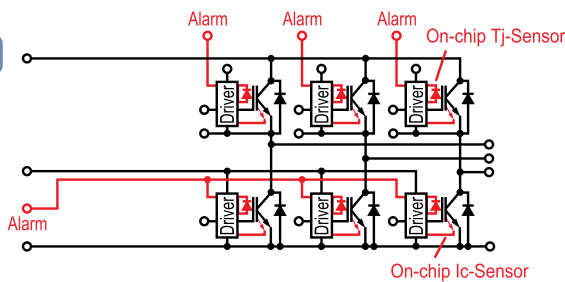
# Fuji 6<sup>th</sup> Gen. IGBT V-series IPM (Intelligent Power Modules)

## 6<sup>th</sup> gen. IGBT technology

- Field-stop technology and trench-gate structure
- Compact package, low loss, low radiation noise

## Improved control IC

- Built-in drive circuit and protection circuit
- Shorter dead time, fast response, high accuracy
- Different alarm output by failure mode



<b>600V</b>	20A	30A	50A	75A	100A	150A	200A	300A	400A
<b>1200V</b>	10A	15A	25A	35A	50A	75A	100A	150A	200A

**P629** 6in1  
49.5 x 70 x 12.5mm

**P630** 6in1 7in1  
84 x 128.5 x 14mm

**P626** 6in1  
52 x 87 x 12mm

50A/  
1200V

**P631** 6in1 7in1  
110 x 142 x 22mm

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# Fuji 6<sup>th</sup> Gen. IGBT V-series Prime PACK™

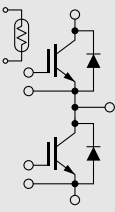
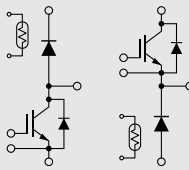
- **6<sup>th</sup> gen. IGBT V-series chip set**  
Trench-gate structure and Field-stop technology
- **Low inductance package, easy to connect in parallel**
- **Tj(max)=175°C, Tj(op)=150°C guaranteed**
- **Viso=4kV, CTI>600**

M271



M272



Circuit	Pkg	Current	1200V	1700V
 2in1	M271	<b>600A</b>	2MBI600VXA-120E-50	
		<b>650A</b>		2MBI650VXA-170E-50
		<b>900A</b>	2MBI900VXA-120P-50 2MBI900VXA-120E-50	
	M272	<b>1000A</b>	2MBI1400VXB-120P-50	2MBI1000VXB-170P-50 2MBI1000VXB-170E-50
		<b>1400A</b>		2MBI1400VXB-170P-50 2MBI1400VXB-170E-50
 Chopper "L" "H"	M271	<b>650A</b>		1MBI650VXA-170EL-50 1MBI650VXA-170EH-50
	M272	<b>1000A</b>		1MBI1000VXB-170EL-50 1MBI1000VXB-170EH-50
		<b>1400A</b>	1MBI1400VXB-120PL-50 1MBI1400VXB-120PH-50	

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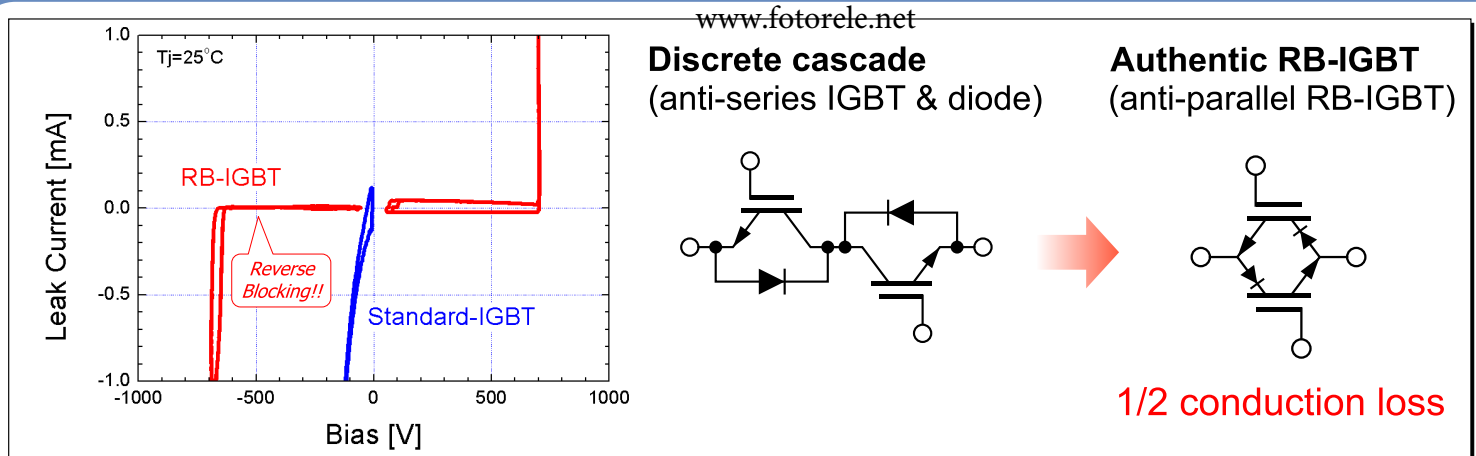
Note: PrimePACK™ is the registered trademark of Infineon Technology AG, Germany

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# Fuji Electric 3-level Modules with Authentic RB-IGBT

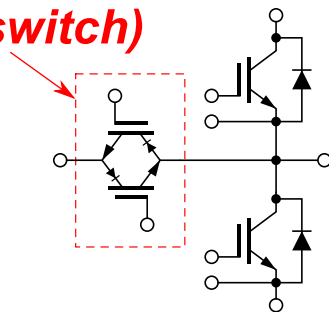
**T-type configuration with Authentic RB-IGBT**  
High efficiency and compact / low inductance package



## T-type leg (4in1)

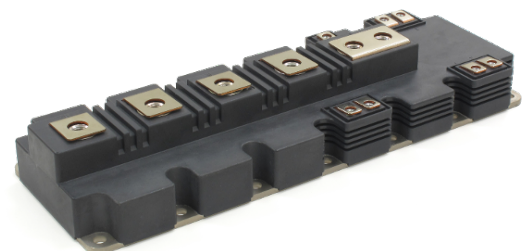
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**RB-IGBT**  
**(AC switch)**



**4MBI300VG-120R-50**  
(1200V / 300A)

**4MBI400VG-060R-50**  
(1200V / 400A)



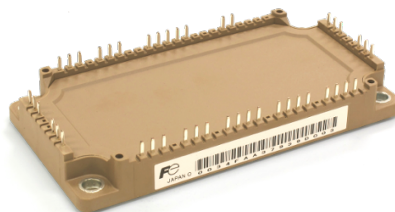
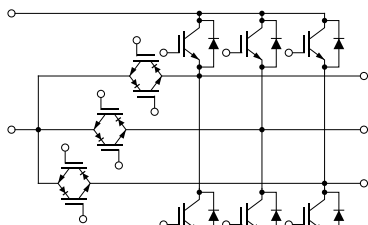
**4MBI450VB-120R1-50\***  
(1200V / 450A)

**4MBI650VB-120R1-50\***  
(1200V / 650A)

**4MBI900VB-120R1-50\***  
(1200V / 900A)

\* Under development

## T-type 3-phase (12in1)



Solder pin type



Press-fit type

**12MBI100VN-120-50**  
(1200V / 100A)

**12MBI75VN-120-50**  
(1200V / 75A)

**12MBI50VN-120-50**  
(1200V / 50A)

**12MBI100VX-120-50**  
(1200V / 100A)

**12MBI75VX-120-50**  
(1200V / 75A)

**12MBI50VX-120-50**  
(1200V / 50A)

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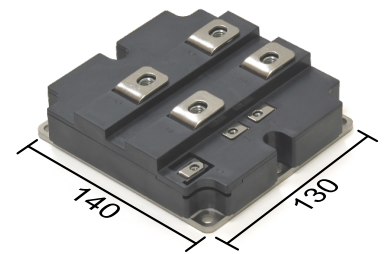
# Fuji 6<sup>th</sup> Gen. IGBT V-series High Power Modules

- **6<sup>th</sup> gen. IGBT technology**  
Field-stop technology and trench-gate structure
- **Low inductance, low thermal impedance**
- **AlSiC base plate is available for 1700V**
- **$T_{j(max)}=175^{\circ}C$ ,  $T_{j(op)}=150^{\circ}C$  guaranteed\***

\*6<sup>th</sup> gen. only

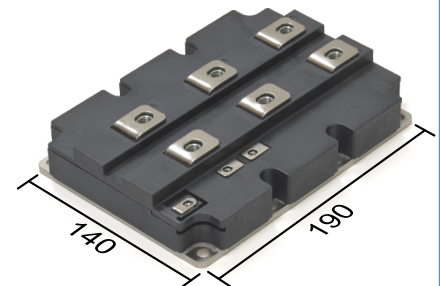
Voltage	Circuit	Current	Type Name	Package
<b>1200V</b> (6 <sup>th</sup> gen.)	1in1	1200A	1MBI1200VC-120P	M151
		1600A	1MBI1600VC-120P	
		2400A	1MBI2400VC-120P	
		2400A	1MBI2400VD-120P	
	2in1	3600A	1MBI3600VD-120P	M152
		600A	2MBI600VG-120P	
		800A	2MBI800VG-120P	
		1200A	2MBI1200VG-120P	M256

**M151** (Single)



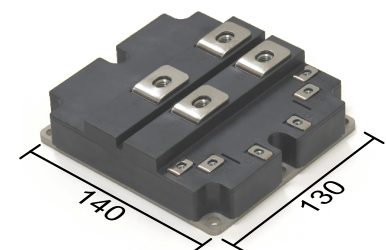
Voltage	Circuit	Current	Type Name	Package
<b>1700V</b> (6 <sup>th</sup> gen.)	1in1	1200A	1MBI1200VC-170E	M151
		1600A	1MBI1600VC-170E	
		2400A	1MBI2400VC-170E	
		2400A	1MBI2400VD-170E	
	2in1	3600A	1MBI3600VD-170E	M152
		600A	2MBI600VG-170E	
		800A	2MBI800VG-170E	
		1200A	2MBI1200VG-170E	M256

**M152** (Single)



Voltage	Circuit	Current	Type Name	Package
<b>3300V</b> (5 <sup>th</sup> gen.)	1in1	800A	1MBI800UG-330	M151
		1000A	1MBI1000UG-330	
		1200A	1MBI1200UE-330	M152
		1500A	1MBI1500UE-330	

**M256** (Dual)



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# Fuji 6<sup>th</sup> Gen. IGBT V-series 6-pack / PIM (Power Integrated Module)

## High efficiency, compact package

- Low  $V_{on}$ , fast switching, low power dissipation
- $T_j(max)=175^{\circ}C$ ,  $T_j(op)=150^{\circ}C$
- RoHS compliant
- Solder free pressfit contact

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**6-pack**

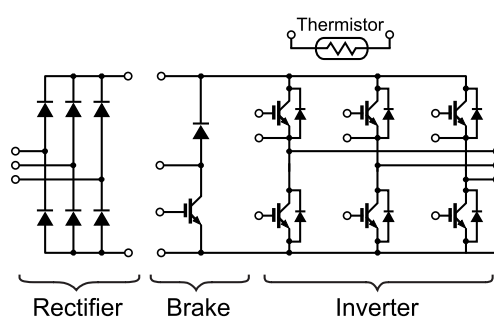
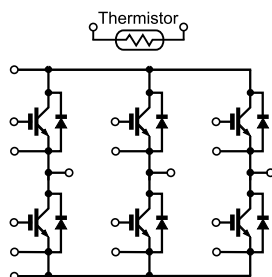
PC2

PC3

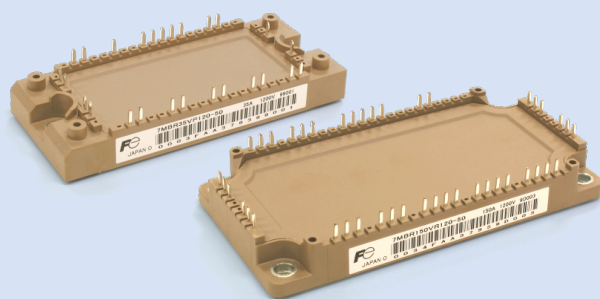
**PIM**

EP2

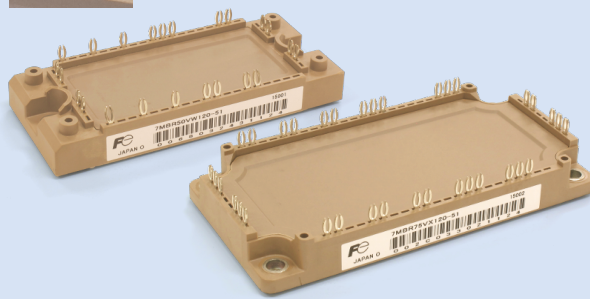
EP3



**Solder pin**



**Pressfit**



	25A	35A	50A	75A	100A	150A	180A
<b>600V</b>			<b>6-pack</b>	PC2		PC3	
			<b>PIM</b>	EP2		EP3	
<b>1200V</b>			<b>6-pack</b>	PC2		PC3	
			<b>PIM</b>	EP2		EP3	

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# Fuji 6<sup>th</sup> Gen. IGBT Modules V-series

## ● High efficiency, compact package

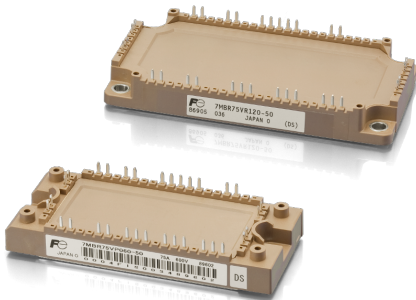
- Low  $V_{on}$ , fast switching, low power dissipation
- $T_j(max)=175^{\circ}C$ ,  $T_j(op)=150^{\circ}C$
- RoHS compliant

## ● Improved switching characteristics

- Reduced  $dV/dt$  and  $dI/dt$ , soft switching behavior
- Suppressed spike voltage, noise and oscillation
- Short circuit capability  $10\mu s$  at  $150^{\circ}C$

### 6pack / PIM

600V / 1200V  
25A - 180A



Solder pin

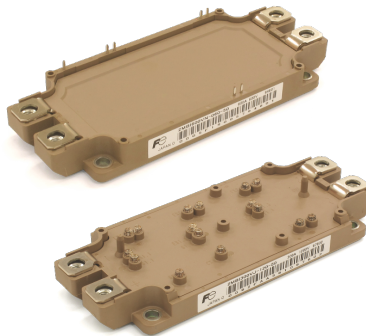


Press fit

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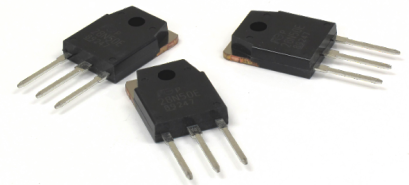
### Dual XT

1200V : 225A - 600A  
1700V : 300A - 550A



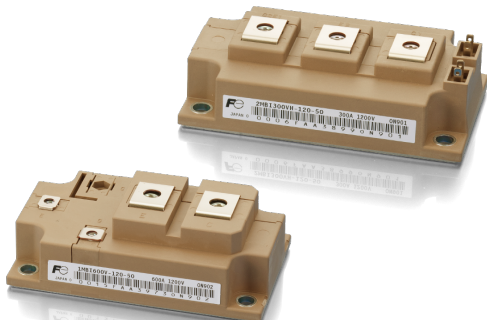
### Discrete

600V : 30A - 75A  
1200V : 15A - 40A



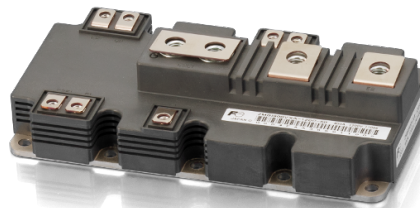
### Classic 2in1/1in1

600V : 100A - 600A  
1200V : 75A - 600A



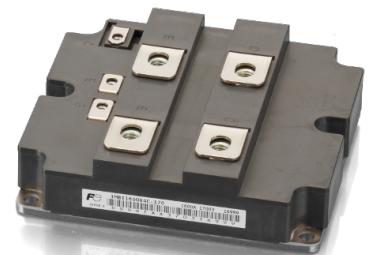
### PrimePACK™

1200V : 600A - 1400A  
1700V : 650A - 1400A



### HPM

1200V / 1700V / 3300V



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Note: PrimePACK™ is the registered trademark of Infineon Technology AG, Germany

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**RoHS:** If the last two figures after hyphen of product name are from 50 through 99, the product is compatible with EU RoHS Directive.

For example "7MBR50VP060-50"

Package	IC Amps.	600V		1200V	
		U Series (Gen.5) Trench/Planar-NPT	V Series (Gen.6)Trench-FS	U Series (Gen.5)Trench-FS	V Series (Gen.6)Trench-FS
 M711 107.5 x 45.0	25			<a href="#">7MBR25UA120</a>	<a href="#">7MBR25VA120-50</a>
	30	<a href="#">7MBR30U2A060</a>			
	35			<a href="#">7MBR35UA120</a>	<a href="#">7MBR35VA120-50</a>
	50	<a href="#">7MBR50U2A060</a>	<a href="#">7MBR50VA060-50</a>	<a href="#">7MBR50UA120</a>	
 M712 122.0 x 62.0	35			<a href="#">7MBR35UB120</a>	<a href="#">7MBR35VB120-50</a>
	50			7MBR50UB120	<a href="#">7MBR50VB120-50</a>
	75	<a href="#">7MBR75U2B060</a>	<a href="#">7MBR75VB060-50</a>	7MBR75U4B120	<a href="#">7MBR75VB120-50</a>
	100	<a href="#">7MBR100U2B060</a>	<a href="#">7MBR100VB060-50</a>	7MBR100U4B120	
 M719 107.5 x 45.0	25				<a href="#">7MBR25VM120-50</a> <a href="#">7MBR25VP120-50</a>
	35				<a href="#">7MBR35VM120-50</a> <a href="#">7MBR35VP120-50</a>
	50		<a href="#">7MBR50VP060-50</a>		<a href="#">7MBR50VM120-50</a> <a href="#">7MBR50VP120-50</a>
	75		<a href="#">7MBR75VP060-50</a>		
	100		<a href="#">7MBR100VP060-50</a>		
 M720 122.0 x 62.0	50				<a href="#">7MBR50VN120-50</a> <a href="#">7MBR50VR120-50</a>
	75				<a href="#">7MBR75VN120-50</a> <a href="#">7MBR75VR120-50</a>
	100		<a href="#">7MBR100VR060-50</a>		<a href="#">7MBR100VN120-50</a> <a href="#">7MBR100VR120-50</a>
	150		<a href="#">7MBR150VR060-50</a>		<a href="#">7MBR150VN120-50</a> <a href="#">7MBR150VR120-50</a>
 M721 107.5 x 45.0	25				<a href="#">7MBR25VW120-50</a>
	35				<a href="#">7MBR35VW120-50</a>
	50				<a href="#">7MBR50VW120-50</a>
 M722 122.0 x 62.0	50				<a href="#">7MBR50VX120-50</a> <a href="#">7MBR50VZ120-50</a>
	75				<a href="#">7MBR75VX120-50</a>
	100		<a href="#">7MBR100VZ060-50</a>		<a href="#">7MBR100VX120-50</a>
	150				<a href="#">7MBR150VX120-50</a> <a href="#">7MBR150VZ120-50</a>

PIM



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