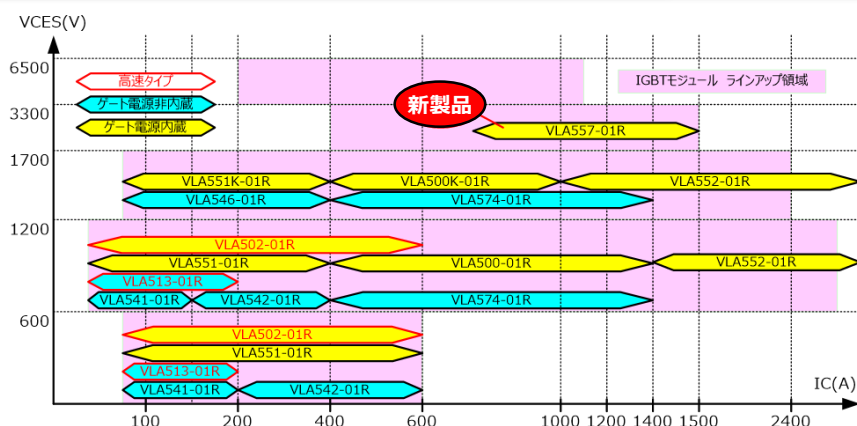


■ 特徴 Feature

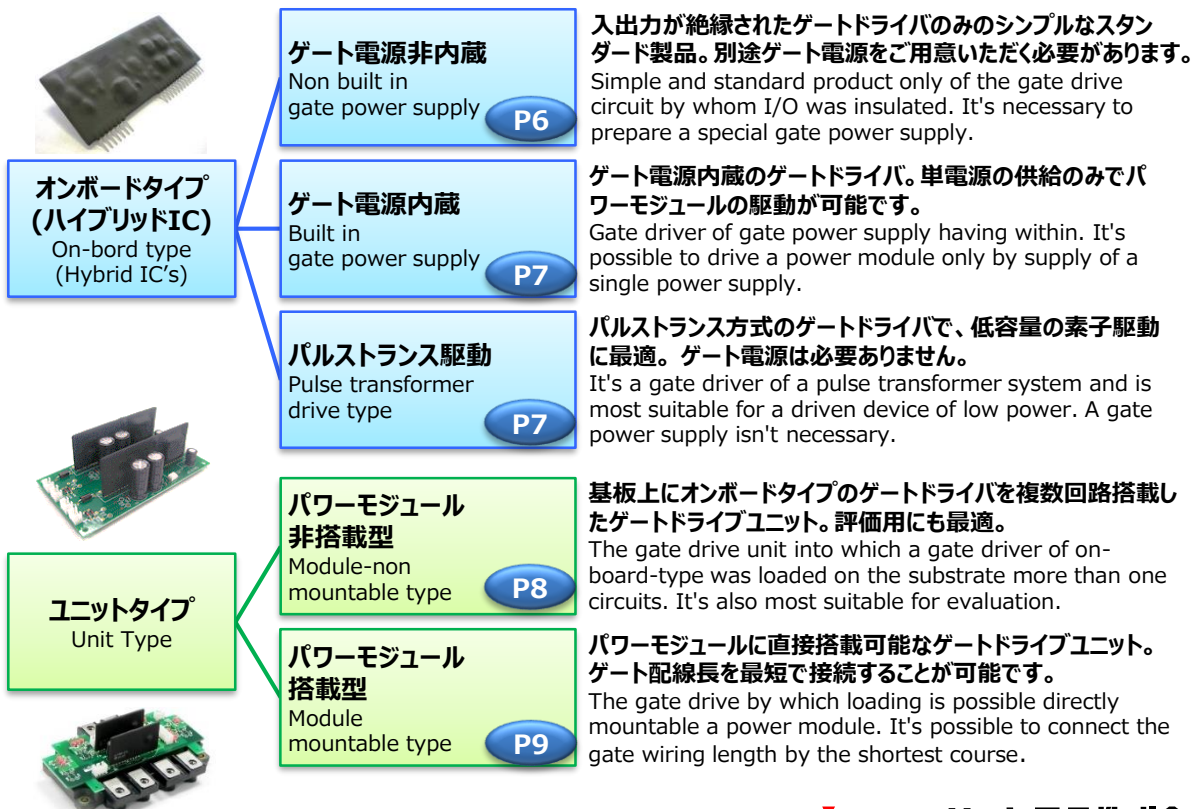
イサハヤ製のゲートドライバは、50Aから3600Aクラスのパワーモジュールに幅広く対応しております。ほとんどの製品には短絡保護回路を内蔵しており、安全にパワー素子の短絡破壊を防ぐことができます。

ISAHAYA gate drivers support the power module for the wide area (50A to 3600A class). It has a short-circuit protection circuit built-in in most products, and short destruction of power device can be stopped safely.

■ 対応領域 (参考) Cover Area Map (Reference)



■ 製品体系図 Products Chart



■ オンボード ゲート電源非内蔵 On-board, Non built in gate power supply



<1> Short current protection, <2> Adjustable fall time at protection, <3> Number of drive circuit

形名 Type Name	用途 Application		機能 Function		絶縁耐圧 Isolation		電源電圧 Power Supply VCC/VEE (V)	出力数 <3>	出力 Output			サイズ Size (H x W x D) (mm)	備考 Note
	IGBTモジュール仕様 IGBT Module Specification	高速 High Speed	短絡保護 <1>	遮断時間調整 <2>	2500 V	4000 V			tPLH (us)	tPHL (us)	IOP (A)		
M57159L-01R	600V,~150A 1200V,~75A	-	○	-	○	-	+15V/-10V	1	1.3	1.3	±1.5	22 x 43 x 11	
VLA531-01R	600V,~200A 1200V,~150A	-	○	-	○	-	+15V/-10V	1	1.3	1.3	±2.5	18 x 42 x 6.5	Simple protection circuit
VLA507-01R	600V,~200A 1200V,~150A	-	-	-	○	-	+15V/-10V	1	0.8	0.9	±3	20 x 30 x 7	
VLA541-11R	600V,~200A 1200V,~150A	-	○	-	○	-	+15V/-10V	1	1	1	±3	26 x 44 x 8	Pin compatible with M57959AL
VLA513-01R	600V,~200A 1200V,~200A	○	-	-	○	-	+15V/-10V	1	0.5	0.5	±5	27 x 48 x 7	fsw≤60kHz
M57962AL-01R-02	600V,~600A 1200V,~400A	-	○	-	○	-	+15V/-10V	1	1	1.3	±5	25 x 51 x 12	
VLA542-11R	600V,~600A 1200V,~400A	-	○	-	○	-	+15V/-10V	1	1	1	±5	26 x 44 x 8	Pin compatible with M57962AL
VLA520-01R	600V,~600A 1200V,~450A	-	○	-	○	-	+15V/-10V	1	0.8	0.7	±5	27 x 45 x 12	Built-in error signal coupler
VLA546-01R	600V,~600A 1200V,~400A 1700V,~400A	-	○	○	-	○	+15V/-10V	1	1	1	±5	26 x 44 x 9	Pin compatible with M57962CL
VLA574-01R	600V,~600A 1200V,~1400A 1700V,~1400A	-	○	○	-	○	+15V/-10V	1	1	1	±15	32 x 51 x 8.5	

■ IPM信号インターフェイス Signal interface modules for IPM

形名 Type Name	機能 Function	電源電圧 (V) Power Supply (V)	サイズ / Size (H x L x W) (mm)	用途 Application	備考 Note
VLA606-01R	信号インターフェイス Signal Interface	1次側 : 5V / 2次側 : 15V Primary side:5V / Secondary side:15V	31 x 86 x 12.5	IPM駆動 IPM drive	Viso = AC2500V
VLA606A-01R	信号インターフェイス Signal Interface	1次側 : 5V / 2次側 : 15V Primary side:5V / Secondary side:15V	26 x 83 x 10	IPM駆動 IPM drive	Viso = AC2500V

(注意) 仕様についてはホームページ掲載のデータシートをご覧ください。 (Note) Please see a Data Sheet of home page carrying about the specification.

■ オンボード ゲート電源内蔵 On-board, Built in gate power supply type



<1> Short current protection, <2> Adjustable fall time at protection, <3> Number of drive circuit

形名 Type Name	用途 Application		機能 Function		絶縁耐圧 Isolation		電源 電圧 Power Supply (V)	出力 Output				サイズ Size (H x W x D) (mm)	備考 Note
	IGBTモジュール仕様 IGBT Module Specification	高速 High Speed	短絡 保護 <1>	遮断 時間 調整 <2>	2500 V	4000 V		出力 数 <3>	tPLH (us)	tPHL (us)	IOP (A)		
VLA500-01R	600V,~600A 1200V,~1400A	-	○	○	○	-	VD=+15V	1	1	1.3	±12	33 x 83 x 15.5	
VLA500-02R	600V,~600A 1200V,~1400A	-	○	○	○	-	VD=+24V	1	1	1.3	±12	33 x 83 x 15.5	
VLA500K-01R	1200V,~1400A 1700V,~1000A	-	○	○	-	○	VD=+15V	1	1	1.3	±12	33 x 83 x 17	
VLA502-01R	600V,~600A 1200V,~600A	○	○	○	○	-	VD=+15V	1	0.65	0.65	±12	33 x 83 x 15.5	fsw≤60kHz
VLA551-01R	600V,~600A 1200V,~400A	-	○	○	○	-	VD=+15V	1	1	1	±5	39 x 63 x 15.5	
VLA551K-01R	1200V,~400A 1700V,~400A	-	○	○	-	○	VD=+15V	1	1	1	±5	39 x 63 x 15.5	
VLA552-01R	1200V,~3600A 1700V,~3600A	-	○	○	-	○	VD=+15V	1	1.5	1.5	±24	42 x 88 x 17	
VLA554-01R	1200V,~3600A 1700V,~3600A	-	○	○	-	○	VD=+15V	1	1	1	±24	42 x 88 x 17	Opto-coupler less for gate signal
VLA567-11R	600V,~600A 1200V,~600A	-	○	○	○	-	VD=+15V	2	0.8	0.8	±8	17 x 62 x 48	
VLA567-12R	600V,~600A 1200V,~600A	-	○	○	○	-	VD=+24V	2	0.8	0.8	±8	17 x 62 x 48	
VLA585-01R	1200V,~1400A 1700V,~1400A	○	○	○	-	○	VD=+15V	2	0.5	0.4	±20	19 x 73 x 53	fsw≤50kHz Insulate signal with pulse transformer
New VLA591-01R	1200V,~1400A 1700V,~1400A	○	○	○	-	○	VD=+15V	2	0.4	0.3	±20	19 x 68 x 53	fsw≤50kHz Insulate signal with Opto-coupler
New VLA597-01R	1200V,~800A 1700V,~600A	○	○	-	-	○	VD=+15V	2	TBD	TBD	±10	18 x 62 x 47	

■ オンボード パルス変圧器駆動方式 On-board, Pulse transformer drive type

<1> Short current protection, <2> Adjustable fall time at protection, <3> Number of drive circuit

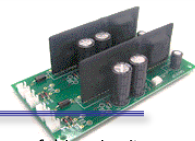
形名 Type Name	用途 Application		機能 Function		絶縁耐圧 Isolation		電源 電圧 Power Supply (V)	出力 Output				サイズ Size (H x W x D) (mm)	備考 Note
	IGBTモジュール 仕様 IGBT Module Specification	高速 High Speed	短絡 保護 <1>	遮断 時間 調整 <2>	2500 V	4000 V		出力 数 <3>	tPLH (us)	tPHL (us)	IOP (A)		
M57174L-03	Low power IGBT (less than 50A)	-	-	-	○	-	VCC1=+15V VCC2=+5V	3	2.2	2	±0.6	45 x 61 x 13	fsw≤3kHz
VLA526A-06AR	Low power IGBT (less than 50A)	-	-	-	○	-	VCC1=+15V VCC2=+5V	6	2.2/ 0.7 <4>	1.7/ 0.9 <4>	+0.6 -0.2	41.5 x 88 x 13	fsw≤3kHz

<4>... High-side / Low-side

(注意) 仕様についてはホームページ掲載のデータシートをご覧ください。 (Note) Please see a Data Sheet of home page carrying about the specification.

ゲートドライバ Gate Drivers

■ ユニット モジュール非搭載型 Unit, Module-non mountable type



<1> Short current protection, <2> Adjustable fall time at protection, <3> Number of drive circuit

形名 Type Name	用途 Application		機能 Function		絶縁耐圧 Isolation		電源 電圧 Power Supply (V)	出力 Output				サイズ Size (W x D x T) (mm)	備考 Note
	IGBTモジュール 仕様 IGBT Module Specification	高速 High Speed	短絡 保護 <1>	遮断 時間 調整 <2>	2500 V	4000 V		出力 数 <3>	tPLH (us)	tPHL (us)	IOP (A)		
GAU205S-15252	600V,~200A 1200V,~200A	○	-	-	○	-	VD=+15V	2	0.5	0.5	±5	65 x 95 x 34	fsw≤60kHz
GAU205P-15252A	600V,~600A 1200V,~400A	-	○	-	○	-	VD=+15V	2	1	1	±5	65 x 95 x 34	
GAU405P-15252	600V,~600A 1200V,~400A	-	○	-	○	-	VD=+15V	4	1	1	±5	120x100 x 44	
GAU605P-15252	600V,~600A 1200V,~400A	-	○	-	○	-	VD=+15V	6	1	1	±5	188x100 x 44	
GAU208P-15252	600V,~600A 1200V,~600A	-	○	○	○	-	VD=+15V	2	1	1	±8	73 x 110 x 23	
GAU212S-15255	600V,~600A 1200V,~1400A	○	-	-	○	-	VD=+15V	2	0.65	0.65	±12	60 x 120 x 40	fsw≤60kHz
GAU212P-15255	600V,~600A 1200V,~1400A	-	○	○	○	-	VD=+15V	2	1	1.3	±12	65 x 120 x 40	
GAU205P-15402	1200V,~400A 1700V,~400A	-	○	○	-	○	VD=+15V	2	1	1	±5	74 x 100 x 40	
GAU215P-15405	1200V,~1400A 1700V,~1400A	-	○	○	○	-	VD=+15V	2	1	1	±15	77 x 100 x 38	
New VLA557-01R	3300V,~1500A	-	○	○	-	6000 V	VD=15 V	1	0.8	0.5	±24	20 x 150 x 83	
New VLA557-03R	3300V,~600A	-	○	○	-	6000 V	VD=15 V	1	0.8	0.5	±24	20 x 150 x 83	For LV100
New VLA557-11R	1700V,~2400A	-	○	○	-	○	VD=15 V	1	0.8	0.5	±24	20 x 150 x 83	
UD VLB505-01R	3300V,750A	-	○	○	-	6000 V	VD=15 V	1	TBD	TBD	±36	14 x 150 x 83	For FMF750DC-66A

セレクトションマップ Selection Map

IGBT VCES	Output IC	Gate driver unit	Gate driver DC/DC convertor	Application example	
~1200V	200A	GAU205S-15252	VLA513-01R (x2) VLA106-15242 (x2)	Half bridge	Full bridge
	200A	GAU205P-15252A	VLA542-01R (x2) VLA106-15242 (x2)		
	400A	GAU405P-15252	VLA551-01R (x4) (Built in DC/DC type)	3-phase inverter	3-level inverter
	400A	GAU605P-15252	VLA551-01R (x6) (Built in DC/DC type)		
	600A	GAU208P-15252	VLA567-01R (x2) (Built in DC/DC type)	3-phase inverter	3-level inverter
	600A	GAU212S-15255	VLA502-01R (x2) (Built in DC/DC type)		
1700V	1400A	GAU212P-15255	VLA500-01R (x2) (Built in DC/DC type)	3-phase inverter	3-level inverter
	400A	GAU205P-15402	VLA551K-01R (x2) (Built in DC/DC type)		
	1400A	GAU215P-15405	VLA574-01R (x2) VLA134-15255 (x2)	3-phase inverter	3-level inverter

(注意) 仕様についてはホームページ掲載のデータシートをご覧ください。 (Note) Please see a Data Sheet of home page carrying about the specification.

■ ユニット パワーモジュール搭載型

Unit, Power Module mountable type



<1> Short current protection, <2> Adjustable fall time at protection, <3> Number of drive circuit

形名 Type Name	用途 Application		機能 Function		絶縁耐圧 Isolation		電源 電圧 Power Supply (V)	出力 Output				サイズ Size (W x D x T) (mm)	備考 Note
	IGBTモジュール 仕様 IGBT Module Specification	高速 High Speed	短絡 保護 (1)	遮断 時間 調整 (2)	2500 V	4000 V		出力 数 (3)	tPLH (us)	tPHL (us)	IOP (A)		
VLA536-01R	For Mitsubishi NX series 600V, 400A 1200V, 450A	－	○	－	○	－	VD= +15V	2	0.8	0.7	±5	30.6 x 101 x 64	Built-in VLA520-01R
VLA553-01R	For Mitsubishi CM2500DY-24S	－	○	－	－	○	VD= +15V	2	1	1	±24	44.6 x 143 x 110	Built-in VLA552-01R
VLA553-02R	For Mitsubishi CM1800DY-34S	－	○	－	－	○	VD= +15V	2	1	1	±24	44.6 x 143 x 110	Built-in VLA552-01R
VLA555-01R	For Mitsubishi CM2500DY-24S	－	○	－	－	○	VD= +15V	2	1	1	±24	44.6 x 143 x 110	Built-in VLA554-01R Fiber-optic interface
VLA555-02R	For Mitsubishi CM1800DY-34S	－	○	－	－	○	VD= +15V	2	1	1	±24	44.6 x 143 x 110	Built-in VLA554-01R Fiber-optic interface
VLA559-01R	For Prime PACK VCES:1200V series	－	○	－	－	○	VD= +15V	2	1	1	±24	44.6 x 149 x 95	Built-in VLA552-01R
VLA559-02R	For Prime PACK VCES:1700V series	－	○	－	－	○	VD= +15V	2	1	1	±24	44.6 x 149 x 95	Built-in VLA552-01R
VLA586-01R	For Mitsubishi FMF800DX-24A (SiC Module)	－	○	－	○	－	VCC= +16V, VEE= -13V	2	1	0.8	±7	128 x 65.5 x 30	Built-in VLA561-01R
VLA592-01R	For Econo Dual 1200V,450A	－	○	－	○	－	VD= +15V	2	0.8	0.7	±5	30.6 x 101 x 64	Built-in VLA520-01R
VLA593-11R	For Prime PACK 1700V,~1400A	○	○	○	－	○	VD= +15V	2	0.4	0.3	±20	24.6 X 149 X 94	Built-in VLA591-01R
VLA598-01R	For Econo Dual 1200V,800A	○	○	－	－	○	VD= +15V	2	TBD	TBD	±10	31.4 X 101 X 64	Built-in VLA597-01R
VLA598-11R	For Econo Dual 1700V,600A	○	○	－	－	○	VD= +15V	2	TBD	TBD	±10	31.4 X 101 X 64	Built-in VLA597-01R

■ ユニット IPM搭載型

Unit, Intelligent Power Module mountable type

形名 Type Name	機能 Function	電源電圧 (V) Power Supply (V)	サイズ / Size (H x L x W)	用途 Application	備考 Note
VLA127-02R	制御電源 + カプラインタフェース Power supply for drive + Photocoupler signal interface	制御用: 15V / 信号用: 5V For drive:15V / For signal:5V	35 x 90 x 63 (mm)	IPM駆動 IPM drive	VLA606A-01R VLA128-24153QR
VLA127-03R	制御電源 + カプラインタフェース Power supply for drive + Photocoupler signal interface	制御用: 15V / 信号用: 5V For drive:15V / For signal:5V	35 x 90 x 63 (mm)	IPM駆動 IPM drive	VLA606A-01R VLA128-24153QR

(注意) 仕様についてはホームページ掲載のデータシートをご覧ください。(Note) Please see a Data Sheet of home page carrying about the specification.

■ 三菱IGBTモジュール対応表 Guide table for MITSUBISHI IGBT modules

Character symbol ... (D) Gate Driver, (P) Gate Power supply,
(H) Built in gate power supply type Gate Driver

<For T series NX type> T series : 7th generation Mitsubishi IGBT modules								
VCES\IC	100A	150A	200A	225A	300A	450A	600A	1000A
650V	(D)VLA541 (P)VLA106 (H)VLA567			No IGBT	(D)VLA541 (P)VLA106 (H)VLA567	(D)VLA542, VLA546 (P)VLA106 (H)VLA567		No IGBT
1200V	(D)VLA541, (P)VLA106 (H)VLA567		(D)VLA542, VLA546, (P)VLA106 (H)VLA567,VLA597			(H)VLA567, VLA591, VLA597		(H)VLA500 (H)VLA591
1700V	No IGBT			(D)VLA546, (P)VLA124 (H)VLA551K,VLA597		(H)VLA500K, VLA591, VLA597		No IGBT

<For T series std. type> T series : 7th generation Mitsubishi IGBT modules							
IC \ VCES	100A	150A	200A	300A	400A	450A	600A
650V	(D)VLA541 (P)VLA106 (H)VLA567				(D)VLA542, VLA546 (P)VLA106 (H)VLA567	No IGBT	(D)VLA542, VLA546 (P)VLA106 (H)VLA567
1200V	(D)VLA541 (P)VLA106 (H)VLA567,VLA597		(D)VLA542, VLA546 (P)VLA106 (H)VLA567,VLA597		No IGBT	(D)VLA542, VLA546 (P)VLA106 (H)VLA567,VLA597	(H)VLA567 (H)VLA591,VLA597
1700V	(D)VLA546, (P)VLA124 (H)VLA551K, VLA591,VLA597					No IGBT	

<For NF series> NF series : 5th generation Mitsubishi IGBT modules										
VCES	IC	50A	75A	100A	150A	200A	300A	400A	600A	1400A
600V		No IGBT	(D)M57159L (P)VLA106		(D)VLA541 (P)VLA106 (H)VLA567		(D)VLA542 / (D)VLA546 (P)VLA106 (H)VLA567			No IGBT
1200V		(D)M57159L (P)VLA106		(D)VLA541 (P)VLA106 (H)VLA567, VLA597		(D)VLA542, VLA546 (P)VLA106 (H)VLA567, VLA597			(H)VLA500, VLA591	

<For A series> A series : 5th generation Mitsubishi IGBT modules								
VCES\IC	75A	100A	150A	200A	300A	400A	600A	
1200V	No IGBT	(D)VLA541, (P)VLA106 (H)VLA567,VLA597			(D)VLA542, VLA546, (P)VLA106 (H)VLA567,VLA597			
1700V	(D)VLA546, (P)VLA124 (H)VLA551K, VLA591,VLA597						No IGBT	

<For 6 th Generation series>														
IC VCES	35A	50A	75A	100A	150A	200A	300A	400A	450A	600A	1000A 1100A	1500A	1800A	2500A
1200V	(D)M57159L (P)VLA106					(D)VLA541 (P)VLA106 (H)VLA567		(D)VLA542, VLA546 (P)VLA106 (H)VLA567,VLA597			(H)VLA500		(H)VLA552	
1700V	No IGBT	(D)VLA546, (P)VLA124 (H)VLA551K,VLA597							(H)VLA500K (H)VLA591			(H)VLA552		No IGBT

<For NFH series>		NFH series : MITSUBISHI high frequency switching IGBT modules ~ Up to 60kHz use ~					
VCES	IC	100A	150A	200A	300A	400A	600A
600V		(D)VLA513			(H)VLA502		No Driver
1200V		(D)VLA513			(H)VLA502		

Note) 600V,100A Class → CM100DUS-12F / 600V,150A Class → CM150DUS-12F

<For 3-Level IGBT CM400ST-24S1>		
Power Module	Ratings	Driver unit (Built in core driver)
CM400ST-24S1	1200V / 400A	(H)VLA578-01R ((D)VLA552-01R)

<For Full-SiC modules>		
Power Module	Ratings	Driver unit or Hic
FMF400BX-24A	1200V / 400A	(D)VLA513 (Hic type) (P)VLA106
FMF800DX-24A	1200V / 800A	(D)VLA586-01R (Unit type) (P)VLA134

■ 富士電機 IGBTモジュール対応表 Guide table for FUJI IGBT modules

Character symbol ... (D) Gate Driver, (P) Gate Power supply,
(H) Built in gate power supply type Gate Driver

< For V series >													
IC VCES	50A	75A	100A	150A	200A	225A	300A	400A	450A	550A	600A	800A	900A
600V	(D) M57159L (P) VLA106		(D) VLA541 (P) VLA106			NO IGBT	(D) VLA542 (P) VLA106 (H) VLA551		NO IGBT		(D) VLA574 (H) VLA500		NO IGBT
1200V	(D) M57159L (P) VLA106	(D) VLA541 (P) VLA106			(D) VLA542 (P) VLA106 (H) VLA551			(D) VLA574 (H) VLA500					
1700V	NO IGBT						(D)VLA546 (P)VLA124 (H)VLA551K	NO IGBT		(D) VLA574 (H) VLA500K		NO IGBT	

IC VCES	1000A	1200A	1400A	1600A
600V	NO IGBT			
1200V	NO IGBT	(H) VLA552		
1700V	(H) VLA552			

■ インフィニオンIGBTモジュール対応表 Guide table for Infineon IGBT modules

Character symbol ... (D) Gate Driver, (P) Gate Power supply,
(H) Built in gate power supply type Gate Driver

< For Infineon IGBT3 >														For example : FF300R12KE3 ➔ 300A	
VCES	IC	35A	40A	50A	75A	100A	150A	200A	225A	300A	400A	450A	600A	800A	
600V 650V		NO IGBT		(D) M57159L (P) VLA106		(D) VLA541 (P) VLA106		(D) VLA542 (P) VLA106 (H) VLA551				(D)VLA574 (H)VLA500		NO IGBT	
1200V		(D) M57159L (P) VLA106				(D) VLA541 (P) VLA106			(D) VLA542 (P) VLA106 (H) VLA551			(D) VLA574 (H) VLA500			
1600V 1700V		NO IGBT		(D) VLA546 (P) VLA124 (H) VLA551K								(D) VLA574 (H) VLA500K			
VCES	IC	1200A			1600A			1800A			2400A			3600A	
600V 650V		NO IGBT													
1200V		(D) VLA574 (H) VLA500			(H) VLA552			NO IGBT			(H) VLA552				
1600V 1700V		(H) VLA552													

< For Infineon IGBT3 Fast >											
VCES	IC	35A	40A	50A	75A	100A	150A	200A	225A	300A	400A
1200V		(D) M57159L (P) VLA106				(D) VLA541 (P) VLA106			NO IGBT	(D) VLA542 (P) VLA106 (H) VLA551	

< For Infineon IGBT4 >														
VCES	IC	35A	50A	75A	100A	150A	200A	225A	300A	400A	450A	600A	650A	800A
600V 650V	NO IGBT	(D) M57159L (P) VLA106		(D) VLA541 (P) VLA106		(D) VLA542, (P) VLA106 (H) VLA551				NO IGBT				
1200V		(D) M57159L (P) VLA106			(D) VLA541 (P) VLA106			(D) VLA542, (P) VLA106 (H) VLA551				NO IGBT		
1600V 1700V		NO IGBT			(D) VLA546, (P) VLA124 (H) VLA551K						(D) VLA574 (H) VLA500K			

VCES	IC	900A	1000A	1200A	1400A	1600A	1800A	2400A	3600A
600V 650V		NO IGBT							
1200V		(D)VLA574 (H)VLA500	NO IGBT		(D) VLA574 (H) VLA500	(H) VLA552			
1600V 1700V		NO IGBT		(D) VLA574 (H) VLA500K	(H) VLA552				

< For infineon IGBT4 Fast >							
VCES\IC	50A	75A	100A	150A	200A	300A	450A
1200V	(D) M57159L (P) VLA106			(D) VLA541 (P) VLA106		(D) VLA542, (P) VLA106 (H) VLA551	