

# AgileSwitch™ Plug and Play IGBT Drivers.

## Perfectly matched for Fuji Switches.

AgileSwitch drivers are ideally suited to work with Fuji high voltage IGBT modules in demanding applications.

They deliver more power than competitive gate drivers, eliminating the need for multiple gate drivers in applications requiring parallel IGBTs.

Only AgileSwitch drivers monitor up to 8 distinct fault conditions (including thermal, under voltage, overshoot voltage and desaturation) and can provide for fault lockout functionality to ensure full system reliability.

AgileSwitch power switch drivers are offered in industry standard form factors and interfacing.

Applications include:

- Solar/PV Inverters
- Wind Turbines
- Motor Drives
- Smart Grid
- HEV/EV
- High Speed Trains
- UPS



AgileSwitch plug-and-play drivers are packaged as complete offerings and can be directly connected to IGBT modules for instant use.

### AgileSwitch Driver Capabilities (Varies by model)

Isolation Voltage	Up to 3750 Volts
Output Power Per Channel	1 to 5 Watts
Gate Drive Current	10 to 30 Amps
Maximum Frequency	30 KHz
Gate Drive Voltage Hi	+15 Volts
Gate Drive Voltage Lo	-10 Volts
dV/dT Minimum	25 KV/us
Fault Condition Lines	Up to 8



Up to 8 Distinct Fault Conditions

Flexible Fault Management

DeSAT Protection

On-Board DC/DC Converter

Multi-Level Capability

Low Profile Available

AgileSwitch offers next generation gate drivers for fast, sure control of IGBTs. By leveraging high speed FET driver technology and magnetics expertise, and capturing up to 8 distinct fault conditions, AgileSwitch drivers provide maximum switching performance and reliability for Fuji switches.

Look for higher peak drive current capability, higher wattage ratings, higher voltage ratings, and superior dV/dT immunity - all without breaking the budget.

AgileSwitch products provide lower idle power with efficient gate charge delivery to compliment the cleaner power switching of IGBTs. These requirements are especially important in renewable energy applications (e.g. solar inverters, wind turbines, hybrid electric vehicles, motor drives, etc.)

Compatible with IGBT switch modules  
by Fuji Electric Systems Co. 

Contact us at: [info@AgileSwitch.com](mailto:info@AgileSwitch.com)  
or call us at: 484-483-3256  
[www.AgileSwitch.com](http://www.AgileSwitch.com)



Power Electronics for Renewable Energy

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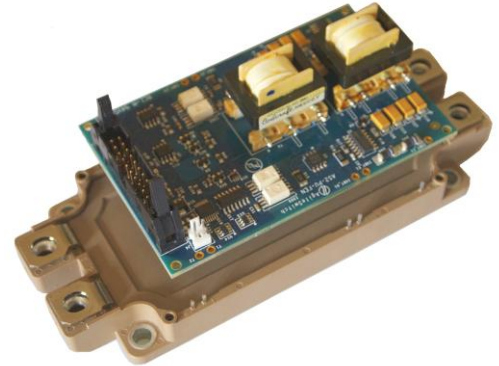
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# AgileSwitch™ Drivers for Fuji EconoDual™ Switches

## Key Parameter Overview: 1200v and 1700v Econodual™ Versions

Parameter	Min	Typ.	Max	Unit
Nominal supply voltage	14.5	15	17.5	V
Output power per channel			2.0	W
Gate voltage	-9	+15/ -10	+16	V
Peak output (gate) current	-10		+12	A
Switching frequency $f_{IN}$	0		30	kHz
Minimum ON or OFF period	500			ns
Turn-on and Turn-off delay			500	ns
Dielectric test voltage	3000			VAC
dv/dt immunity, input to output			25	kV/us
Operating temperature	-20		+85 (+125 opt)	°C
Creepage distance primary-secondary	7			mm



### Key Switch Benefits

- Dual channel driver
- Isolated DC/DC converter
- Regulated gate-emitter voltage
- Separate gate current paths (on/off)
- Direct or half-bridge mode
- Power supply under-voltage lockout
- Reliable, long service life
- Up to 8 individual fault signals (Opt.)
- IGBT and ambient thermal fault detection (Opt.)
- 14 pin (SemiKron compatible) and 20 pin (Concept compatible) connections available
- Plug-and-play solution
- Interface for 3.3V or 5V logic levels
- +15V/-10V gate drive voltage
- Peak gate current +12A/-10A
- Suitable for IGBTs up to 1700V
- IGBT short-circuit protection
- 2 x 2W or 2X1W output power
- Easy mounting directly onto the IGBT
- Fault lockout functionality (Opt.)
- Desaturation (Over current) detection

Dimensions (+/- 1mm): L:100mm (3.94")X W:62mm (2.44")X H:25.5mm (1.0")

### Fuji EconoDual™ IGBT Driver Compatibility

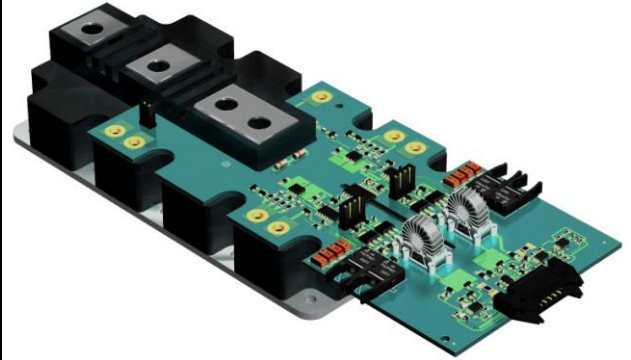
IGBT Voltage	IGBT Current	Driver Max. Freq.	Watts/ Channel	Fuji Part Number	AgileSwitch Part Number – 14 Pin (SemiKron Compatible)	AgileSwitch Part Number – 20 Pin (Concept Compatible)
1200V	225A	10Khz	1	2MBI225U4N-120-50	AS2-10D1ANPN-FE225U4N12	AS2-10D1ANPU-FE225U4N12
1200V	225A	10Khz	1	2MBI225VN-120-50	AS2-10D1ANPN-FE225VN12	AS2-10D1ANPU-FE225VN12
1200V	300A	8Khz	1	2MBI300U4N-120-50	AS2-10D1ANPN-FE300U4N12	AS2-10D1ANPU-FE300U4N12
1200V	300A	8Khz	1	2MBI300VN-120-50	AS2-10D1ANPN-FE300VN12	AS2-10D1ANPU-FE300VN12
1200V	450A	9Khz	2	2MBI450U4N-120-50	AS2-20D1ANPN-FE450U4N12	AS2-20D1ANPU-FE450U4N12
1200V	450A	9Khz	2	2MBI450VN-120-50	AS2-20D1ANPN-FE450VN12	AS2-20D1ANPU-FE450VN12
1200V	600A	6Khz	1	2MBI600VN-120-50	AS2-10D1ANPN-FE600VN12	AS2-10D1ANPU-FE600VN12
1700V	225A	10Khz	1	2MBI225U4N-170-50	AS2-10D1ANPN-FE225U4N17	AS2-10D1ANPU-FE225U4N17
1700V	300A	8Khz	1	2MBI300U4N-170-50	AS2-10D1ANPN-FE300U4N17	AS2-10D1ANPU-FE300U4N17
1700V	450A	9Khz	2	2MBI450U4N-170-50	AS2-20D1ANPN-FE450U4N17	AS2-20D1ANPU-FE450U4N17

**PrimePACK™ and HPM™ drivers are also available**

# AgileSwitch™ Drivers for Fuji PrimePACK™ Switches

## Key Parameter Overview: 1200v and 1700v PrimePACK™ Fiber Versions

Parameter	Min	Typ.	Max	Unit
Nominal supply voltage	14.3	15	17.5	V
Output power per channel			5.0	W
Gate voltage	-9	+15/ -10	+16	V
Peak output (gate) current	-10		+12	A
Switching frequency $f_{IN}$	0		25	kHz
Minimum ON or OFF period	450	500		ns
Turn-on and Turn-off delay		250	User Defined	ns
Dielectric test voltage	3000			VAC
dv/dt immunity, input to output			25	kV/us
Operating temperature	-20		+85 (+125 opt)	°C
Creepage distance primary-secondary	12.8			mm
Creepage Secondary to Secondary-air gap	8.5			mm



## Key Switch Benefits

- Dual channel driver
- Isolated DC/DC converter
- Regulated gate-emitter voltage
- Separate gate current paths (on/off)
- Power supply under-voltage lockout
- Reliable, long service life
- Up to 8 individual fault signals (Opt.)
- IGBT and ambient thermal fault detection (Opt.)
- 10 pin power, dual 2 channel fiber I/O
- 2 channel input, independent or combined fault output
- Plug-and-play solution
- Desaturation (Over current) detection
- +15V/-12V gate drive voltage
- Peak gate current +12A/-10A
- Suitable for IGBTs up to 1700V
- IGBT short-circuit protection
- 2 x 5W output power
- Easy mounting directly onto the IGBT
- Cross latch (Opt.)

## Fuji PrimePACK™ IGBT Driver Compatibility

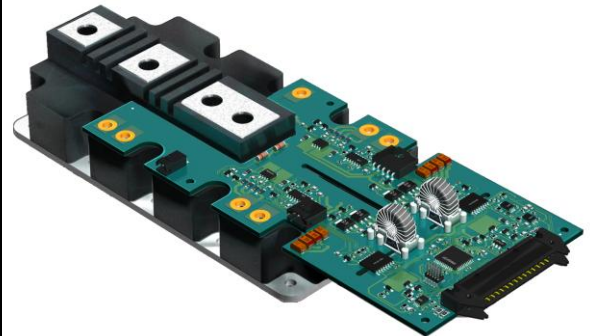
IGBT Voltage	IGBT Current	Est. Driver Max. Freq.	Watts/ Channel	Fuji Part Number	AgileSwitch Part Number
1200V	600A	11Khz	5	2MBI600VXA-120E-50	AS2-50D1ANTJZ-FE600VXA12E-M
1200V	900A	7Khz	5	2MBI900VXA-120E-50	AS2-50D1ANTJZ-FE900VXA12E-M
1200V	900A	7Khz	5	2MBI900VXA-120P-50	AS2-50D1ANTJZ-FE900VXA12P-M
1200V	1400A	4.3Khz	5	2MBI1400VXB-120P-50	AS2-50D1ANTJZ-FE1400VXB12P-M
1700V	650A	9Khz	5	2MBI650VXA-170E-50	AS2-50D1ANTJZ-FE650VXA17E-M
1700V	1000A	6Khz	5	2MBI1000VXB-170E-50	AS2-50D1ANTJZ-FE1000VXB17E-M
1700V	1400A	4Khz	5	2MBI1400VXB-170E-50	AS2-50D1ANTJZ-FE1400VXB17E-M
1700V	1400A	4Khz	5	2MBI1400VXB-170P-50	AS2-50D1ANTJZ-FE1400VXB17P-M

**EconoDual™ and HPM™ drivers are also available**

# AgileSwitch™ Drivers for Fuji PrimePACK™ Switches

## Key Parameter Overview: 1200v and 1700v PrimePACK™ Electrical Versions

Parameter	Min	Typ.	Max	Unit
Nominal supply voltage	14.3	15	17.5	V
Output power per channel			5.0	W
Gate voltage	-9	+15/ -10	+16	V
Peak output (gate) current	-10		+12	A
Switching frequency $f_{IN}$	0		25	kHz
Minimum ON or OFF period	450	500		ns
Turn-on and Turn-off delay		250	User Defined	ns
Dielectric test voltage	3000			VAC
dv/dt immunity, input to output			25	kV/us
Operating temperature	-20		+85 (+125 opt)	°C
Creepage distance primary-secondary	8.0			mm



### Key Switch Benefits

- Dual channel driver
- Isolated DC/DC converter
- Regulated gate-emitter voltage
- Separate gate current paths (on/off)
- Power supply under-voltage lockout
- Reliable, long service life
- 20 Pin connection (Concept Compatible)
- Desaturation (Over Current) detection
- IGBT and ambient thermal fault detection (Opt.)
- Cross latch (Opt.)
- Plug-and-play solution
- Desaturation (Over current) detection
- +15V/-12V gate drive voltage
- Peak gate current +12A/-10A
- Suitable for IGBTs up to 1700V
- IGBT short-circuit protection
- 2 x 5W output power
- Easy mounting directly onto the IGBT
- Up to 8 individual fault signals (Opt.)

### Fuji PrimePACK™ IGBT Driver Compatibility

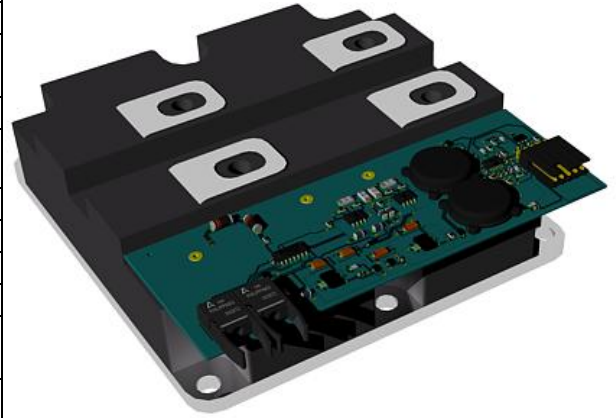
IGBT Voltage	IGBT Current	Est. Driver Max. Freq.	Watts/ Channel	Fuji Part Number	AgileSwitch Part Number – 20 Pin (Concept Compatible)	AgileSwitch Part Number – 30 Pin
1200V	600A	11Khz	5	2MBI600VXA-120E-50	AS2-50D1ANTU-FE600VXA12E-M	AS2-50D1ANTX-FE600VXA12E-M
1200V	900A	7Khz	5	2MBI900VXA-120E-50	AS2-50D1ANTU-FE900VXA12E-M	AS2-50D1ANTX-FE900VXA12E-M
1200V	900A	7Khz	5	2MBI900VXA-120P-50	AS2-50D1ANTU-FE900VXA12P-M	AS2-50D1ANTX-FE900VXA12P-M
1200V	1400A	4.3Khz	5	2MBI1400VXB-120P-50	AS2-50D1ANTU-FE1400VXB12P-M	AS2-50D1ANTX-FE1400VXB12P-M
1700V	650A	9Khz	5	2MBI650VXA-170E-50	AS2-50D1ANTU-FE650VXA17E-M	AS2-50D1ANTX-FE650VXA17E-M
1700V	1000A	6Khz	5	2MBI1000VXB-170E-50	AS2-50D1ANTU-FE1000VXB17E-M	AS2-50D1ANTX-FE1000VXB17E-M
1700V	1400A	4Khz	5	2MBI1400VXB-170E-50	AS2-50D1ANTU-FE1400VXB17E-M	AS2-50D1ANTX-FE1400VXB17E-M
1700V	1400A	4Khz	5	2MBI1400VXB-170P-50	AS2-50D1ANTU-FE1400VXB17P-M	AS2-50D1ANTX-FE1400VXB17P-M

**EconoDual™ and HPM™ drivers are also available**

# AgileSwitch™ Drivers for Fuji HPM™ Switches

## Key Parameter Overview: 1200v and 1700v HPM™ Versions

Parameter	Min	Typ.	Max	Unit
Nominal supply voltage	14.5	15	17.5	V
Output power per channel			5.0	W
Gate voltage	-9	+15/ -10	+16	V
Peak output (gate) current	-10		+12	A
Switching frequency $f_{IN}$	0		30	kHz
Minimum ON or OFF period	500			ns
Turn-on and Turn-off delay			500	ns
Dielectric test voltage	3000			VAC
dv/dt immunity, input to output			25	kV/us
Operating temperature	-20		+85 (+125 opt)	°C
Creepage distance primary-secondary	12.6			mm



## Key Switch Benefits

- Single channel driver
- Isolated DC/DC converter
- Regulated gate-emitter voltage
- Separate gate current paths (on/off)
- Power supply under-voltage lockout
- Reliable, long service life
- Up to 3 individual fault signals (Opt.)
- Ambient thermal fault detection (Opt.)
- Easy mounting directly onto the IGBT
- Plug-and-play solution
- +15V/-10V gate drive voltage
- Peak gate current +25A/-20A
- Suitable for IGBTs up to 1700V
- IGBT short-circuit protection
- 1 x 5W output power
- 5 pin power, dual channel fiber I/O
- Desaturation (Over current) detection

Dimensions (+/- 1mm): L:130mm (5.12")X W:50mm (2.0")X H:10.5mm (0.43")

## Fuji HPM™ IGBT Driver Compatibility

IGBT Voltage	IGBT Current	Driver Max. Freq.	Watts/ Channel	Fuji Part Number	AgileSwitch Part Number
1200V	1200A	12Khz	5	1MBI1200U4C-120	AS1-30D1ANTZ-FE1200U4C12
1200V	1600A	9Khz	5	1MBI1600U4C-120	AS1-30D1ANTZ-FE1600U4C12
1200V	2400A	6Khz	5	1MBI2400U4D-120	AS1-30D1ANTZ-FE2400U4D12
1200V	3600A	5Khz	5	1MBI3600U4D-120	AS1-30D1ANTZ-FE3600U4D12
1700V	1200A	15Khz	5	1MBI1200U4C-170	AS1-30D1ANTZ-FE1200U4C17
1700V	1600A	10Khz	5	1MBI1600U4C-170	AS1-30D1ANTZ-FE1600U4C17
1700V	2400A	7.5Khz	5	1MBI2400U4D-170	AS1-30D1ANTZ-FE2400U4D17
1700V	3600A	5Khz	5	1MBI3600U4D-170	AS1-30D1ANTZ-FE3600U4D17

**PrimePACK™ and EconoDual™ drivers are also available**