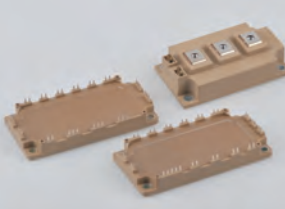
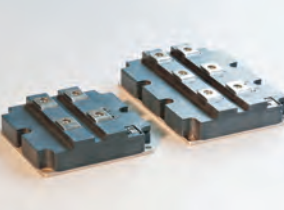
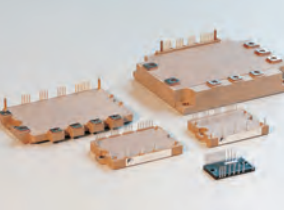
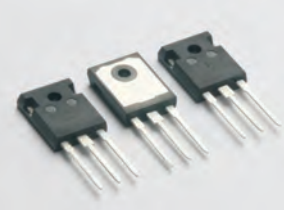
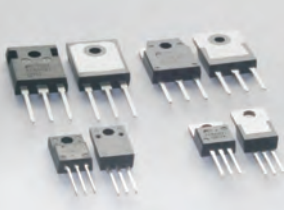
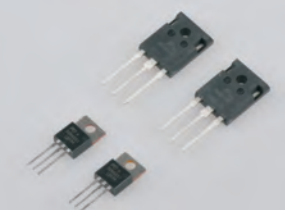
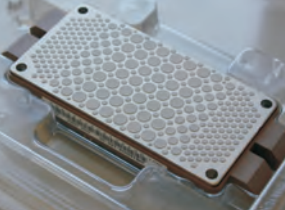
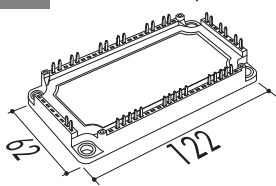
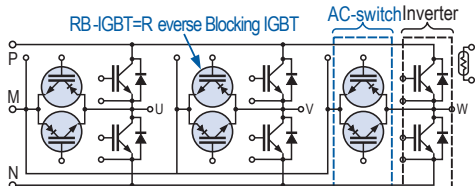
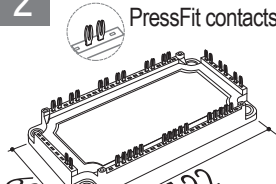
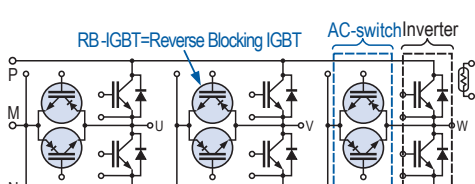
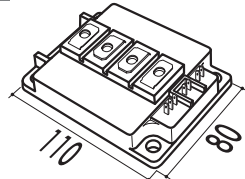
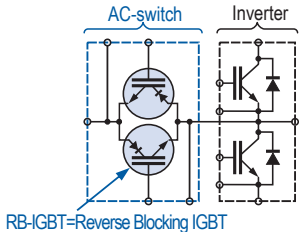
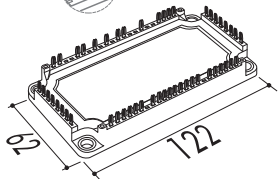
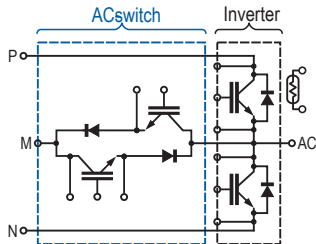


Power Semiconductors

IGBTs, MOSFETs, SiC-Schottky Diodes and IGBT-Drivers

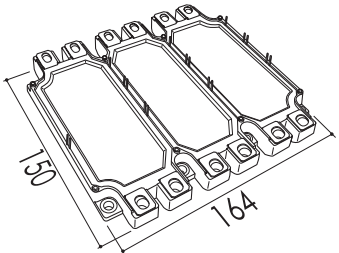
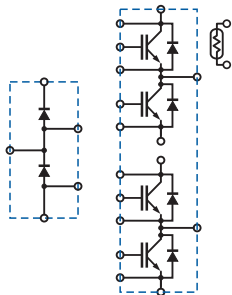
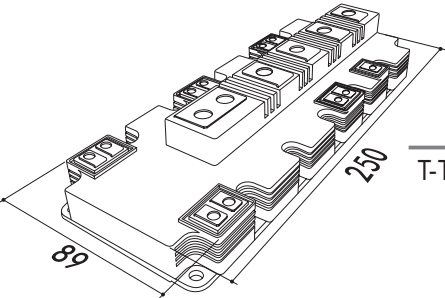
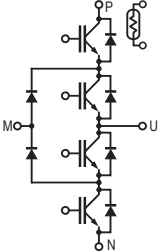
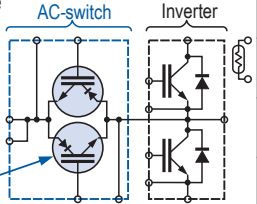
IGBT Modules for 3-Level inverters 1-2 	Hybrid IGBT-Modules with SiC Schottky Barrier Diodes 3-4 	PIM Power Integrated Modules Solder pins & PressFit contacts 5-8 	6-Pack IGBT-Modules, Solder pins & PressFit contacts 9 	2-Pack IGBT Modules, Spring-, Pin- & PressFit contacts 10 	Standard 1- & 2-Pack IGBT Modules 11 
High Power Modules 1200V, 1700V & 3300V 12 	High Power Modules 2-Pack & Chopper 13 	IPM Intelligent Power Modules 14-16 	Chopper Modules & High Speed IGBTs 17 	Discrete IGBTs, standard and Reverse Blocking IGBT 18 	
Super Junction- MOSFETs with & without FRED 19 	SiC Schottky Barrier Diodes 20 	IGBT-Drivers 21 	Pre-applied Thermal Interface Material (TIM) 22 	Fuji Electric Corp. of America 50 Northfield Avenue Edison, NJ 08837 USA Tel: (732)560-9410 Fax: (732)457-0042 x-fea-semi-group@fujielectric.com www.americas.fujielectric.com Email  Website 	

IGBT -Modules for 3-Level-inverters

IGBT-Modules for 3-Level-inverters			I _C	600V		1200V		1700V		
				V-Series 6thG eneration	AC-switch	V-Series 6thG eneration	AC-switch	V-Series 6thG eneration	AC-switch	
3 Phase	1	Solder pins  M1203	RB-IGBT=R everse Blocking IGBT AC-switchInverter 	50A			12MBi 50VN-120-50	600V		
				75A			12MBi 75VN-120-50	600V		
				100A			12MBi 100VN-120-50	600V		
	2	PressFit contacts  M1202	RB-IGBT=Reverse Blocking IGBT AC-switchInverter 	50A			12MBi 50VX-120-50	600V		
				75A			12MBi 75VX-120-50	600V		
				100A			12MBi 100VX-120-50	600V		
1 Phase	3	 M403	AC-switch Inverter 	220A					4MBi 220VF-170R2-50	1200V
				300A			4MBi 300VG-120R-50 4MBi 300VG-120R1-50	600V 900V		
				340A			4MBi 340VF-120R-50	600V		
				400A	4MBi 400VG-060R-50	600V	4MBi 400VF-120R-50	600V		
	4	PressFit contacts 	ACswitch Inverter 	300A			4MBi 300VX-120S-50*	600V		
				400A			4MBi 400VX-120S-50*	600V		

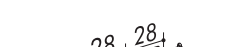
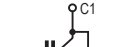
* Under development

IGBT -Modules for 3-Level-inverters

1 Phase	5	 I-Type 	600A	4MBi600VM-120-50*			
	6	 I-Type 	600A	4MBi600VC-120-50*			
	T-Type	 AC-switch Inverter RBIGBT=Reverse Blocking IGBT	450A	4MBi450VB-120R1-50	900V	4MBi450VB-170R2-50*	1200V
			600A			4MBi600VB-170R2-50*	1200V
			650A	4MBi650VB-120R1-50	900V		
			900A	4MBi900VB-120R1-50	900V		

* Under development

AC - switch

2-Pack	7			450A	2MBi 450VH-120F-50

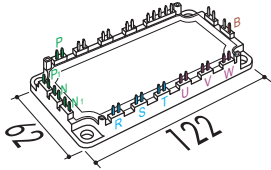
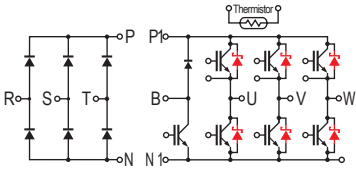
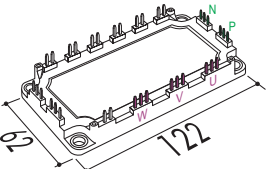
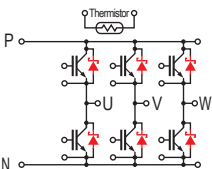
Hybrid IGBT-Modules with SiC-SBD ➡

Hybrid IGBT-Modules with SiC-SBD		I_C	1200V	1700V		
			V-Series 6th Generation	V-Series 6th Generation		
2-Pack	8			200A	2MSi 200VAB-120-53*	
	9			300A	2MSi 300VAH-120-C-53	
	10			400A		2MSi 400VE-170-53
	11			300A	2MSi 300VAN-120-53*	
				450A	2MSi 450VAN-120-53*	2MSi 450VAN-170-53*
550A					2MSi 550VAN-170-53*	
600A				2MSi 600VAN-120-53*		
12			1200A		2MSi 1200VAT-170 PC* 2MSi 1200VAT-170 EC*	

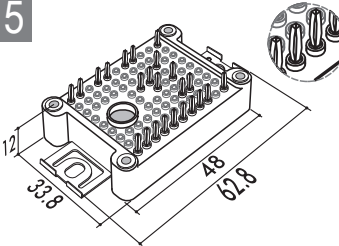
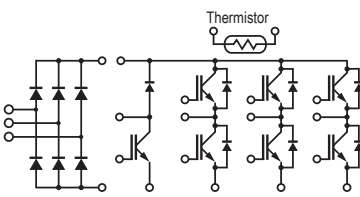
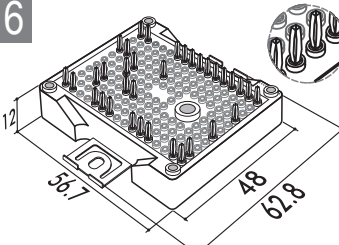
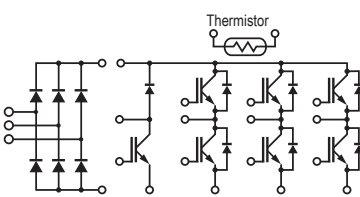
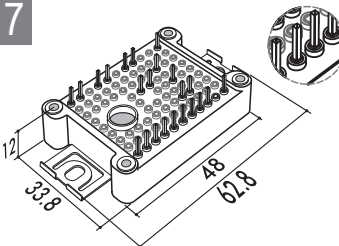
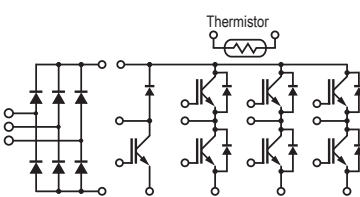
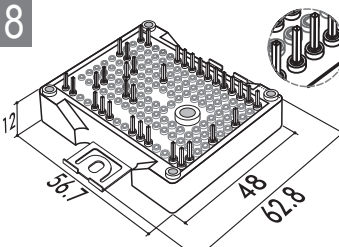
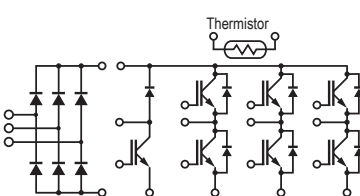
Suffix -53 = With $V_{CE,sat}$ & V_F rank label

* Under development

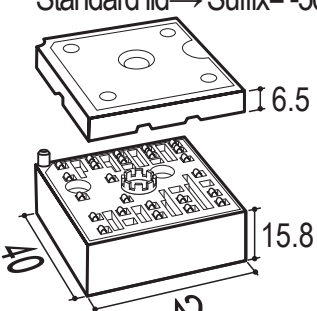
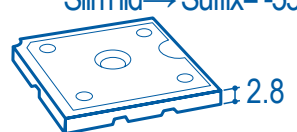
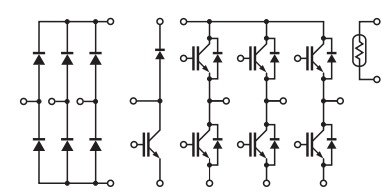
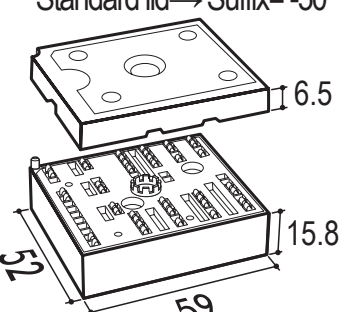
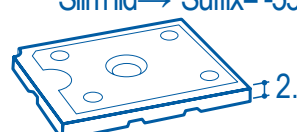
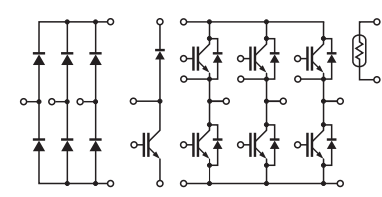
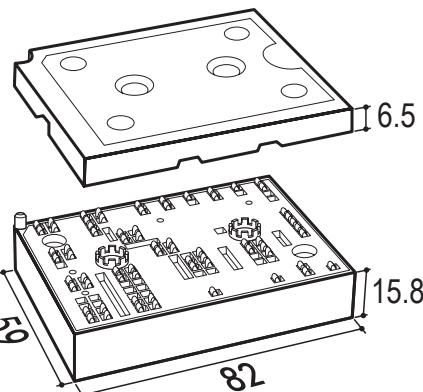
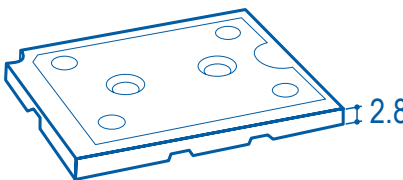
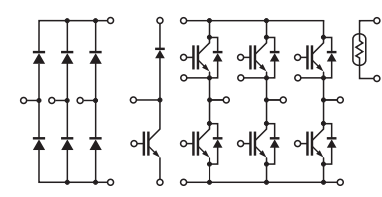
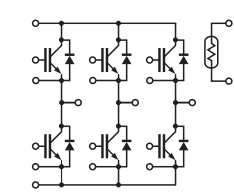
Hybrid IGBT-Modules with SiC-SBD ➡

			600V	1200V
		I_C	V-Series 6th Generation	V-Series 6th Generation
PIM	13	 	35A	7MSR 35VB-120-50
		50A	7MSR 50VB-060-50	7MSR 50VB-120-50
		75A	7MSR 75VB-060-50	
		100A	7MSR 100VB-060-50	
6-Pack	14	 	100A	6MSi 100VB-120-50

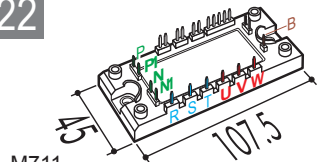
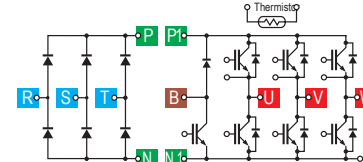
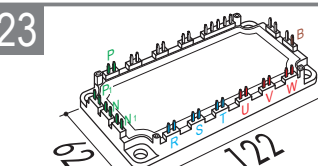
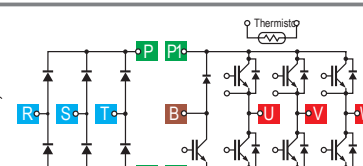
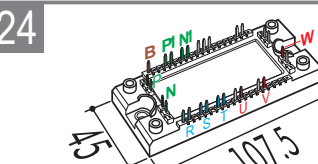
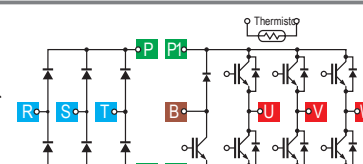
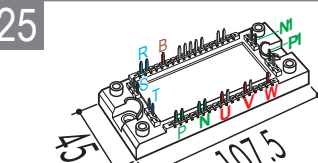
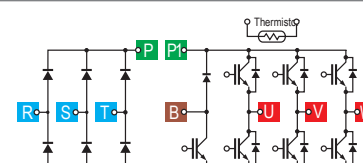
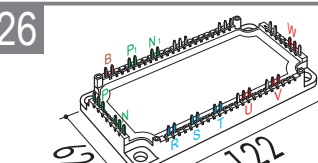
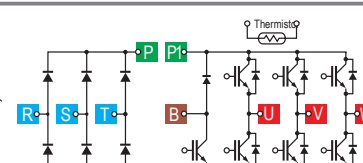
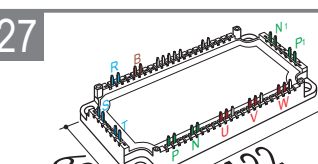
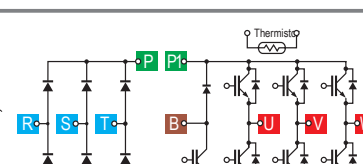
Small PIM IGBTs (**P**ower **I**ntegrated **M**odules)

			600V	650V	1200V	
		I_c	V-Series 6th Generation	X-Series 7th Generation	V-Series 6th Generation	X-Series 7th Generation
With PressFit Contacts	15   M726	10A	7MBR 10VKA-060-50	7MBR 10XKA-065-50	7MBR 10VKA-120-50	7MBR 10XKA-120-50
		15A	7MBR 15VKA-060-50	7MBR 15XKA-065-50	7MBR 15VKA-120-50	7MBR 15XKA-120-50
		20A	7MBR 20VKA-060-50	7MBR 20XKA-065-50		
		25A				7MBR 25XKA-120-50
		30A	7MBR 30VKA-060-50	7MBR 30XKA-065-50		
With PressFit Contacts	16   M727	15A			7MBR 15VKB-120-50	7MBR 15XKB-120-50
		25A			7MBR 25VKB-120-50	7MBR 25XKB-120-50
		35A			7MBR 35VKB-120-50	7MBR 35XKB-120-50
		50A	7MBR 50VKB-060-50	7MBR 50XKB-065-50		
With Solder Pins	17   M728	10A	7MBR 10VKC-060-50	7MBR 10XKC-065-50	7MBR 10VKC-120-50	7MBR 10XKC-120-50
		15A	7MBR 15VKC-060-50	7MBR 15XKC-065-50	7MBR 15VKC-120-50	7MBR 15XKC-120-50
		20A	7MBR 20VKC-060-50	7MBR 20XKC-065-50		
		25A				7MBR 25XKC-120-50
		30A	7MBR 30VKC-060-50	7MBR 30XKC-065-50		
With Solder Pins	18   M729	15A			7MBR 15VKD-120-50	7MBR 15XKD-120-50
		25A			7MBR 25VKD-120-50	7MBR 25XKD-120-50
		35A			7MBR 35VKD-120-50	7MBR 35XKD-120-50
		50A	7MBR 50VKD-060-50	7MBR 50XKD-065-50		

PIM and 6-PACK IGBTs with V-Series IGBT (MiniSKiiP® compatible)

				1200V	
				I_C	V-Series 6th Generation
MiniSKiiP® 1	19	Standard lid → Suffix= -50  Slim lid → Suffix= -53 		8A	7MBR 8VJA-120-50 7MBR 8VJA-120-53
				15A	7MBR 15VJA-120-50 7MBR 15VJA-120-53
MiniSKiiP® 2	20	Standard lid → Suffix= -50  Slim lid → Suffix= -53 		25A	7MBR 25VJB-120-50 7MBR 25VJB-120-53
				35A	7MBR 35VJB-120-50 7MBR 35VJB-120-53 7MBR 35VJB-120A-50 <i>With larger rectifier diodes</i> 7MBR 35VJB-120A-53 <i>With larger rectifier diodes</i>
MiniSKiiP® 3	21	Standard lid → Suffix= -50  Slim lid → Suffix= -53 		50A	7MBR 50VJC-120-50 7MBR 50VJC-120-53
				75A	7MBR 75VJC-120-50 7MBR 75VJC-120-53
				100A	7MBR 100VJC-120-50 7MBR 100VJC-120-53
				100A	6MBi 100VJC-120-50* 6MBi 100VJC-120-53*
				150A	6MBi 150VJC-120-50* 6MBi 150VJC-120-53* 6MBi 150VJC-120-55* <i>With SiN-DCB</i>

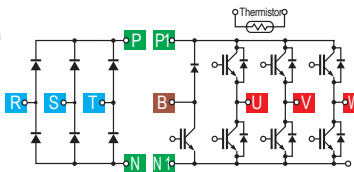
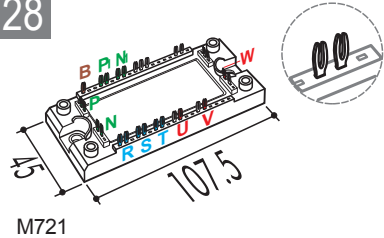
PIM IGBTs (Power Integrated Modules) with Solder Pins

With Solder Pins	22  M711		25A			7MBR 25VA-120-50	
			35A			7MBR 35VA-120-50	
			50A	7MBR 50VA-060-50			
	23  M712		35A			7MBR 35VB-120-50	
			50A			7MBR 50VB-120-50	
			75A	7MBR 75VB-060-50	7MBR 75VB-120-50		
			100A	7MBR 100VB-060-50			
	24  M719		25A			7MBR 25VM-120-50	
			35A			7MBR 35VM-120-50	7MBR 35XMA-120-50
			50A		7MBR 50XMA-065-50	7MBR 50VM-120-50	7MBR 50XMA-120-50
			75A		7MBR 75XMA-065-50		7MBR 75XME-120-50
	25  M719		25A			7MBR 25VP-120-50	
			35A			7MBR 35VP-120-50	7MBR 35XPA-120-50
			50A	7MBR 50VP-060-50	7MBR 50XPA-065-50	7MBR 50VP-120-50	7MBR 50XPA-120-50
			75A	7MBR 75VP-060-50	7MBR 75XPA-065-50		7MBR 75XPE-120-50
			100A	7MBR 100VP-060-50	7MBR 100XPE-065-50		
	26  M720		50A			7MBR 50VN-120-50	
			75A		7MBR 75XNA-065-50	7MBR 75VN-120-50	7MBR 75XNA-120-50
			100A		7MBR 100XNA-065-50	7MBR 100VN-120-50	7MBR 100XNA-120-50
			150A		7MBR 150XNA-065-50	7MBR 150VN-120-50	7MBR 150XNE-120-50
	27  M720		50A			7MBR 50VR-120-50	
			75A			7MBR 75VR-120-50	7MBR 75XRA-120-50
			100A	7MBR 100VR-060-50	7MBR 100XRA-065-50	7MBR 100VR-120-50	7MBR 100XRA-120-50
			150A	7MBR 150VR-060-50	7MBR 150XRA-065-50	7MBR 150VR-120-50	7MBR 150XRE-120-50

PIM IGBTs (Power Integrated Modules) with PressFit Contacts

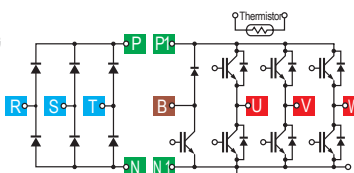
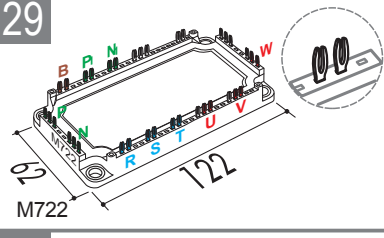
With PressFit Contacts

28



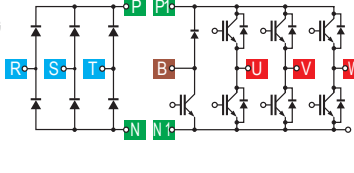
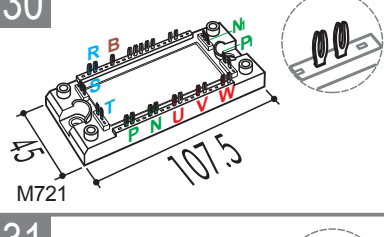
M721

29



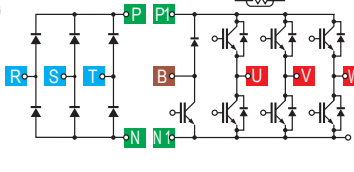
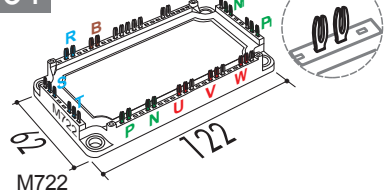
M722

30



M721

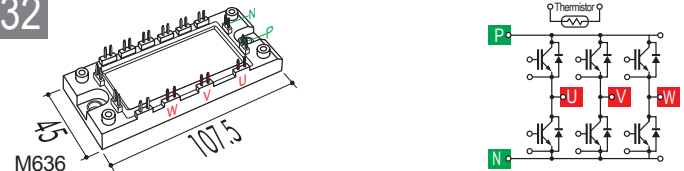
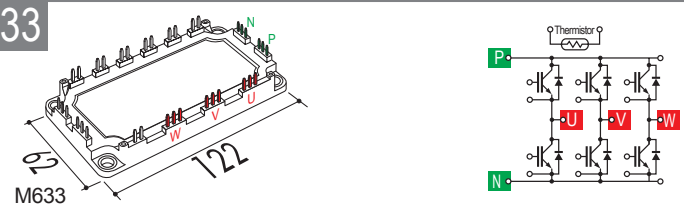
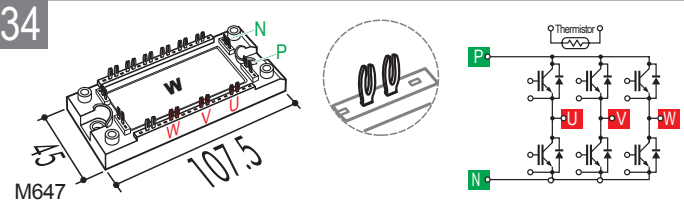
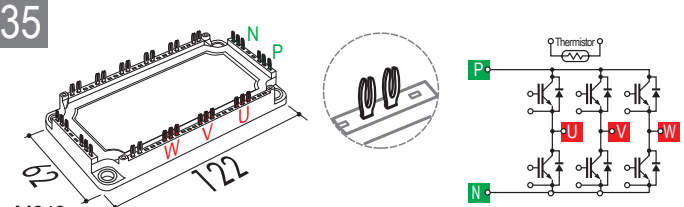
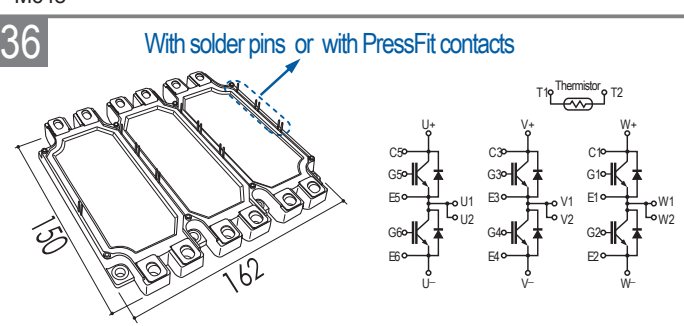
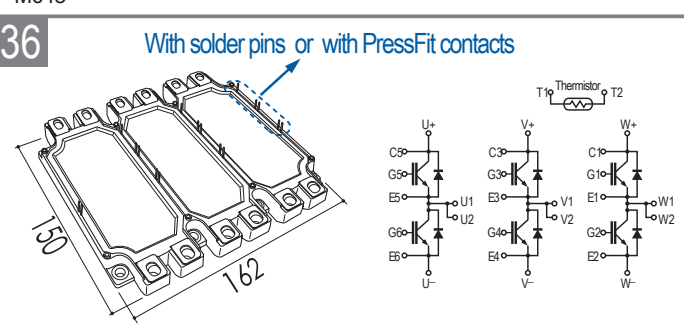
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M722

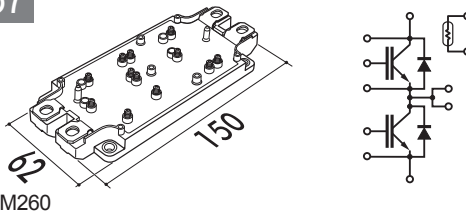
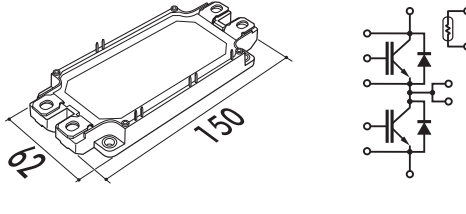
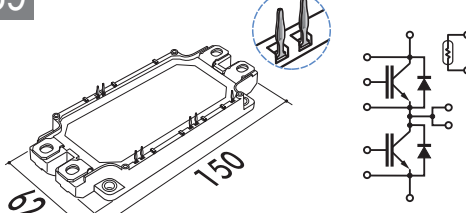
25A		7MBR 50XWA-065-50	7MBR 25VW-120-50	
35A			7MBR 35VW-120-50	7MBR 35XWA-120-50
50A			7MBR 50VW-120-50	7MBR 50XWA-120-50
75A		7MBR 75XWA-065-50		7MBR 75XWE-120-50
50A			7MBR 50VX-120-50	
75A		7MBR 75XXA-065-50	7MBR 75VX-120-50	7MBR 75XXA-120-50
100A		7MBR 100XXA-065-50	7MBR 100VX-120-50	7MBR 100XXA-120-50
150A		7MBR 150XXA-065-50	7MBR 150VX-120-50	7MBR 150XXE-120-50
25A			7MBR 25VY-120-50	
35A			7MBR 35VY-120-50	7MBR 35XYA-120-50
50A	7MBR 50VY-060-50	7MBR 50XYA-065-50	7MBR 50VY-120-50	7MBR 50XYA-120-50
75A	7MBR 75VY-060-50	7MBR 75XYA-065-50		7MBR 75XYE-120-50
100A	7MBR 100VY-060-50	7MBR 100XYE-065-50		
50A			7MBR 50VZ-120-50	
75A			7MBR 75VZ-120-50	7MBR 75XZA-120-50
100A	7MBR 100VZ-060-50	7MBR 100XZA-065-50	7MBR 100VZ-120-50	7MBR 100XZA-120-50
150A	7MBR 150VZ-060-50	7MBR 150XZA-065-50	7MBR 150VZ-120-50	7MBR 150XZE-120-50

6-Pack IGBTs

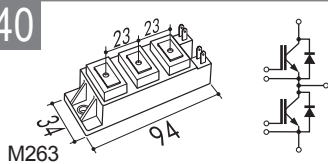
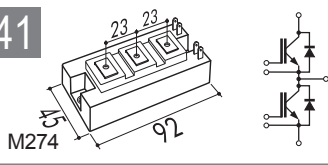
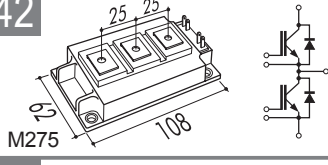
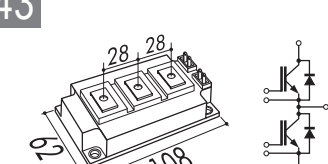
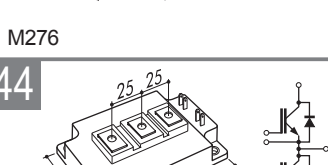
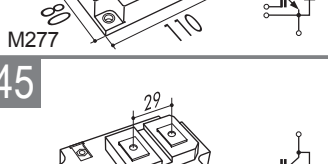
With Solder Pins	32		50A	6MBi 50VA-060-50	6MBi 50VA-120-50		
	33		75A	6MBi 75VA-060-50	6MBi 75VA-120-50		
			100A	6MBi 100VA-060-50	6MBi 100VA-120-50		
With PressFit Contacts	34		100A		6MBi 100VB-120-50	6MBi 100XBA-120-50	
			150A	6MBi 150VB-060-50	6MBi 150VB-120-50	6MBi 150XBA-120-50	
			180A		6MBi 180VB-120-50		
	35		200A		6MBi 180VB-120-55 Equivalent to 200A by lower R _{th(j-c)}	6MBi 200XBA-120-50	6MBi 200XBE-120-50
			50A	6MBi 50VW-060-50	6MBi 50VW-120-50		
			75A	6MBi 75VW-060-50	6MBi 75VW-120-50		
High Power	36		100A		6MBi 100VX-120-50	6MBi 100XXA-120-50	6MBi 100VX-170-50
			150A	6MBi 150VX-060-50	6MBi 150VX-120-50	6MBi 150XXA-120-50	
			180A		6MBi 180VX-120-50		
	36		200A		6MBi 180VX-120-55 Equivalent to 200A by lower R _{th(j-c)}	6MBi 200XXA-120-50	6MBi 200XXE-120-50
			225A		6MBi 225V-120-50		
			300A		6MBi 300V-120-50		6MBi 300V-170-50
			450A		6MBi 450V-120-50		6MBi 450V-170-50
			550A		6MBi 550V-120-50		
			225A		6MBi 225VY-120-50*		6MBi 225VY-170-50*
With PressFit contacts	300A		6MBi 300VY-120-50*		6MBi 300VY-170-50*		
	450A		6MBi 450VY-120-50*		6MBi 450VY-170-50*		
	550A		6MBi 550VY-120-50*		6MBi 550VY-170-50*		

* Under development

2-Pack IGBT-Modules with Spring, Pin & PressFit Contacts

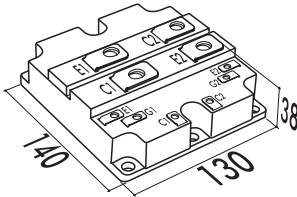
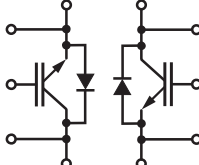
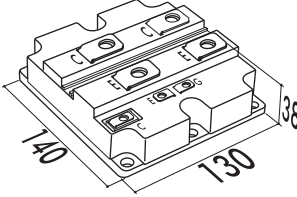
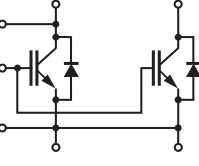
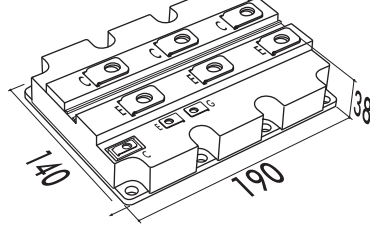
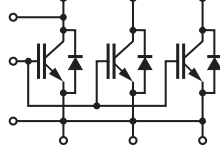
2-Pack IGBT-Modules with Spring, Pin & PressFit Contacts		I _C	1200V			1700	
			V-Series 6th G eneration	V-Series 6th G eneration With SiN-substrate 20% Lower thermal impedance	X-Series 7th G eneration	V-Series 6th G eneration	X-Series 7th G eneration
Spring Contacts	37  M260	225A	2MBi 225VJ-120-50				
		300A	2MBi 300VJ-120-50				
		450A	2MBi 450VJ-120-50				
		550A				2MBi 550VJ-170-50	
		600A		2MBi 600VJ-120-50			
Solder Pins	38  M254	225A	2MBi 225VN-120-50	2MBi 225VN-120S-50	2MBi 225XNA-120-50 *		2MBi 225XNA-170-50 *
		300A	2MBi 300VN-120-50	2MBi 300VN-120S-50	2MBi 300XNA-120-50 *	2MBi 300VN-170-50	2MBi 300XNA-170-50 *
		450A	2MBi 450VN-120-50	2MBi 450VN-120S-50	2MBi 450XNA-120-50 *	2MBi 450VN-170-50	2MBi 450XNA-170-50 *
		550A				2MBi 550VN-170-50	
		600A		2MBi 600VN-120-50	2MBi 600XNE-120-50 *		2MBi 600XNE-170-50 *
		800A			2MBi 800XNE-120-50 *		
PressFit Contacts	39 	225A	2MBi 225VX-120-50		2MBi 225XNB-120-50 *	2MBi 225VX-170-50	2MBi 225XNB-170-50 *
		300A	2MBi 300VX-120-50		2MBi 300XNB-120-50 *	2MBi 300VX-170-50	2MBi 300XNB-170-50 *
		450A	2MBi 450VX-120-50		2MBi 450XNB-120-50 *	2MBi 450VX-170-50	2MBi 450XNB-170-50 *
		550A				2MBi 550VX-170-50	
		600A		2MBi 600VX-120-50	2MBi 600XNF-120-50 *		2MBi 600XNF-170-50 *
		800A			2MBi 800XNF-120-50 *		

* Under development

		600V	650V	1200V		1700V	
Standard1 & 2-Pack		V-Series 6th Generation	X-Series 7th Generation	V-Series 6th Generation	X-Series 7th Generation	V-Series 6th Generation	X-Series 7th Generation
2-Pack	40 	75A		2MBi 75VA-120-50		2MBi 75VA-170-50	2MBi 75XAA-170-50 *
		100A	2MBi 100VA-060-50	2MBi 100VA-120-50	2MBi 100XAA-120-50 *	2MBi 100VA-170-50	2MBi 100XAA-170-50 *
		150A	2MBi 150VA-060-50	2MBi 150VA-120-50	2MBi 150XAA-120-50 *		2MBi 150XAA-170-50 *
		200A	2MBi 200VA-060-50		2MBi 200XAA-120-50 *		
	41 	150A		2MBi 150VB-120-50			
		200A		2MBi 200VB-120-50	2MBi 200XBE-120-50 *		
		300A	2MBi 300VB-060-50		2MBi 300XBE-120-50 *		
		400A	2MBi 400VB-060-50				
	42 	300A		2MBi 300VD-120-50			
		400A	2MBi 400VD-060-50	2MBi 400XDE-065-50 *	2MBi 400VD-120-50		
		600A	2MBi 600VD-060-50				
	43 	150A				2MBi 150VH-170-50	2MBi 150XHA-170-50 *
		200A		2MBi 200VH-120-50		2MBi 200VH-170-50	2MBi 200XHA-170-50 *
		300A		2MBi 300VH-120-50	2MBi 300XHA-120-50 *	2MBi 300VH-170-50	2MBi 300XHA-170-50 *
		400A					2MBi 400XHA-170-50 *
		450A		2MBi 450VH-120-50	2MBi 450XHA-120-50 *		
		600A			2MBi 600XHA-120-50 *		
	44 	300A		2MBi 300VE-120-50		2MBi 300VE-170-50	2MBi 300XEE-170-50 *
		400A				2MBi 400VE-170-50	2MBi 400XEE-170-50 *
		450A		2MBi 450VE-120-50	2MBi 450XEE-120-50 *		
		600A	2MBi 600VE-060-50	2MBi 600VE-120-50	2MBi 600XEE-120-50 *		
1-Pack	45 	300A				1MBi 300V-170-50	
		400A		1MBi 400V-120-50 1MBi 400VF-120-50		1MBi 400V-170-50	
		600A		1MBi 600V-120-50 1MBi 600VF-120-50		1MBi 600V-170-50	
		900A		1MBi 900V-120-50			

* Under development

High Power Modules 1 & 2 Pack

High Power Modules 1 & 2 Pack			I _C	1200V	1700V		3300V	
				V-Series 6th Generation With Cu-baseplate Soft turn-off	V-Series 6th Generation With Cu-baseplate Low switching loss	V-Series 6th Generation With AlSiC-baseplate Low switching loss	U-Series 5th Generation With AlSiC-baseplate Soft turn-off	U-Series 5th Generation With AlSiC-baseplate Low switching loss
2-Pack	46	 M256, M278	600A	2MBi 600VG-120P	2MBi 600VG-170E	2MBi 600VT-170E		
			800A	2MBi 800VG-120P	2MBi 800VG-170E	2MBi 800VT-170E		
			1200A	2MBi 1200VG-120P	2MBi 1200VG-170E	2MBi 1200VT-170E		
1-Pack	47	 M151, M155	800A				1MBi 800UG-330	
			1000A				1MBi 1000UG-330	1MBi 1000UG-330B
			1200A	1MBi 1200VC-120P	1MBi 1200VC-170E	1MBi 1200VR-170E		
			1600A	1MBi 1600VC-120P	1MBi 1600VC-170E	1MBi 1600VR-170E		
			2400A	1MBi 2400VC-120P	1MBi 2400VC-170E	1MBi 2400VR-170E		
			1200A				1MBi 1200UE-330	
			1500A				1MBi 1500UE-330	1MBi 1500UE-330B
	48	 M152, M156	2400A	1MBi 2400VD-120P	1MBi 2400VD-170E	1MBi 2400VS-170E		
			3600A	1MBi 3600VD-120P	1MBi 3600VD-170E	1MBi 3600VS-170E		

High Power Modules, 2-Pack & Chopper

		1200V		1700V	
		V-Series 6th Generation E-type (Low switching loss) P-type (Soft turn-off)	X-Series 7th Generation E-type (Low switching loss) P-type (Soft turn-off)	V-Series 6th Generation E-type (Low switching loss) P-type (Soft turn-off)	X-Series 7th Generation E-type (Low switching loss) P-type (Soft turn-off)
2-Pack	49	600A	2MBi 600VXA-120E-50		
		650A		2MBi 650VXA-170E-50 2MBi 650VXA-170EA-50 (With larger free wheeling diode)	2MBi 650XXA-170E-50*
		900A	2MBi 900VXA-120E-50 2MBi 900VXA-120P-50	2MBi 900XXA-120E-50* 2MBi 900XXA-120P-50*	
		1200A		2MBi 1200XXE-120E-50* 2MBi 1200XXE-120P-50*	2MBi 1200XXE-170P-50*
Chopper	M271	650A		1MBi 650VXA-170EL-50	
		900A	1MBi 900VXA-120PD-50		
		650A		1MBi 650VXA-170EH-50	
		900A	1MBi 900VXA-120PC-50		
2-Pack	50	1000A		2MBi 1000VXB-170E-50 2MBi 1000VXB-170EA-50 (With larger free wheeling diode)	2MBi 1000XXB-170E-50*
		1400A	2MBi 1400VXB-120E-50 2MBi 1400VXB-120P-50	2MBi 1400VXB-170E-50 2MBi 1400VXB-170P-50	2MBi 1400XXB-170P-50*
		1800A		2MBi 1800XXF-120P-50*	2MBi 1800XXF-170P-50*
Chopper	M272	1000A		1MBi 1000VXB-170EL-50	
		1400A	1MBi 1400VXB-120PL-50	1MBi 1400VXB-170EL-50	
		1000A		1MBi 1000VXB-170EH-50	
		1400A	1MBi 1400VXB-120PH-50	1MBi 1400VXB-170EH-50	

Above devices are available with V_{CEsat} & V_F rank label for optimum paralleling (→suffix -54 instead of -50)

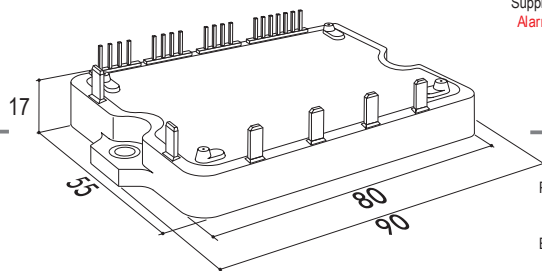
* Under development

IPM IGBTs (Intelligent Power Modules)

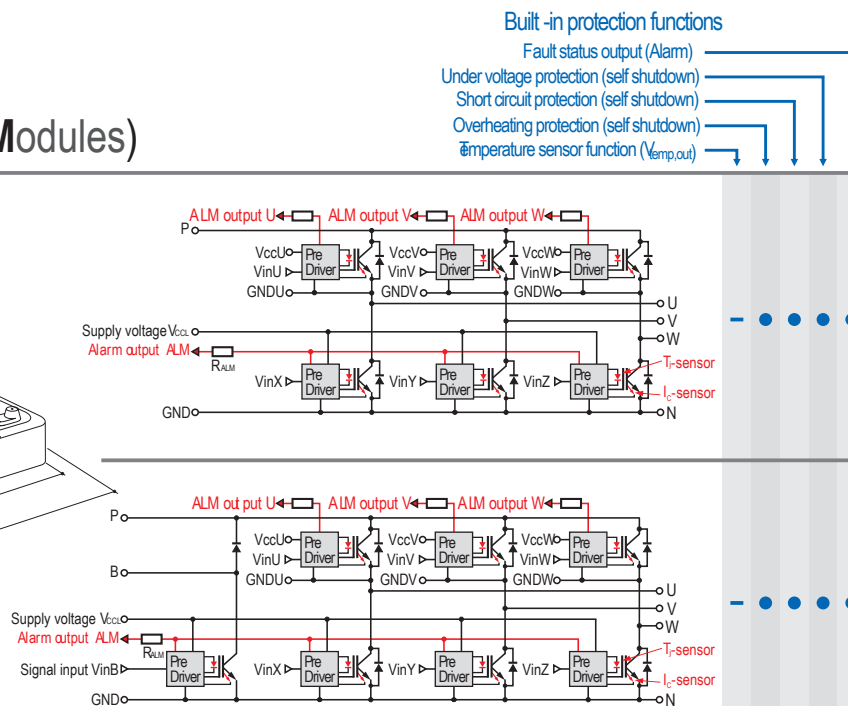
Built-in protection functions

- Fault status output (Alarm)
- Under voltage protection (self shutdown)
- Short circuit protection (self shutdown)
- Overheating protection (self shutdown)
- Temperature sensor function ($V_{temp.out}$)

		600V		1200V
		V-Series 6th Generation	X-Series 7th Generation	V-Series 6th Generation
Without Brake-Chopper	51 With High Voltage Driver-IC	15A	6MBP 15XSD-060-50	
		20A	6MBP 20XSD-060-50	
		30A	6MBP 30XSD-060-50	
		35A	6MBP 35XSD-060-50	
		15A	6MBP 15XSF-060-50	
		20A	6MBP 20XSF-060-50	
		30A	6MBP 30XSF-060-50	
		35A	6MBP 35XSF-060-50	
Without Brake-Chopper	52 I_c - & T_j -Sensors on chip	10A		6MBP 10VAA-120-50
		15A		6MBP 15VAA-120-50
		20A	6MBP 20VAA-060-50	
		25A		6MBP 25VAA-120-50
		30A	6MBP 30VAA-060-50	
		50A	6MBP 50VAA-060-50	
Without Brake-Chopper	53 I_c - & T_j -Sensors on chip	25A		6MBP 25VBA-120-50
		35A		6MBP 35VBA-120-50
		50A	6MBP 50VBA-060-50	6MBP 50VBA-120-50
		75A	6MBP 75VBA-060-50	

54 I_c - & T_j -Sensors on chip

P636



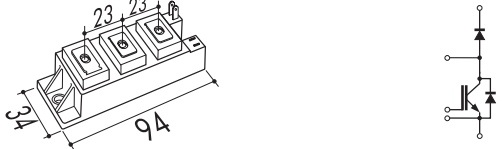
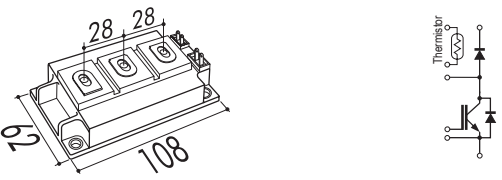
	600V	1200V
I _C	V-Series 6th Generation	V-Series 6th Generation
25A		6MBP 25VFN-120-50
35A		6MBP 35VFN-120-50
50A	6MBP 50VFN-060-50	6MBP 50VFN-120-50
75A	6MBP 75VFN-060-50	
100A	6MBP 100VFN-060-50	
25A		7MBP 25VFN-120-50
35A		7MBP 35VFN-120-50
50A	7MBP 50VFN-060-50	7MBP 50VFN-120-50
75A	7MBP 75VFN-060-50	
100A	7MBP 100VFN-060-50	

IPM IGBTs (Intelligent Power Modules)

Built-in protection functions
 Fault status output (Alarm)
 Under voltage protection (self shutdown)
 Short circuit protection (self shutdown)
 Overheating protection (self shutdown)
 Temperature sensor function ($T_{\text{temp,out}}$)

				I_C	600V V-Series 6th Generation	1200V V-Series 6th Generation
Without Brake-Chopper	55 I_C - & T_j -Sensors on chip			25A		6MBP 25VDA-120-50
				35A		6MBP 35VDA-120-50
				50A	6MBP 50VDA-060-50	6MBP 50VDA-120-50 6MBP 50VDN-120-50 ¹⁾
				75A	6MBP 75VDA-060-50	6MBP 75VDA-120-50 6MBP 75VDN-120-50 ¹⁾
				100A	6MBP 100VDA-060-50 6MBP 100VDN-060-50 ¹⁾	6MBP 100VDA-120-50 6MBP 100VDN-120-50 ¹⁾
				150A	6MBP 150VDA-060-50 6MBP 150VDN-060-50 ¹⁾	
				200A	6MBP 200VDA-060-50 6MBP 200VDN-060-50 ¹⁾	
With Brake-Chopper	P630			25A		7MBP 25VDA-120-50
				35A		7MBP 35VDA-120-50
				50A	7MBP 50VDA-060-50	7MBP 50VDA-120-50 7MBP 50VDN-120-50 ¹⁾
				75A	7MBP 75VDA-060-50	7MBP 75VDA-120-50 7MBP 75VDN-120-50 ¹⁾
				100A	7MBP 100VDA-060-50 7MBP 100VDN-060-50 ¹⁾	7MBP 100VDA-120-50 7MBP 100VDN-120-50 ¹⁾
				150A	7MBP 150VDA-060-50 7MBP 150VDN-060-50 ¹⁾	
				200A	7MBP 200VDA-060-50 7MBP 200VDN-060-50 ¹⁾	
Without Brake-Chopper	56 I_C - & T_j -Sensors on chip			100A		6MBP 100VEA-120-50
				150A		6MBP 150VEA-120-50
				200A	6MBP 200VEA-060-50	6MBP 200VEA-120-50
				300A	6MBP 300VEA-060-50	
				400A	6MBP 400VEA-060-50	
With Brake-Chopper	P631			100A		7MBP 100VEA-120-50
				150A		7MBP 150VEA-120-50
				200A	7MBP 200VEA-060-50	7MBP 200VEA-120-50
				300A	7MBP 300VEA-060-50	
				400A	7MBP 400VEA-060-50	

1) With high thermal performance

Chopper(Standard and high speed IGBTs)		I_C	1200V		
			Planar-NPT High Speed-Series	U - Series 5th Generation	V - Series 6th Generation
Chopper	57  M262	50A		1MBi 50U4F-120L-50	
		75A		1MBi 75U4F-120L-50	
		100A		1MBi 100U4F-120L-50	
		150A			1MBi 150VA-120L-50
		200A			1MBi 200VA-120L-50
Chopper	58  M259	200A	1MBi 200HH-120L-50	1MBi 200U4H-120L-50 Without thermistor	
		300A	1MBi 300HH-120L-50		
		400A	1MBi 400HH-120L-50		

High Speed IGBTs		I_C	1200V
			Planar-NPT High Speed-Series
2-Pack	59 	100A	2MBi 100HJ-120-50
		150A	2MBi 150HJ-120-50
		200A	2MBi 200HJ-120-50
		300A	2MBi 300HJ-120-50

Discrete IGBTs

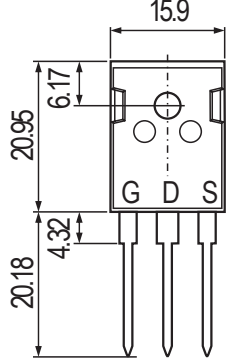
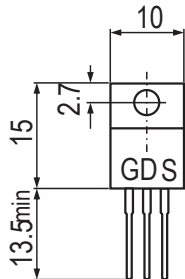
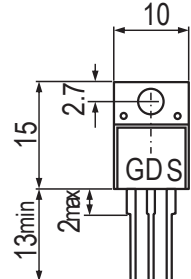
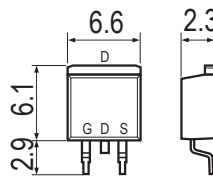
		V-Series, 6th Generation Low loss, ~10kHz		V-Series, 6th Generation High speed, 10~30kHz		W-Series, 6th Generation Ultra high speed, 20~100kHz	
		I_C		I_C		I_C	
		600V	1200V	600V	1200V	650V	1200V
TO-247	60	15A			FGW 15N 120H		
		25A					FGW 25N 120W
		30A			FGW 30N 120H		
		35A		FGW 35N 60H			
		40A			FGW 40N 120H	FGW 40N 65W *	FGW 40N 120W
		50A		FGW 50N 60H		FGW 50N 65W *	
		60A				FGW 60N 65W *	
		75A		FGW 75N 60H			
	61	15A	FGW 15N 120VD		FGW 15N 120HD		
		25A	FGW 25N 120VD				FGW 25N 120WD FGW 25N 120WE ¹⁾ *
		30A	FGW 30N 60VD		FGW 30N 120HD	FGW 30N 65WD *	
		35A		FGW 35N 60HD FGW 35N 60HC ¹⁾			
		40A	FGW 40N 120VD		FGW 40N 120HD	FGW 40N 65WD * FGW 40N 65WE ¹⁾ *	FGW 40N 120WD FGW 40N 120WE ¹⁾ *
		50A	FGW 50N 60VD	FGW 50N 60HD FGW 50N 60HC ¹⁾		FGW 50N 65WD * FGW 50N 65WE ¹⁾ *	
		60A				FGW 60N 65WD * FGW 60N 65WE ¹⁾ *	
		75A		FGW 75N 60HD FGW 75N 60HC ¹⁾		FGW 75N 65WE ¹⁾ *	

* Under development

1) With full rating free wheeling diode

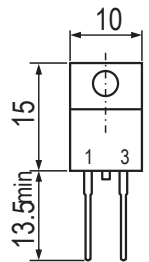
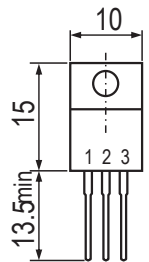
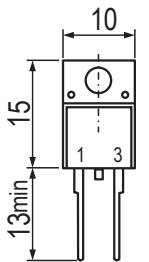
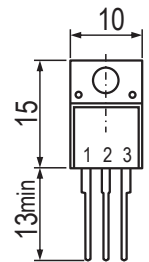
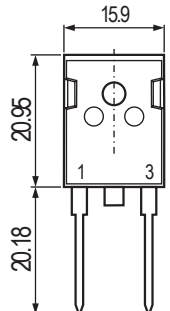
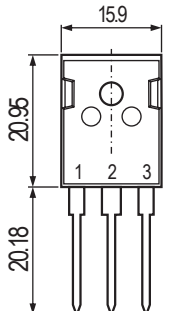
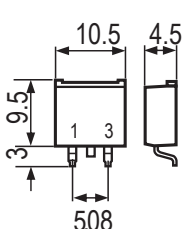
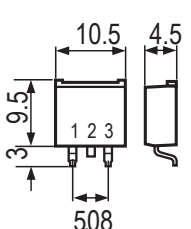
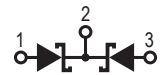
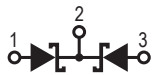
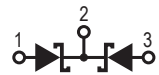
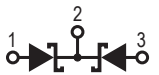
Reverse Blocking IGBT

		I_C	600V
TO-247	61	85A	FGW 85N 60RB

Super - Junction MOSFET			TO -247	TO -220	TO -220F	TO -252
V_{DS}	$R_{DS(on), max}$	I_D				
600V	25.4 mW	95.5 A	FM W 60N 025 S2			
	40.0 mW	66.2 A	FM W 60N 040 S2			
	55.0 mW	50.3 A	FM W 60N 055 S2			
	70.0 mW	39.4 A	FM W 60N 070 S2		FM V 60N 070 S2	
	79.0 mW	37.1 A	FM W 60N 079 S2	FM P 60N 079 S2	FM V 60N 079 S2	
	88.0 mW	32.8 A	FM W 60N 088 S2	FM P 60N 088 S2	FM V 60N 088 S2	
	99.0 mW	29.2 A	FM W 60N 099 S2	FM P 60N 099 S2	FM V 60N 099 S2	
	125.0 mW	23.4 A	FM W 60N 125 S2	FM P 60N 125 S2	FM V 60N 125 S2	
	160.0 mW	18.4 A	FM W 60N 160 S2	FM P 60N 160 S2	FM V 60N 160 S2	
	190.0 mW	15.5 A	FM W 60N 190 S2	FM P 60N 190 S2	FM V 60N 190 S2	
650V	280.0 mW	10.7 A		FM P 60N 280 S2	FM V 60N 280 S2	FM D 60N 280 S2
	380.0 mW	8.1 A		FM P 60N 380 S2	FM V 60N 380 S2	FM D 60N 380 S2
	28.7 mW	89.8 A	FM W 65N 029 S2*			
	45.0 mW	62.4 A	FM W 65N 045 S2*			
600V	79.0 mW	37.1 A	FM W 65N 079 S2*		FM V 65N 079 S2*	
	101.0 mW	30.6 A	FM W 65N 101 S2*	FM P 65N 101 S2*	FM V 65N 101 S2*	
	27.0 mW	95.5 A	FM W 60N 027 S2 FD			
	43.0 mW	66.2 A	FM W 60N 043 S2 FD			
600V	59.0 mW	50.3 A	FM W 60N 059 S2 FD			
	75.0 mW	39.4 A	FM W 60N 075 S2 FD		FM V 60N 075 S2 FD	
	84.0 mW	37.1 A	FM W 60N 084 S2 FD	FM P 60N 084 S2 FD	FM V 60N 084 S2 FD	
	94.0 mW	32.8 A	FM W 60N 094 S2 FD	FM P 60N 094 S2 FD	FM V 60N 094 S2 FD	
	105.0 mW	29.2 A	FM W 60N 105 S2 FD	FM P 60N 105 S2 FD	FM V 60N 105 S2 FD	
	133.0 mW	23.4 A	FM W 60N 133 S2 FD	FM P 60N 133 S2 FD	FM V 60N 133 S2 FD	
	170.0 mW	18.4 A	FM W 60N 170 S2 FD	FM P 60N 170 S2 FD	FM V 60N 170 S2 FD	

* Under development

SiC Schottky Barrier Diodes

		TO -220		TO -220F (insulated)		TO -247		T-Pack S	
									
		Single	Dual	Single	Dual	Single	Dual	Single	Dual
									
650V	10A	FDCP 10S 65		FDCA 10S 65		FDCY 10S 65		FDCC 10S 65	
	20A		FDCP 20C 65		FDCA 20C 65		FDCY 20C 65		FDCC 20C 65
	25A	FDCP 25S 65		FDCA 25S 65		FDCY 25S 65		FDCC 25S 65	
	50A						FDCY 50C 65		
1200V	18A			FDCA 18S 120		FDCY 18S 120			
	36A						FDCY 36C 120		

I_{FAV}

Single IGBT-Drivers	Type Name	I_{peak}	$V_{iso,max}$	f_{max}
Single power supply needed with $V_{DC} = +20V$	1200V VLA 517-01R	4A	2.5kV	40kHz
	1700V			
Built-in power supply with short circuit protection	1200V VLA 542-01R	5A	2.5kV	20kHz
	1700V			
Built-in power supply with short circuit protection and adjustable fall-time	1200V VLA 546-01R	5A	4.0kV	20kHz
	1700V			
Built-in power supply with short circuit protection	1200V VLA 551-01R	5A	2.5kV	20kHz
	1700V			
Built-in power supply with short circuit protection	1200V VLA 551K-01R	5A	4.0kV	20kHz
	1700V			
Built-in power supply with short circuit protection and adjustable fall-time	1200V VLA 500-01R	12A	2.5kV	20kHz
	1700V			
Built-in power supply with short circuit protection and adjustable fall-time	1200V VLA 502-01R	12A	2.5kV	60kHz
	1700V			
Built-in power supply with short circuit protection and adjustable fall-time	1200V VLA 500K-01R	12A	4.0kV	20kHz
	1700V			
Built-in power supply with short circuit protection and adjustable fall-time	1200V			
	1700V VLA 574-01R	15A	4.0kV	20kHz
Built-in power supply with short circuit protection and adjustable fall-time	1200V			
	1700V VLA 552-01R	24A	4.0kV	10kHz

Dual IGBT-Drivers	Type Name	I_{peak}	$V_{iso,max}$	f_{max}
Built-in power supply & Short circuit protection with adjustable fall-time and UVLO	1200V VLA 567-01R	8A	2.5kV	20kHz
	1700V			
Built-in power supply & Short circuit protection	1200V VLA 536-01R	5A	2.5kV	20kHz
	1700V			
Built-in power supply & Short circuit protection	1200V VLA 559-01R	24A	4.0kV	5kHz
	1700V VLA 559-02R	24A	4.0kV	5kHz

4 Channel DC/DC Converter for Gate Power Supply			
Package	Type Name	$V_{iso,max}$	Applications
	VLA 130-24205QR	2.5kV	Inverter up to 30kW Gate power supply for 3-Level IGBT s

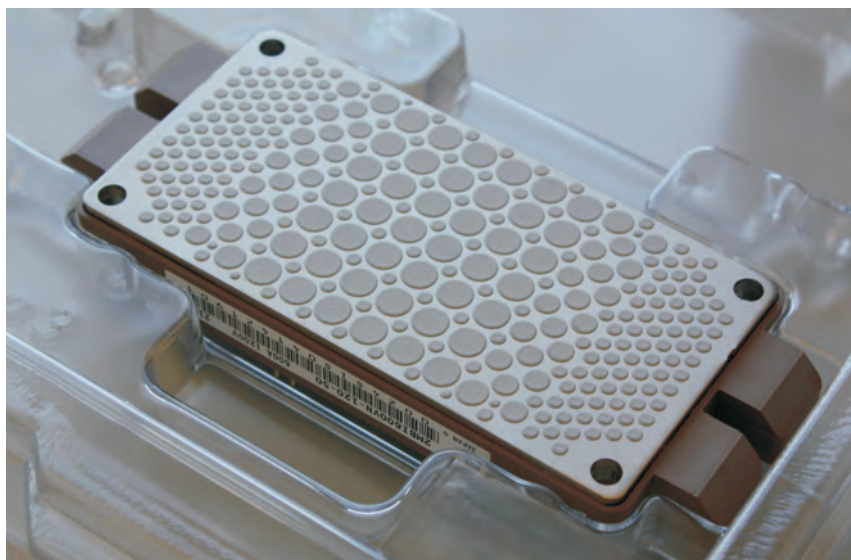
For further plug & play IGBT- drivers please refer to the following suppliers:

www.igbt-driver.com

www.agileswitch.com

www.anvilex.de

Industrialized Process for Pre-applied Thermal Interface Material (TIM)



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

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

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

The whole process is controlled by our qualified staff to ensure our high quality standards.

Features

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

Process - Benefits

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

Thermal - Benefits

- + Higher thermal conductivity
- + Uniform thermal resistance
- + Higher reliability and life time.

Our range of modules with pre-applied TIM is being continually expanded

For latest availability status please contact us

About Type Name

The Type Name is not exactly the item code for the ordering process

1. Modules with Standard IGBT-Chips

2 M Bi 450 V H - 120 - 50

Suffix - 50 = RoHS compliant

Voltage class: 060 = 600V · 065 = 650V · 120 = 1200V · 170 = 1700V · 330 = 3300V

Package type

IGBT-series (here V-Series) / IGBT-technology

Current class I_c [A]

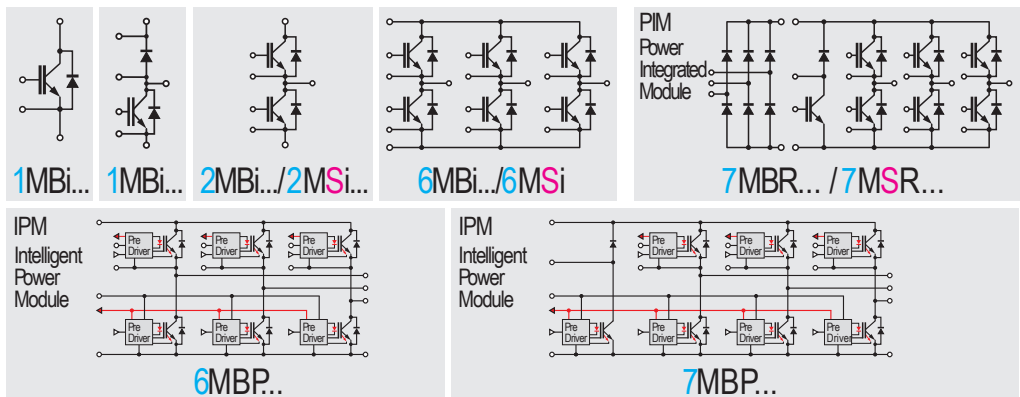
Device type & configuration

MBi.....: Standard IGBT module (1-, 2- and 6-pack)

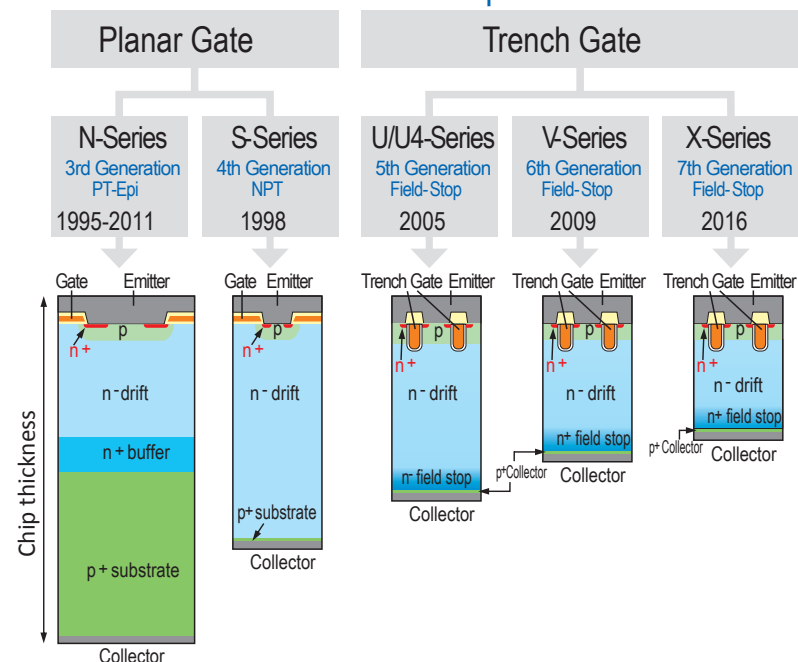
MBR.....: PIM IGBT (Power Integrated Module)

MBP.....: IPM IGBT (Intelligent Power Module)

MSi, MSR: The "S" indicates hybrid module with Si-IGBT & SiC Schottky free wheeling diodes



IGBT development



Number of IGBT-switches (not chips)

About Type Name

The Type Name is not exactly the item code for the ordering process

2. Modules with RB-IGBT (Reverse Blocking IGBT)

4 M Bi3 00 V G - 120 R1 - 50

Voltage class of inverter part

060= 600V

120=1200V

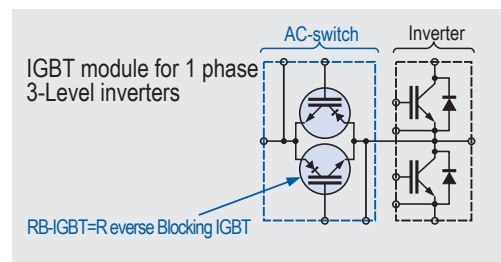
170=1700V

V

R = 600V

R1= 900V

R2=1200V



3. Discrete IGBTs

F G W 3 5 N 6 0 H D

Fuji

IGBT

Package

I_c [A]

N-channel

Series

Voltage: $60=600V \cdot 65=650V \cdot 120=1200V$

4. Super- Junction MOSFETs

F M P 6 0 N 1 3 3 S 2 F D

Fuji MOSFET

N-channel

$R_{DS(on),max}$ [mW]

With built-in FRED Super-Junction MOSFET, S2-Series

V_{DS} : $60= 600V \cdot 65= 650V$

Package

5. SiC Schottky Barrier Diodes

F D C P 2 5 S 6 5

Fuji

SiC-Diode

I_{FAV} [A]

Voltage: $65=650V \cdot 120=1200V$

Configuration C=Dual S=Single

Package



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Edison, NJ 08837 USA
Tel: 732-560-9410
www.americas.fujielectric.com

Power Semiconductors Group

<http://www.fujielectric.com/products/semiconductor/>

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