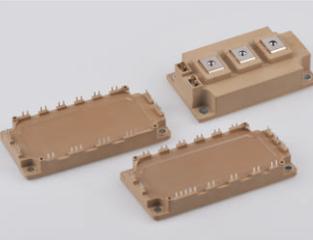
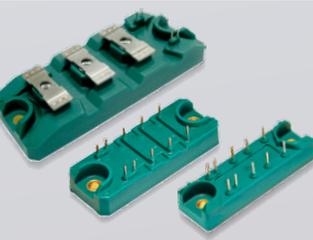
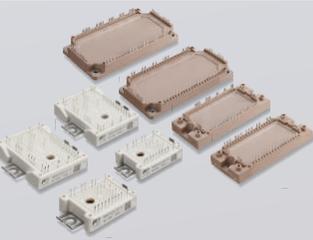
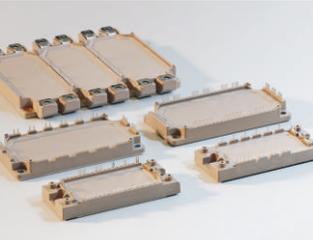
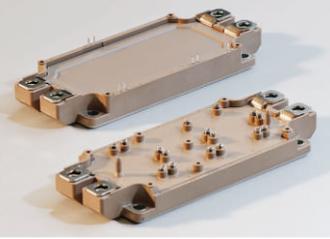
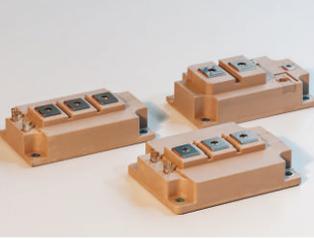
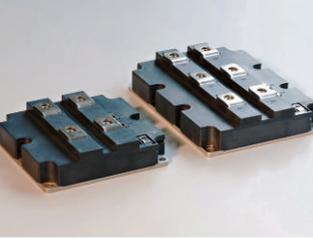
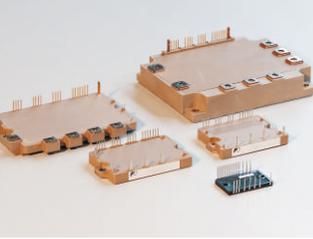
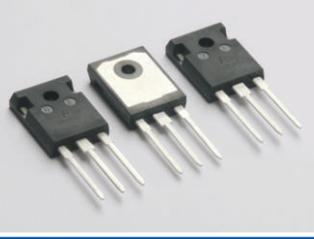
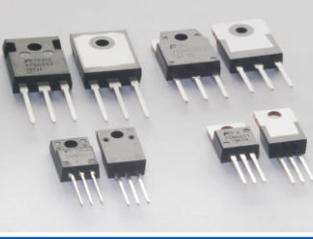
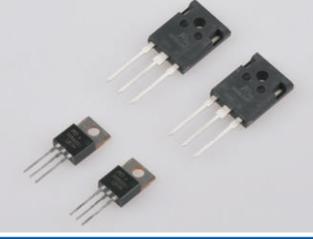




# Power Semiconductors

IGBT modules . All SiC modules . MOSFETs . SiC Schottky Diodes . IGBT-Drivers

|   |   |   |  |  |   |
|---|---|---|--|--|---|
| <p>Pre-applied Thermal Interface Material (TIM) <b>3</b></p>                  | <p>IGBT-Modules for 3-Level inverters <b>6-7</b></p>     | <p>Hybrid IGBT-Modules with SiC Schottky Barrier Diodes <b>8-9</b></p>  | <p>All SiC 2in1 modules SiC MOS-FET &amp; SiC Schottky diode <b>10</b></p>  | <p>PIM Power Integrated Modules Solder pins &amp; PressFit contacts <b>11-13</b></p>  | <p>6-Pack IGBT-Modules, Solder pins &amp; PressFit contacts <b>14</b></p>              |
| <p>2-Pack IGBT-Modules, Spring-, Pin- &amp; PressFit contacts <b>15</b></p>  | <p>Standard 1- &amp; 2-Pack IGBT-Modules <b>16</b></p>  | <p>High Power Modules 1200V, 1700V &amp; 3300V <b>17</b></p>           | <p>High Power next Core (HPnC) 1700V &amp; 3300V <b>18</b></p>             | <p>High Power Modules 2-Pack &amp; Chopper <b>19</b></p>                             | <p>IPM Intelligent Power Modules <b>20-22</b></p>                                     |
| <p>Chopper modules &amp; High speed IGBTs <b>23</b></p>                     | <p>Discrete IGBTs <b>24</b></p>                        | <p>Super Junction- MOSFETs with &amp; without FRED <b>25</b></p>      | <p>SiC Schottky Barrier Diodes <b>26</b></p>                              | <p>IGBT-Drivers <b>27</b></p>   | <p><a href="http://www.fujielectric-europe.com">www.fujielectric-europe.com</a></p>  |

Notes



## 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 guarantee 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.

The range of modules with pre-applied TIM is being continually expanded.  
For latest availability status please refer to [actual product information](#) ▶

or contact us: ▶ [info.semi@fujielectric-europe.com](mailto:info.semi@fujielectric-europe.com)



# About Type Name

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

## 1. Standard IGBT-modules, hybrid-modules and all SiC-modules

2 MBi 450 □ □ ... □ - 120 □ - □ □

Suffix = RoHS compliant. Numerals indicate other specific properties in addition to RoHS.

Variation of chip & configuration

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

Package type and other properties

IGBT-series/Chip generation (U=U-series, V=V-series, X=X-series etc.)

Current class  $I_c$  [A]

Device type & configuration

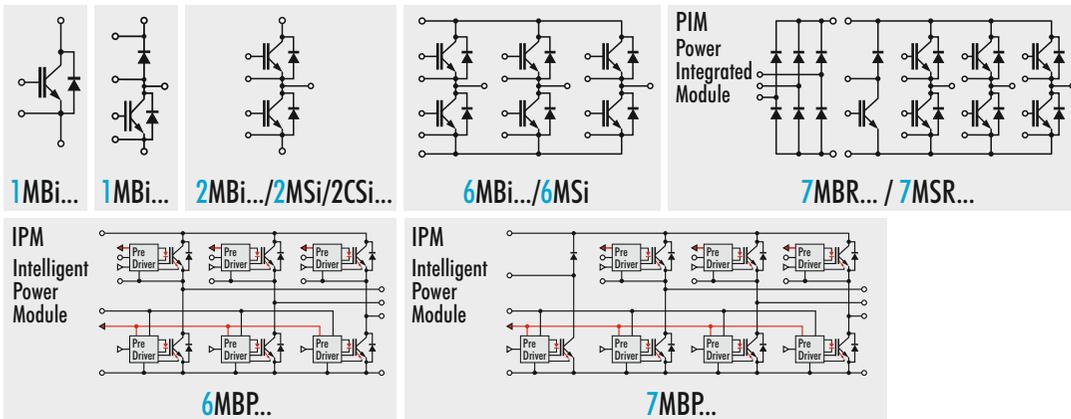
MBi .....: Standard IGBT module (1-, 2- and 6-pack)

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

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

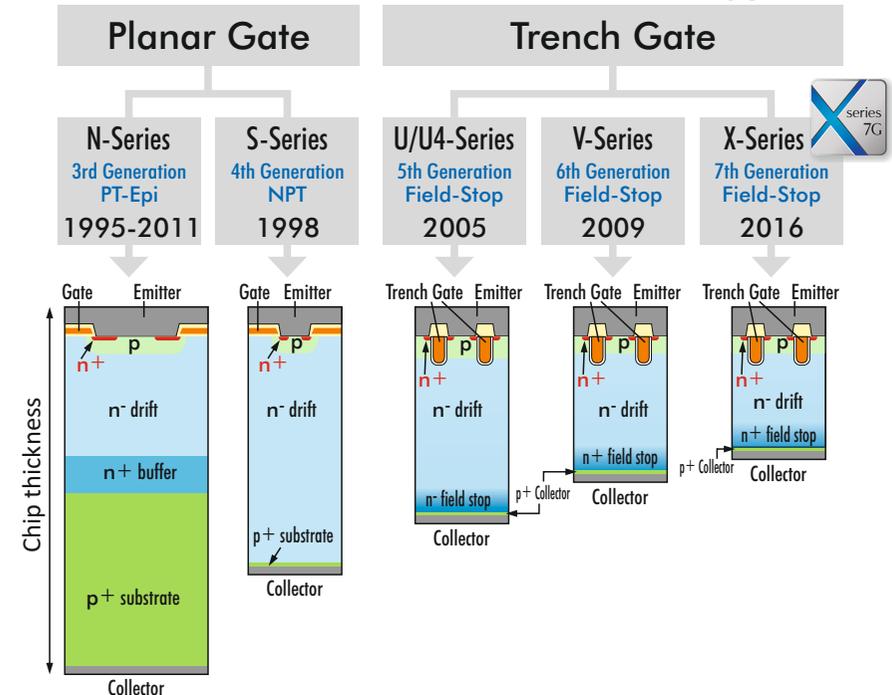

**MSi, MSR**: The "S" indicates hybrid module with Si-IGBT & SiC Schottky free wheeling diodes


**CSi** .....: All SiC module (SiC MOS-FET & SiC Schottky diode)



Number of IGBT-switches (not number of chips)

## Evolution of IGBT technology



# About Type Name

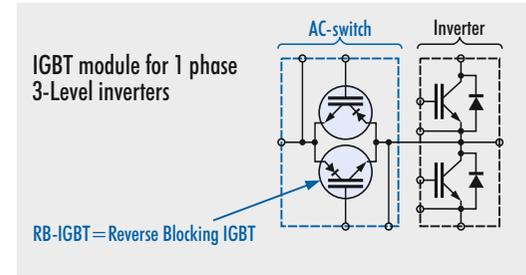
The Type Name is not exactly the item code for the ordering process

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

4 M Bi300 VG-120 R1-50

Voltage class of inverter part  
 060 = 600V  
 120 = 1200V  
 170 = 1700V

Voltage class of AC-switch/RB-IGBT  
 R = 600V  
 R1 = 900V  
 R2 = 1200V



## 3. Discrete IGBTs

F G W 35 N 60 HD

Fuji IGBT Package  $I_c$  [A] N-channel Series  
 Voltage: 60 = 600V • 65 = 650V • 120 = 1200V

## 4. Super-Junction MOSFETs

F M P 60 N 133 S2 FD

Fuji MOSFET Package N-channel  $R_{DS(on),max}$  [mΩ] With built-in FRED Super-Junction MOSFET, S2-Series  
 Voltage: 60 = 600V • 65 = 650V

## 5. SiC Schottky Barrier Diodes

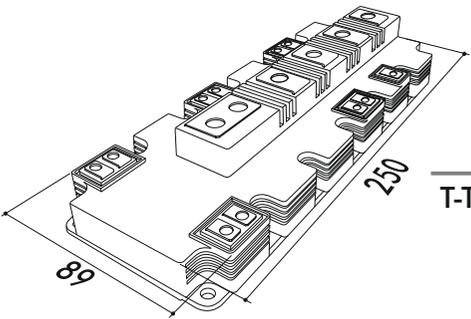
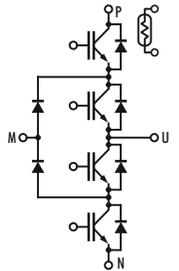
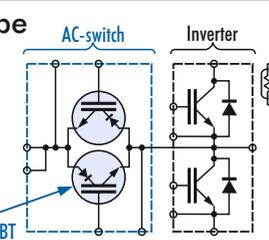
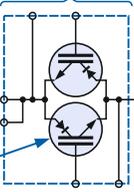
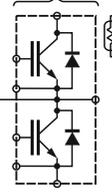
F D C P 25 S 65

Fuji SiC-Diode Package  $I_{FAV}$  [A] Configuration C = Dual S = Single  
 Voltage: 65 = 650V • 120 = 1200V

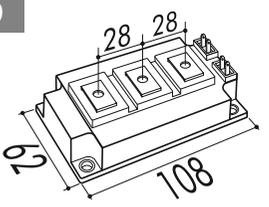
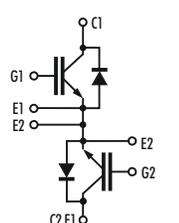
# IGBT-Modules for 3-Level-inverters

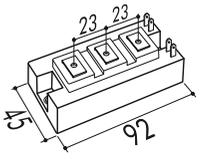
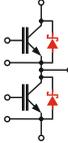
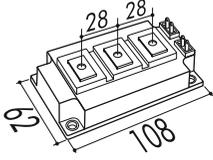
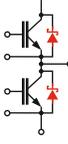
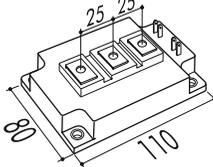
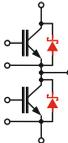
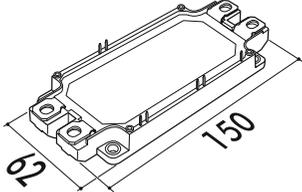
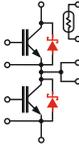
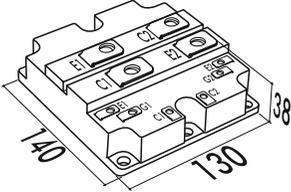
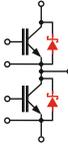
|         |                                   | 600V         |                         | 1200V     |                         | 1700V               |                         |                     |       |
|---------|-----------------------------------|--------------|-------------------------|-----------|-------------------------|---------------------|-------------------------|---------------------|-------|
|         |                                   | $I_C$        | V-Series 6th Generation | AC-switch | V-Series 6th Generation | AC-switch           | V-Series 6th Generation | AC-switch           |       |
| 3 Phase | <b>1</b><br>Solder pins<br>       |              |                         |           |                         |                     |                         |                     |       |
|         |                                   | 50A          |                         |           | 12MBi 50VN-120-50       | 600V                |                         |                     |       |
|         |                                   | 75A          |                         |           | 12MBi 75VN-120-50       | 600V                |                         |                     |       |
|         |                                   |              | 100A                    |           |                         | 12MBi 100VN-120-50  | 600V                    |                     |       |
|         | <b>2</b><br>PressFit contacts<br> |              |                         |           |                         |                     |                         |                     |       |
|         |                                   | 50A          |                         |           | 12MBi 50VX-120-50       | 600V                |                         |                     |       |
|         |                                   | 75A          |                         |           | 12MBi 75VX-120-50       | 600V                |                         |                     |       |
|         |                                   |              | 100A                    |           |                         | 12MBi 100VX-120-50  | 600V                    |                     |       |
|         | 1 Phase                           | <b>3</b><br> |                         |           |                         |                     |                         | 4MBi 220VF-170R2-50 | 1200V |
| 220A    |                                   |              |                         |           |                         |                     |                         |                     |       |
| 300A    |                                   |              |                         |           |                         | 4MBi 300VG-120R-50  | 600V                    |                     |       |
| 340A    |                                   |              |                         |           |                         | 4MBi 300VG-120R1-50 | 900V                    |                     |       |
|         |                                   | 340A         |                         |           | 4MBi 340VF-120R-50      | 600V                |                         |                     |       |
|         |                                   | 400A         | 4MBi 400VG-060R-50      | 600V      | 4MBi 400VF-120R-50      | 600V                |                         |                     |       |

## IGBT-Modules for 3-Level-inverters

|         |   | $I_c$   | 1200V                   |                     | 1700V                   |                     |       |
|---------|---|---|-------------------------|---------------------|-------------------------|---------------------|-------|
|         |   |   | V-Series 6th Generation | AC-switch           | V-Series 6th Generation | AC-switch           |       |
| 1 Phase | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>4</p>  </div> <div style="text-align: center;"> <p>I-Type</p>  </div> </div> | 600A  | 4MBi 600VC-120-50       |                     |                         |                     |       |
|         |   | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>T-Type</p>  </div> <div style="text-align: center;"> <p>AC-switch</p>  </div> <div style="text-align: center;"> <p>Inverter</p>  </div> </div> <p>RB-IGBT = Reverse Blocking IGBT</p> | 450A                    | 4MBi 450VB-120R1-50 | 900V                    | 4MBi 450VB-170R2-50 | 1200V |
|         |   |   | 600A                    |                     |                         | 4MBi 600VB-170R2-50 | 1200V |
|         |   |   | 650A                    | 4MBi 650VB-120R1-50 | 900V                    |                     |       |
|         |   |   | 900A                    | 4MBi 900VB-120R1-50 | 900V                    |                     |       |

## AC-switch

|        |   | $I_c$ | 1200V                   |
|--------|---|-------|-------------------------|
|        |   |       | V-Series 6th Generation |
| 2-Pack | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>5</p>  </div> <div style="text-align: center;">  </div> </div> | 450A  | 2MBi 450VH-120F-50      |

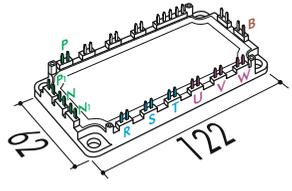
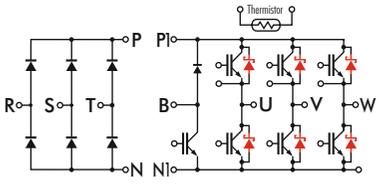
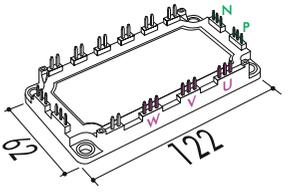
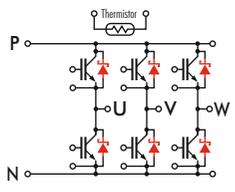
| Hybrid IGBT-Modules with SiC-SBD   |   | $I_C$   | 1200V  | 1700V                      |  |                     |
|--|---|---|--|----------------------------|--|---------------------|
|  |   |   | V-Series<br>6th Generation   | V-Series<br>6th Generation |  |                     |
| 2-Pack   | 6   |    |   | 200A                       | 2MSi 200VAB-120-53                       |                     |
|  | 7   |    |   | 300A                       | 2MSi 300VAH-120C-53                      |                     |
|  | 8   |    |   | 400A                       |  | 2MSi 400VAE-170-53  |
|  | 9   |   |  | 300A                       | 2MSi 300VAN-120-53*                      |                     |
|  |   |   |  | 450A                       | 2MSi 450VAN-120-53                       | 2MSi 450VAN-170-53* |
| 550A   |   |   |  |                            | 2MSi 550VAN-170-53*                      |                     |
| 600A   | 2MSi 600VAN-120-53*   |   |  |                            |  |                     |
| 10   |  |  | 1200A  |                            | 2MSi 1200VAT-170EC<br>2MSi 1200VAT-170PC |                     |

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

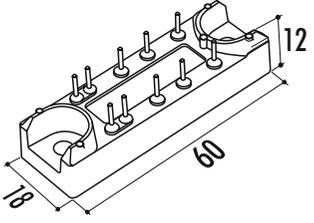
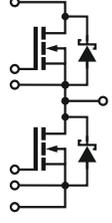
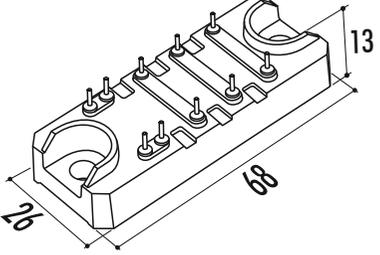
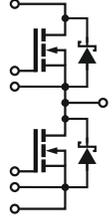
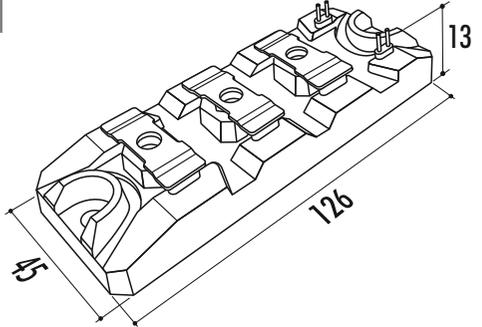
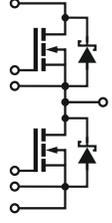
\*) Under development

# Hybrid IGBT-Modules with SiC-SBD



|               |   | 600V                       | 1200V                      |
|---------------|---|----------------------------|----------------------------|
| <b>PIM</b>    | <b>11</b>   | V-Series<br>6th Generation | V-Series<br>6th Generation |
|               |  |                            |                            |
|               |  |                            |                            |
|               | <b>35A</b>  |                            | 7MSR 35VAB-120-50          |
| <b>6-Pack</b> | <b>12</b>   |                            |                            |
|               |  |                            |                            |
|               |  |                            |                            |
|               | <b>100A</b>   |                            | 6MSi 100VAB-120-50         |



| All SiC 2in1 modules (SiC MOS-FET & SiC Schottky diode) |  | 1200V |                     |
|---|--|-------|---------------------|
|   |  | $I_C$ | 1st gen. TrenchMOS  |
| 2-Pack  | <b>13</b><br>    | 25A   | 2CSi 25CAN-120-50*  |
|   |  | 50A   | 2CSi 50CAN-120-50*  |
|   | <b>14</b><br>    | 75A   | 2CSi 75CAM-120-50*  |
|   |  | 100A  | 2CSi 100CAM-120-50* |
|   | <b>15</b><br>  | 200A  | 2CSi 200CAS-120-50* |
|   |  | 300A  | 2CSi 300CAS-120-50* |
|   |  | 400A  | 2CSi 400CAS-120-50* |

\*) Under development

# Small PIM IGBTs (Power Integrated Modules)

|                        |     | 600V                       | 650V                       | 1200V                      |                            |                   |
|------------------------|-----|----------------------------|----------------------------|----------------------------|----------------------------|-------------------|
|                        |     | V-Series<br>6th Generation | X-Series<br>7th Generation | V-Series<br>6th Generation | X-Series<br>7th Generation |                   |
| With PressFit contacts | 16  | 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 solder pins       | 17  | 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          |                            |                   |
|                        | 18  | 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       | 19  | 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 IGBTs (Power Integrated Module) with solder pins**

|                   | $I_C$ | 600V                       | 650V                                     | 1200V                      |                            |
|-------------------|-------|----------------------------|--|----------------------------|----------------------------|
|                   |       | V-Series<br>6th Generation | X-Series<br>7th Generation               | V-Series<br>6th Generation | X-Series<br>7th Generation |
| <b>20</b><br><br> | 25A   |                            |  | 7MBR 25VA-120-50           |                            |
|                   | 35A   |                            |  | 7MBR 35VA-120-50           |                            |
|                   | 50A   | 7MBR 50VA-060-50           |  |                            |                            |
| <b>21</b><br><br> | 35A   |                            |  | 7MBR 35VB-120-50           |                            |
|                   | 50A   |                            |  | 7MBR 50VB-120-50           |                            |
|                   | 75A   | 7MBR 75VB-060-50           |  | 7MBR 75VB-120-50           |                            |
|                   | 100A  | 7MBR 100VB-060-50          |  |                            |                            |
| <b>22</b><br><br> | 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          |
| <b>23</b><br><br> | 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                       |                            |                            |
| <b>24</b><br><br> | 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         |
| <b>25</b><br><br> | 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<br>7MBR 150XRE-065-50 | 7MBR 150VR-120-50          | 7MBR 150XRE-120-50         |

With solder pins



### PIM IGBTs (Power Integrated Modules) with PressFit contacts

|               | $I_C$ | 600V                       | 650V                       | 1200V                      |                            |
|---------------|-------|----------------------------|----------------------------|----------------------------|----------------------------|
|               |       | V-Series<br>6th Generation | X-Series<br>7th Generation | V-Series<br>6th Generation | X-Series<br>7th Generation |
| <b>26</b><br> | 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          |
| <b>27</b><br> | 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         |
| <b>28</b><br> | 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         |                            |                            |
| <b>29</b><br> | 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         |

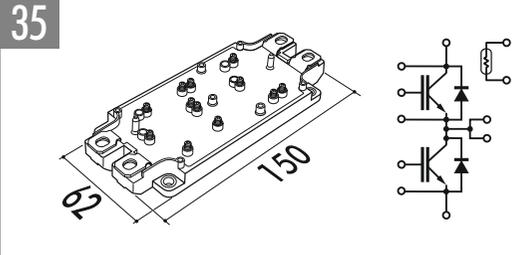
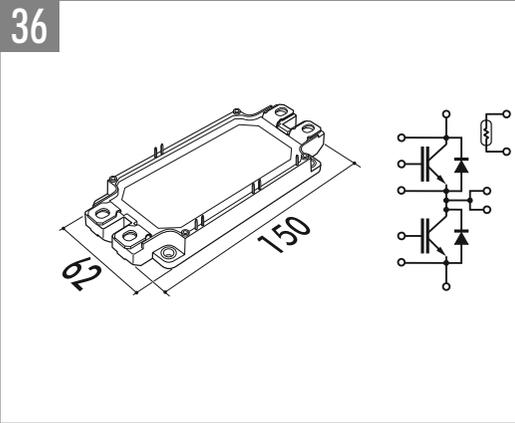
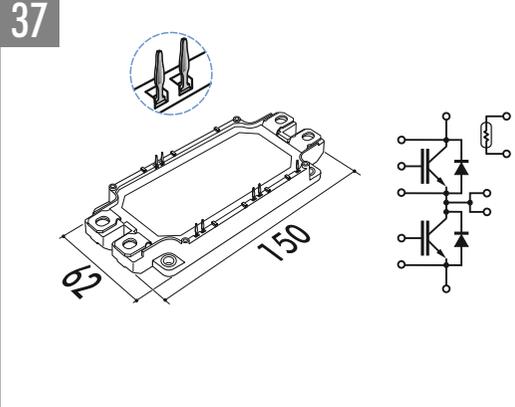
With PressFit contacts

### 6-Pack IGBTs

|                        |        | 600V  |                         | 1200V                   |                         | 1700V                   |                         |
|------------------------|--------|-------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                        |        | $I_c$ | V-Series 6th Generation | V-Series 6th Generation | X-Series 7th Generation | X-Series 7th Generation | X-Series 7th Generation |
| With solder pins       | 30<br> | 50A   | 6MBi 50VA-060-50        | 6MBi 50VA-120-50        |                         |                         |                         |
|                        |        | 75A   | 6MBi 75VA-060-50        | 6MBi 75VA-120-50        |                         |                         |                         |
|                        |        | 100A  | 6MBi 100VA-060-50       | 6MBi 100VA-120-50       | 6MBi 100XAE-120-50 *    |                         |                         |
|                        | 31<br> | 100A  |                         |                         | 6MBi 100VB-120-50       | 6MBi 100XBA-120-50      |                         |
|                        |        | 150A  |                         |                         | 6MBi 150VB-120-50       | 6MBi 150XBA-120-50      |                         |
|                        |        | 180A  |                         |                         | 6MBi 180VB-120-50       |                         |                         |
| With PressFit contacts | 32<br> | 50A   | 6MBi 50VW-060-50        | 6MBi 50VW-120-50        |                         |                         |                         |
|                        |        | 75A   | 6MBi 75VW-060-50        | 6MBi 75VW-120-50        |                         |                         |                         |
|                        |        | 100A  | 6MBi 100VW-060-50       | 6MBi 100VW-120-50       |                         |                         |                         |
|                        | 33<br> | 100A  |                         |                         | 6MBi 100VX-120-50       | 6MBi 100XXA-120-50      |                         |
|                        |        | 150A  |                         |                         | 6MBi 150VX-120-50       | 6MBi 150XXA-120-50      |                         |
|                        |        | 180A  |                         |                         | 6MBi 180VX-120-50       |                         |                         |
| High power             | 34<br> | 225A  |                         |                         | 6MBi 225XNA-120-50*     | 6MBi 225XNA-170-50*     |                         |
|                        |        | 300A  |                         |                         | 6MBi 300XNA-120-50*     | 6MBi 300XNA-170-50*     |                         |
|                        |        | 450A  |                         |                         | 6MBi 450XNA-120-50*     | 6MBi 450XNA-170-50*     |                         |
|                        |        | 600A  |                         |                         | 6MBi 600XNA-120-50*     | 6MBi 600XNA-170-50*     |                         |

\*) Under development

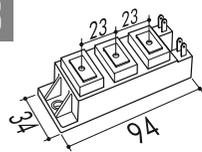
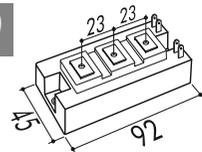
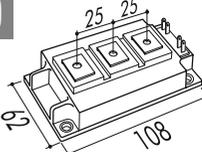
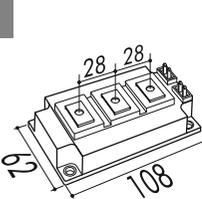
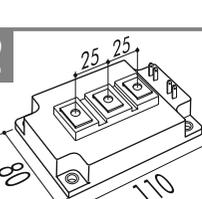
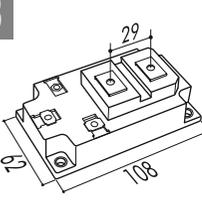
## 2-Pack IGBT-Modules with Spring-, Pin- & PressFit contacts

|                   |  | 1200V                      |   |                            | 1700   |                            |                                  |
|-------------------|--|----------------------------|---|----------------------------|--|----------------------------|----------------------------------|
|                   |  | V-Series<br>6th Generation | V-Series<br>6th Generation<br>With SiN-substrate<br>20% Lower thermal impedance | X-Series<br>7th Generation | V-Series<br>6th Generation                             | X-Series<br>7th Generation |                                  |
|                   |  | $I_C$                      |   |                            |  |                            |                                  |
| Spring contacts   |   | 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       |   | 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 600XNG-120-50<br>2MBi 600XNE-120-50 <sup>1)</sup> |                            | 2MBi 600XNE-170-50 <sup>1)</sup> |
|                   |  | 800A                       |   |                            | 2MBi 800XNE-120-50 <sup>1)</sup>                       |                            |                                  |
| PressFit contacts |  | 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 600XNH-120-50<br>2MBi 600XNF-120-50 <sup>1)</sup> |                            | 2MBi 600XNF-170-50 <sup>1)</sup> |
|                   |  | 800A                       |   |                            | 2MBi 800XNF-120-50 <sup>1)</sup>                       |                            |                                  |

1): With enhanced package properties ( thicker terminals, AlN substrate , Visol=4kV , CTI=600)

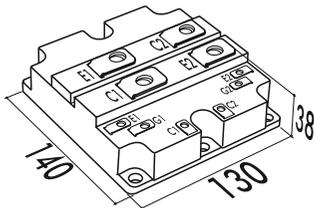
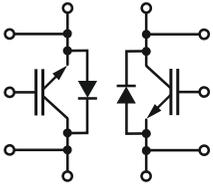
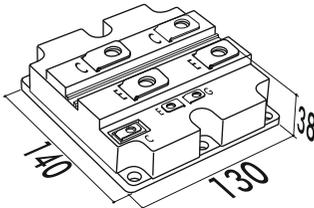
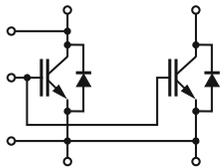
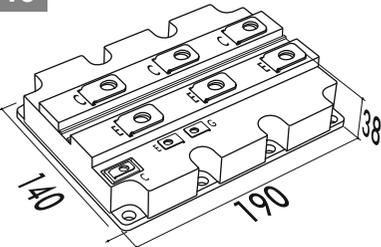
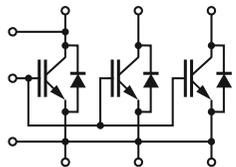
\*) Under development

Standard 1- & 2-Pack

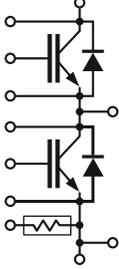
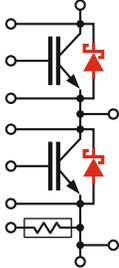
|  |  | 600V              |                            | 650V  | 1200V  |                            | 1700V  |                            |
|--|--|-------------------|----------------------------|--|---|----------------------------|---|----------------------------|
|  |  | I <sub>C</sub>    | V-Series<br>6th Generation | X-Series<br>7th Generation   | V-Series<br>6th Generation  | X-Series<br>7th Generation | V-Series<br>6th Generation  | X-Series<br>7th Generation |
| 2-Pack   | <b>38</b><br>   | 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 150XAA-065-50 *   | 2MBi 150VA-120-50   | 2MBi 150XAA-120-50 *       |   | 2MBi 150XAA-170-50 *       |
|  |  | 200A              | 2MBi 200VA-060-50          | 2MBi 200XAA-065-50 *   |   | 2MBi 200XAA-120-50 *       |   |                            |
|  | <b>39</b><br>   | 150A              |                            |  | 2MBi 150VB-120-50   |                            |   |                            |
|  |  | 200A              |                            |  | 2MBi 200VB-120-50   | 2MBi 200XBE-120-50 *       |   |                            |
|  |  | 300A              | 2MBi 300VB-060-50          | 2MBi 300XBE-065-50 *   |   | 2MBi 300XBE-120-50 *       |   |                            |
|  |  | 400A              | 2MBi 400VB-060-50          | 2MBi 400XBE-065-50 *   |   |                            |   |                            |
|  | <b>40</b><br>   | 300A              |                            |  | 2MBi 300VD-120-50   |                            |   |                            |
|  |  | 400A              | 2MBi 400VD-060-50          | 2MBi 400XDE-065-50 *   | 2MBi 400VD-120-50   | 2MBi 400XDE-120-50 *       |   |                            |
|  |  | 600A              | 2MBi 600VD-060-50          | 2MBi 600XDE-065-50 *   |   | 2MBi 600XDE-120-50 *       |   |                            |
|  | <b>41</b><br>   | 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 *  |                            |   |                            |
| <b>42</b><br> | 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 600XEE-065-50 *       | 2MBi 600VE-120-50  | 2MBi 600XEE-120-50 *  |                            | 2MBi 600XEE-170-50 *  |                            |
| 1-Pack   | <b>43</b><br> | 300A              |                            |  |   |                            | 1MBi 300V-170-50  |                            |
|  |  | 400A              |                            |  | 1MBi 400V-120-50<br>1MBi 400VF-120-50   |                            | 1MBi 400V-170-50  |                            |
|  |  | 600A              |                            |  | 1MBi 600V-120-50<br>1MBi 600VF-120-50   |                            | 1MBi 600V-170-50  |                            |
|  |  | 900A              |                            |  | 1MBi 900V-120-50  |                            |   |                            |

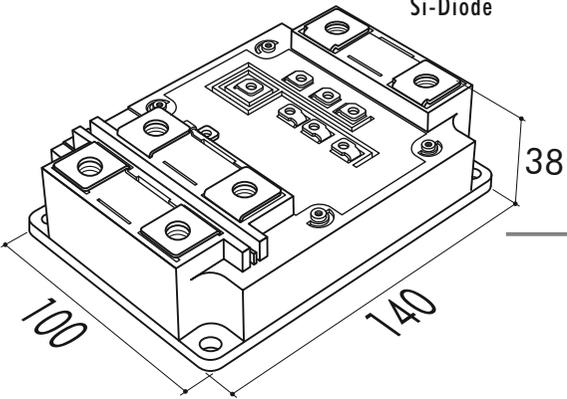
\*) Under development

## High Power Modules 1- & 2-Pack

|        |  | 1200V   |  | 1700V   |  | 3300V   |                  |
|--------|--|---|--|---|--|---|------------------|
|        |  | V-Series<br>6th Generation<br>With<br>Cu-baseplate<br>Soft turn-off | V-Series<br>6th Generation<br>With<br>Cu-baseplate<br>Low switching loss | V-Series<br>6th Generation<br>With<br>AlSiC-baseplate<br>Low switching loss | U-Series<br>5th Generation<br>With<br>AlSiC-baseplate<br>Soft turn-off | U-Series<br>5th Generation<br>With<br>AlSiC-baseplate<br>Low switching loss |                  |
|        |  | $I_c$   |  |   |  |   |                  |
| 2-Pack | 44<br><br>140 130 38<br>     | 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 | 45<br><br>140 130 38<br>   | 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   |   |                  |
| 1-Pack | 46<br><br>140 190 38<br> | 1200A   |  |   |  | 1MBi 1200UE-330   |                  |
|        |  | 1500A   |  |   |  | 1MBi 1500UE-330   | 1MBi 1500UE-330B |
|        |  | 2400A   | 1MBi 2400VD-120P   | 1MBi 2400VD-170E  | 1MBi 2400VS-170E   |   |                  |
|        |  | 3600A   | 1MBi 3600VD-120P   | 1MBi 3600VD-170E  | 1MBi 3600VS-170E   |   |                  |

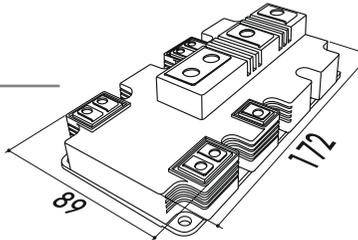
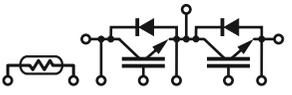
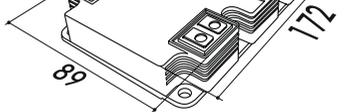
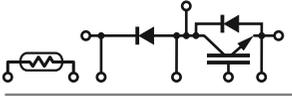
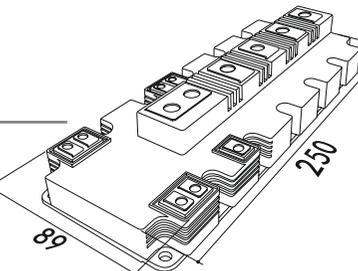
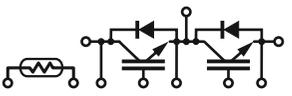
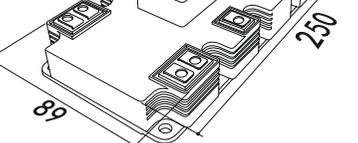
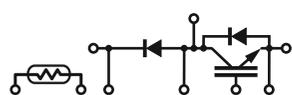
## High Power next Core (HPnC)

|   |    |  | 1700V  | 3300V    |  |   |       |                      |
|---|----|--|---|---|--|---|-------|----------------------|
|   |    |  | X-Series 7th Generation   | X-Series 7th Generation   |  |   |       |                      |
| <div style="writing-mode: vertical-rl; transform: rotate(180deg);">                     All Silicon Modules<br/>Si-IGBT &amp; Si-Diode                 </div> | 47 | <b>All Silicon Modules</b><br>Si-IGBT (X-Series, 7th generation)<br>Si-Diode |         | 450A  |  |   |       |                      |
|   |    |  |   | <div style="writing-mode: vertical-rl; transform: rotate(180deg);">                     Hybrid Modules<br/>Si-IGBT &amp; SiC-Diode                 </div> |  | <b>Hybrid Modules</b><br>Si-IGBT (X-Series, 7th generation)<br>SiC-Schottky Diode | 450A  | 2MSi 450XUF-330-50*  |
|   |    |  |   |   |  |   | 1000A | 2MSi 1000XUF-170-50* |
|   |    |  |   |   |  |   | 1000A | 2MSi 1000XUF-170-50* |



\*) Under development

## High Power Modules, 2-Pack & Chopper

|         |  | 1200V   |   | 1700V   |   |  |                      |
|---------|--|---|---|---|---|--|----------------------|
|         |  | V-Series<br>6th Generation<br>E-type (Low switching loss)<br>P-type (Soft turn-off)   | X-Series<br>7th Generation<br>E-type (Low switching loss)<br>P-type (Soft turn-off) | V-Series<br>6th Generation<br>E-type (Low switching loss)<br>P-type (Soft turn-off) | X-Series<br>7th Generation  |  |                      |
| 2-Pack  | 48   | <br>    | 600A  | 2MBi 600VXA-120E-50   |   |  |                      |
|         |  |   | 650A  |   | 2MBi 650VXA-170E-50<br>2MBi 650VXA-170EA-50<br><i>(With larger free wheeling diode)</i>   |  |                      |
|         |  |   | 900A  | 2MBi 900VXA-120E-50<br>2MBi 900VXA-120P-50  | 2MBi 900XXA-120E-50*<br>2MBi 900XXA-120P-50*  |  |                      |
|         |  |   | 1200A   |   | 2MBi 1200XXE-120E-50*<br>2MBi 1200XXE-120P-50*  | 2MBi 1200XXE-170-50*                         |                      |
| Chopper | <br>     | 650A  |   | 1MBi 650VXA-170EL-50  |   |  |                      |
|         |  | 900A  | 1MBi 900VXA-120PD-50  |   |   |  |                      |
|         |  | 650A  |   | 1MBi 650VXA-170EH-50  |   |  |                      |
|         |  | 900A  | 1MBi 900VXA-120PC-50  |   |   |  |                      |
| 2-Pack  | 49   | <br> | 1000A   |   | 2MBi 1000VXB-170E-50<br>2MBi 1000VXB-170EA-50<br><i>(With larger free wheeling diode)</i> |  |                      |
|         |  |   | 1400A   | 2MBi 1400VXB-120E-50<br>2MBi 1400VXB-120P-50  | 2MBi 1400XXB-120P-50*   | 2MBi 1400VXB-170E-50<br>2MBi 1400VXB-170P-50 | 2MBi 1400XXB-170-50* |
|         |  |   | 1800A   |   | 2MBi 1800XXF-120P-50*   |  | 2MBi 1800XXF-170-50* |
| Chopper | <br> | 1000A   |   | 1MBi 1000VXB-170EL-50   |   |  |                      |
|         |  | 1400A   | 1MBi 1400VXB-120PL-54   |   | 1MBi 1400VXB-170PL-50   |  |                      |
|         |  | 1000A   |   |   | 1MBi 1000VXB-170EH-50   |  |                      |
|         |  | 1400A   | 1MBi 1400VXB-120PH-54   |   | 1MBi 1400VXB-170PH-50   |  |                      |

Above devices are available with  $V_{CE,sat}$  &  $V_F$  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 ( $V_{temp,out}$ )

|                       | Series                              | 600V                    |                         | 1200V                   |                   |                   |
|-----------------------|-------------------------------------|-------------------------|-------------------------|-------------------------|-------------------|-------------------|
|                       |                                     | V-Series 6th Generation | X-Series 7th Generation | V-Series 6th Generation |                   |                   |
| Without Brake-Chopper | 50 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 |                   |
| Without Brake-Chopper | 51 $I_c$ - & $T_j$ -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 | 52 $I_c$ - & $T_j$ -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 |                   |

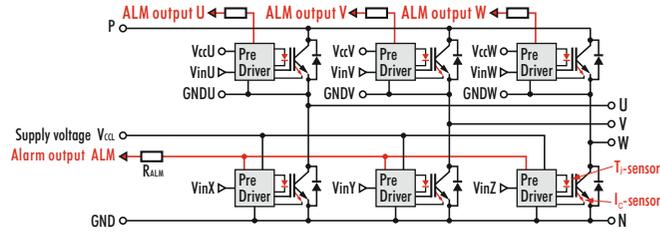
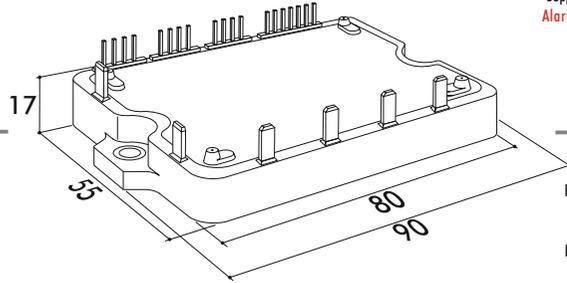
# IPM IGBTs (Intelligent Power Modules)

## Built-in protection functions

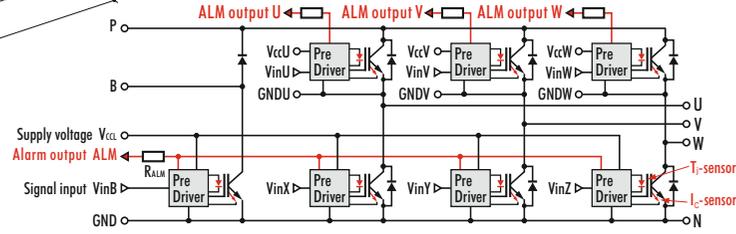
- Fault status output (Alarm)
- Under voltage protection (self shutdown)
- Short circuit protection (self shutdown)
- Overheating protection (self shutdown)
- Temperature sensor function ( $V_{temp,out}$ )

### 53 $I_c$ - & $T_j$ -Sensors on chip

Without  
Brake-Chopper



With  
Brake-Chopper



| $I_c$ | 600V                       | 1200V                      |
|-------|----------------------------|----------------------------|
|       | V-Series<br>6th Generation | V-Series<br>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         |                            |

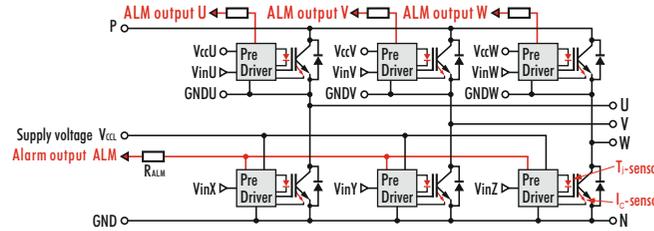
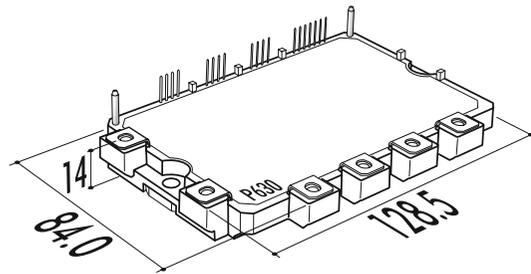
# IPM IGBTs (Intelligent Power Modules)

## Built-in protection functions

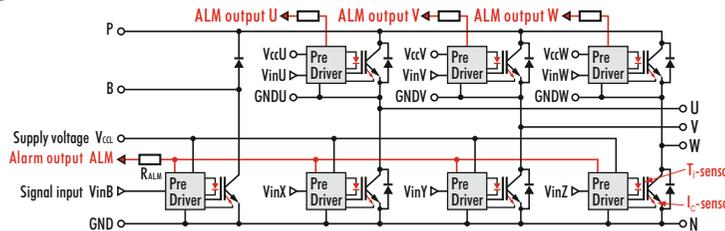
- Fault status output (Alarm)
- Under voltage protection (self shutdown)
- Short circuit protection (self shutdown)
- Overheating protection (self shutdown)
- Temperature sensor function ( $V_{temp,out}$ )

### 54 $I_c$ - & $T_j$ -Sensors on chip

Without Brake-Chopper

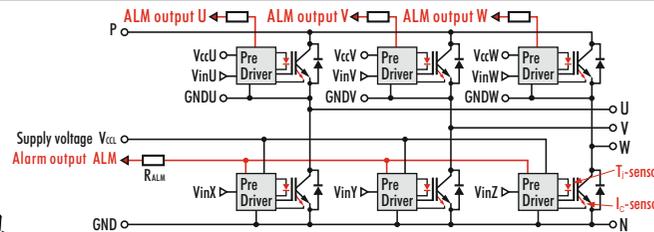
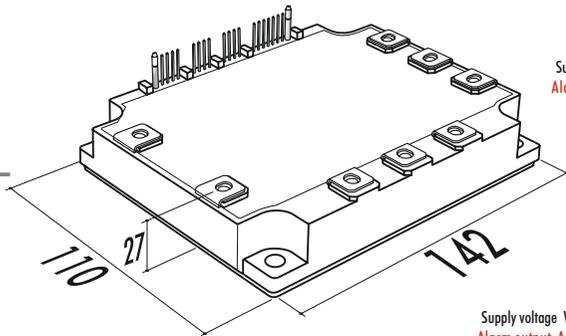


With Brake-Chopper

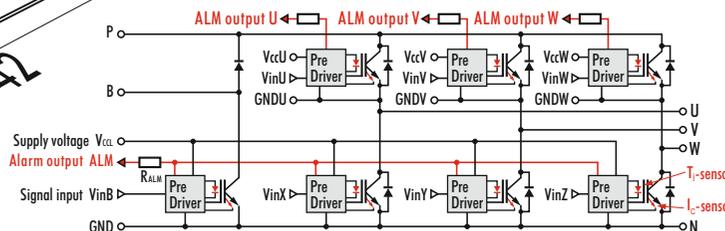


### 55 $I_c$ - & $T_j$ -Sensors on chip

Without Brake-Chopper



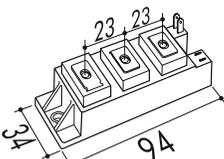
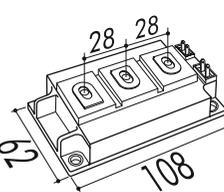
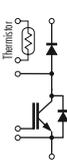
With Brake-Chopper



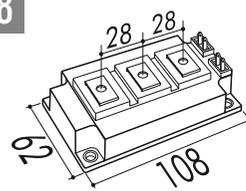
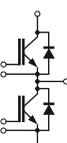
| $I_c$ | 600V   | 1200V  |
|-------|--|--|
|       | V-Series 6th Generation                                | V-Series 6th Generation                                |
| 25A   |  | 6MBP 25VDA-120-50                                      |
| 35A   |  | 6MBP 35VDA-120-50                                      |
| 50A   | 6MBP 50VDA-060-50                                      | 6MBP 50VDA-120-50<br>6MBP 50VDN-120-50 <sup>1)</sup>   |
| 75A   | 6MBP 75VDA-060-50                                      | 6MBP 75VDA-120-50<br>6MBP 75VDN-120-50 <sup>1)</sup>   |
| 100A  | 6MBP 100VDA-060-50<br>6MBP 100VDN-060-50 <sup>1)</sup> | 6MBP 100VDA-120-50<br>6MBP 100VDN-120-50 <sup>1)</sup> |
| 150A  | 6MBP 150VDA-060-50<br>6MBP 150VDN-060-50 <sup>1)</sup> |  |
| 200A  | 6MBP 200VDA-060-50<br>6MBP 200VDN-060-50 <sup>1)</sup> |  |
| 25A   |  | 7MBP 25VDA-120-50                                      |
| 35A   |  | 7MBP 35VDA-120-50                                      |
| 50A   | 7MBP 50VDA-060-50                                      | 7MBP 50VDA-120-50<br>7MBP 50VDN-120-50 <sup>1)</sup>   |
| 75A   | 7MBP 75VDA-060-50                                      | 7MBP 75VDA-120-50<br>7MBP 75VDN-120-50 <sup>1)</sup>   |
| 100A  | 7MBP 100VDA-060-50<br>7MBP 100VDN-060-50 <sup>1)</sup> | 7MBP 100VDA-120-50<br>7MBP 100VDN-120-50 <sup>1)</sup> |
| 150A  | 7MBP 150VDA-060-50<br>7MBP 150VDN-060-50 <sup>1)</sup> |  |
| 200A  | 7MBP 200VDA-060-50<br>7MBP 200VDN-060-50 <sup>1)</sup> |  |
| 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                                     |  |
| 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)

|  |  | 1200V                           |   |                            |
|--|--|---------------------------------|---|----------------------------|
|  |  | Planar-NPT<br>High Speed-Series | U-Series<br>5th Generation                | V-Series<br>6th Generation |
| Chopper  | <b>56</b><br>  | 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         |
| <b>57</b><br>  | 200A   | 1MBi 200HH-120L-50              | 1MBi 200U4H-120L-50<br>Without thermistor |                            |
|  | 300A   | 1MBi 300HH-120L-50              |   |                            |
|  | 400A   | 1MBi 400HH-120L-50              |   |                            |

## High Speed IGBTs

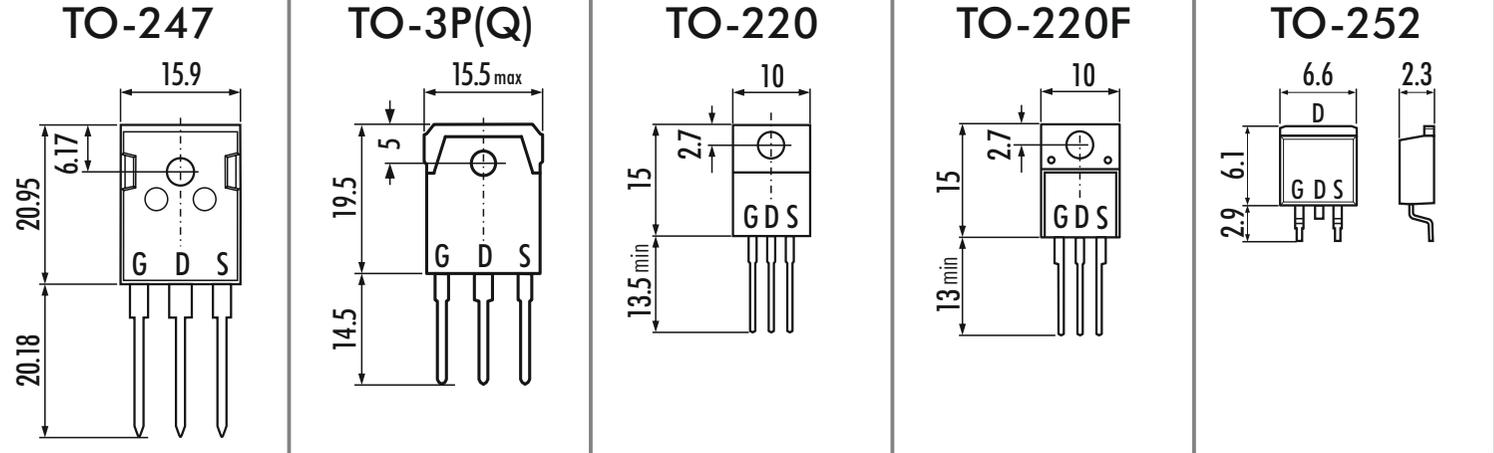
|        |  | 1200V                           |                   |
|--------|--|---------------------------------|-------------------|
|        |  | Planar-NPT<br>High Speed-Series |                   |
| 2-Pack | <b>58</b><br>  | 100A                            | 2MBi 100HJ-120-50 |
|        |  | 150A                            | 2MBi 150HJ-120-50 |
|        |  | 200A                            | 2MBi 200HJ-120-50 |
|        |  | 300A                            | 2MBi 300HJ-120-50 |

### Discrete IGBTs

|                     | I <sub>c</sub> | V-Series, 6th Generation<br>Low loss, ~10kHz |  | V-Series, 6th Generation<br>High speed, 10~30kHz |  | W-Series, 6th Generation<br>Ultra high speed, 20~100kHz |  |
|---------------------|----------------|--|--|--|--|---|--|
|                     |                | 600V   | 1200V                                      | 600V   | 1200V                                      | 650V  | 1200V  |
| <b>TO-247</b><br>   | 59             | 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                                      |  | FGW 75N 65W   |  |
|                     | 15A            |  | FGW 15N 120VD                              |  | FGW 15N 120HD                              |   |  |
|                     | 25A            |  | FGW 25N 120VD                              |  |  |   | FGW 25N 120WD<br>FGW 25N 120WE <sup>1)</sup> |
|                     | 30A            | FGW 30N 60VD                                 |  |  | FGW 30N 120HD                              |   |  |
|                     | 35A            |  |  | FGW 35N 60HD<br>FGW 35N 60HC <sup>1)</sup>       |  |   |  |
|                     | 40A            |  | FGW 40N 120VD                              |  | FGW 40N 120HD                              | FGW 40N 65WD<br>FGW 40N 65WE <sup>1)</sup>              | FGW 40N 120WD<br>FGW 40N 120WE <sup>1)</sup> |
|                     | 50A            | FGW 50N 60VD                                 |  | FGW 50N 60HD<br>FGW 50N 60HC <sup>1)</sup>       |  | FGW 50N 65WD<br>FGW 50N 65WE <sup>1)</sup>              |  |
| 60A                 |                |  |  |  | FGW 60N 65WD<br>FGW 60N 65WE <sup>1)</sup> |   |  |
| 75A                 |                |  | FGW 75N 60HD<br>FGW 75N 60HC <sup>1)</sup> |  | FGW 75N 65WE <sup>1)</sup>                 |   |  |
| <b>TO-247-4</b><br> | 60             | 40A  |  |  |  |   | FGZ 40N 120WE <sup>1)</sup>                  |
|                     | 50A            |  |  |  |  | FGZ 50N 65WD<br>FGZ 50N 65WE <sup>1)</sup>              |  |
|                     | 75A            |  |  |  |  | FGZ 75N 65WE <sup>1)</sup>                              |  |

1) With full rating free wheeling diode

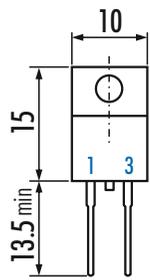
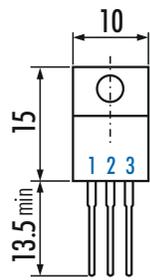
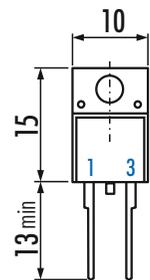
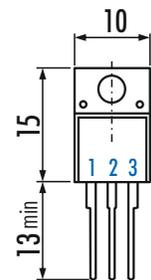
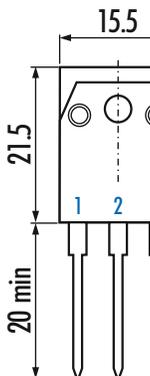
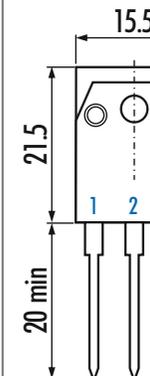
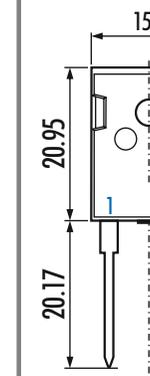
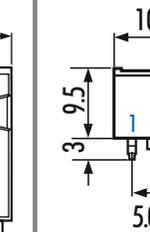
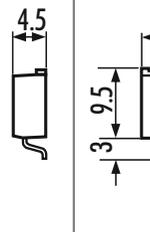
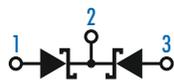
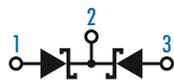
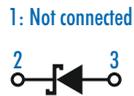
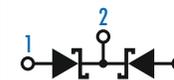
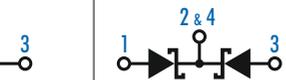
# Super-Junction MOSFET



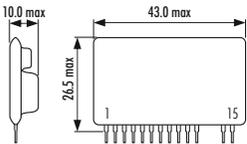
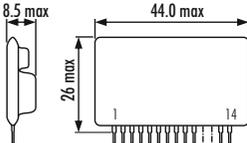
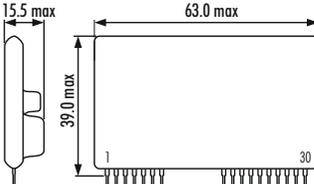
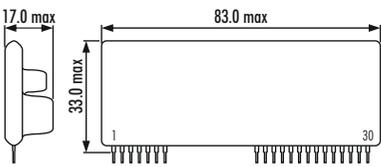
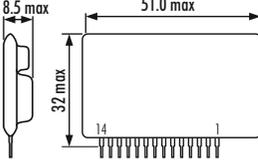
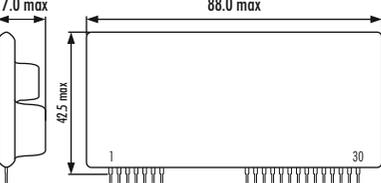
| $V_{DS}$ | $R_{DS(on),max}$   | $I_D$            | TO-247         | TO-3P(Q)         | TO-220           | TO-220F          | TO-252           |
|----------|--------------------|------------------|----------------|------------------|------------------|------------------|------------------|
| 600V     | 25.4 mΩ            | 95.5 A           | FMW 60N 025S2  |                  |                  |                  |                  |
|          | 40.0 mΩ            | 77.5 A           | FMW 60N 040S2  |                  |                  |                  |                  |
|          | 55.0 mΩ            | 66.4 A           | FMW 60N 055S2  |                  |                  |                  |                  |
|          | 70.0 mΩ            | 53.2 A           | FMW 60N 070S2  |                  |                  | FMV 60N 070S2    |                  |
|          | 79.0 mΩ            | 47.9 A           | FMW 60N 079S2  |                  | FMP 60N 079S2    | FMV 60N 079S2    |                  |
|          | 88.0 mΩ            | 42.3 A           | FMW 60N 088S2  |                  | FMP 60N 088S2    | FMV 60N 088S2    |                  |
|          | 99.0 mΩ            | 38.1 A           | FMW 60N 099S2  |                  | FMP 60N 099S2    | FMV 60N 099S2    |                  |
|          | 125.0 mΩ           | 30.1 A           | FMW 60N 125S2  |                  | FMP 60N 125S2    | FMV 60N 125S2    |                  |
|          | 160.0 mΩ           | 23.9 A           | FMW 60N 160S2  |                  | FMP 60N 160S2    | FMV 60N 160S2    |                  |
|          | 190.0 mΩ           | 20.0 A           | FMW 60N 190S2  | FMH 60N 190S2    | FMP 60N 190S2    | FMV 60N 190S2    |                  |
| 280.0 mΩ | 13.0 A             |                  | FMH 60N 280S2  | FMP 60N 280S2    | FMV 60N 280S2    | FMD 60N 280S2    |                  |
| 380.0 mΩ | 10.0 A             |                  |                | FMP 60N 380S2    | FMV 60N 380S2    | FMD 60N 380S2    |                  |
| 650V     | 37.0 mΩ            | 83.5 A           | FMW 65N 037S2* |                  |                  |                  |                  |
|          | 70.0 mΩ            | 53.6 A           | FMW 65N 070S2* |                  |                  | FMV 65N 070S2*   |                  |
|          | 92.0 mΩ            | 38.0 A           | FMW 65N 092S2* |                  | FMP 65N 092S2*   | FMV 65N 092S2*   |                  |
|          | 104.0 mΩ           | 31.3 A           | FMW 65N 104S2* |                  | FMP 65N 104S2*   | FMV 65N 104S2*   |                  |
| 600V     | With built-in FRED | 27.0 mΩ          | 95.5 A         | FMW 60N 027S2 FD |                  |                  |                  |
|          |                    | 43.0 mΩ          | 77.5 A         | FMW 60N 043S2 FD |                  |                  |                  |
|          |                    | 59.0 mΩ          | 66.4 A         | FMW 60N 059S2 FD |                  |                  |                  |
|          |                    | 75.0 mΩ          | 53.2 A         | FMW 60N 075S2 FD |                  |                  | FMV 60N 075S2 FD |
|          |                    | 84.0 mΩ          | 47.9 A         | FMW 60N 084S2 FD |                  | FMP 60N 084S2 FD | FMV 60N 084S2 FD |
|          |                    | 94.0 mΩ          | 42.3 A         | FMW 60N 094S2 FD |                  | FMP 60N 094S2 FD | FMV 60N 094S2 FD |
|          |                    | 105.0 mΩ         | 38.1 A         | FMW 60N 105S2 FD |                  | FMP 60N 105S2 FD | FMV 60N 105S2 FD |
|          |                    | 133.0 mΩ         | 30.1 A         | FMW 60N 133S2 FD |                  | FMP 60N 133S2 FD | FMV 60N 133S2 FD |
| 170.0 mΩ | 23.9 A             | FMW 60N 170S2 FD |                | FMP 60N 170S2 FD | FMV 60N 170S2 FD |                  |                  |

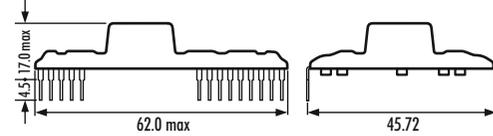
\*) Under development

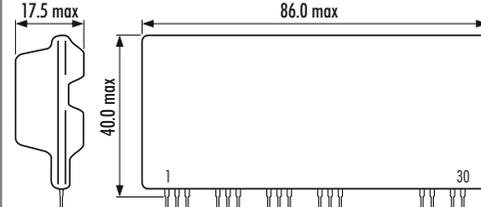
## SiC Schottky Barrier Diodes

|           |     | TO-220  |   | TO-220F (insulated)   |  | TO-247  |   | TO-247-2  | T-Pack S  |   |
|-----------|-----|---|---|---|--|---|---|---|---|---|
|           |     | Single  | Dual  | Single  | Dual   | Single  | Dual  | Single  | Single  | Dual  |
|           |     |  |  |  |   |  |  |  |  |  |
| $I_{FAV}$ |     |  |  |  |  |  |  |  |  |  |
| 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  |   | FDCW 18T 120  |   |   |
|           | 36A |   |   |   |  |   | FDCY 36C 120  |   |   |   |



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

| Dual IGBT-Drivers  |       | Type name   | $I_{peak}$ | $V_{iso,max}$ | $f_{max}$ |
|--|-------|-------------|------------|---------------|-----------|
|  <p>Built-in power supply &amp; Short circuit protection with adjustable fall-time and UVLO</p> | 1200V | VLA 567-01R | 8A         | 2.5kV         | 20kHz     |
|  | 1700V |             |            |               |           |
|  <p>Built-in power supply &amp; Short circuit protection</p>                                    | 1200V | VLA 536-01R | 5A         | 2.5kV         | 20kHz     |
|  | 1700V |             |            |               |           |
|  <p>Built-in power supply &amp; Short circuit protection</p>                                    | 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<br>Gate power supply for 3-Level IGBTs |

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


  
[www.igbt-driver.com](http://www.igbt-driver.com)



  
[www.agileswitch.com](http://www.agileswitch.com)


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