



IGBTモジュールの特長 Features of the IGBT Module

第6世代IGBTモジュール Vシリーズ 6th Gen. IGBT Module V-series

■特長 Features

パッケージ小型化と出力のパワー UP を実現！

- ・高性能、低損失な第六世代 IGBT チップ・FWD を使用
- ・ $T_j \text{ max } 175^\circ\text{C}$ 、連続動作保証 150°C

環境に優しいモジュール

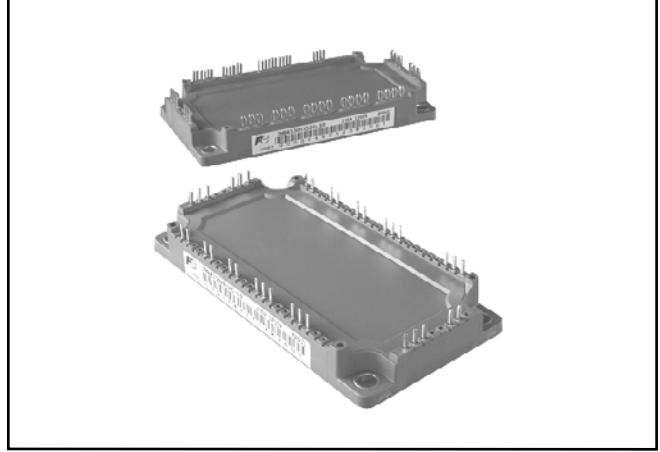
- ・豊富な組立性、ハンダレス組立への対応
- ・RoHS 対応

ターンオン特性

- ・ノイズー損失トレードオフの改善
- ・ dv/dt , dic/dt 低減によるノイズ・振動の抑制

ターンオフ特性

- ・ソフトスイッチング特性・ターンオフ振動の抑制



A compact design allows for greater power output

- ・High performance 6th gen. IGBT/FWD chipset
- ・ $T_j(\text{max.})=175^\circ\text{C}$, $T_j(\text{op})=150^\circ\text{C}$

Environmentally friendly modules

- ・Easy assemblage, solder free options
- ・RoHS compliant

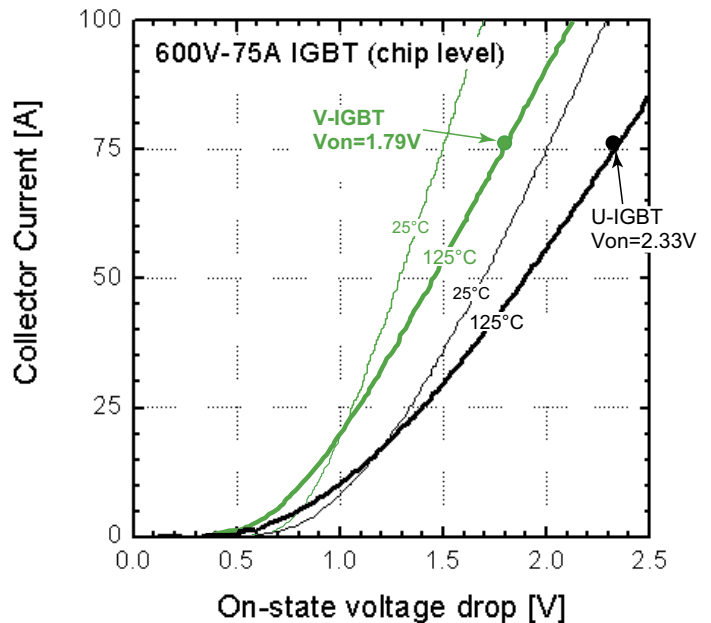
Turn-on switching characteristics

- ・Improved noise-loss trade-off
- ・Reduced turn-on dv/dt , excellent turn-on dic/dt

Turn-off switching characteristic

- ・Soft switching behavior, turn-off oscillation free

| 1200V | S-series | EP2 1200V-50A, EP3 -150A まで容量拡大 !! | |
|-------|----------|--|----------|
| 10A | EP2 | U, U4-series | V-series |
| 15A | | | |
| 25A | | EP2 | EP2XT |
| 35A | EP3 | | |
| 50A | | EP3 | |
| 75A | | | EP3XT |
| 100A | | EP2 : 107.5 x 45.4 x 17mm EP3 : 122.6 x 62.6 x 17mm | |
| 150A | | EP-XTは従来品とピン配置が異なる | |





IGBTモジュールVシリーズ IGBT Modules, V series

コンバータ部・ブレーキ部内蔵PIM Vシリーズ ECONOPIM™
PIM/Built-in converter and brake V series ECONOPIM™

| 型 式 Device type | インバータ部 Inverter [IGBT] | | | | ブレーキ部 Brake [IGBT+FWD] | | | コンバータ部 Converter [Diode] | | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|------------------------|----------------|----------------|----------------------|------------------------|----------------|------------------|--------------------------|----------------|-----------------|------------------|------------------|-------------------------|
| | V _{CES} | I _C | P _C | V _{CE(sat)} | V _{CES} | I _C | V _{RRM} | V _{RRM} | I _O | V _{FM} | I _{FSM} | | |
| | Volts | Cont. Amps. | Watts | Typ. Volts | Volts | Cont. Amps. | Volts | Volts | Cont. Amps. | Typ. Volts | Amps. | | |
| 7MBR50VP060-50 | 600 | 50 | 215 | 1.6 | 600 | 50 | 600 | 800 | 50 | 1.3 | 210 | M719 | 180 |
| 7MBR75VP060-50 | 600 | 75 | 300 | 1.6 | 600 | 50 | 600 | 800 | 75 | 1.25 | 500 | M719 | 180 |
| 7MBR100VP060-50 | 600 | 100 | 430 | 1.85 | 600 | 50 | 600 | 800 | 100 | 1.25 | 700 | M719 | 180 |
| 7MBR100VR060-50 | 600 | 100 | 335 | 1.6 | 600 | 50 | 600 | 800 | 100 | 1.25 | 700 | M720 | 300 |
| 7MBR150VR060-50 | 600 | 150 | 485 | 1.6 | 600 | 75 | 600 | 800 | 150 | 1.25 | 700 | M720 | 300 |
| 7MBR25VM120-50 | 1200 | 25 | 170 | 1.85 | 1200 | 25 | 1200 | 1600 | 25 | 1.4 | 155 | M719 | 180 |
| 7MBR35VM120-50 | 1200 | 35 | 210 | 1.85 | 1200 | 25 | 1200 | 1600 | 35 | 1.35 | 260 | M719 | 180 |
| 7MBR50VM120-50 | 1200 | 50 | 280 | 1.85 | 1200 | 35 | 1200 | 1600 | 50 | 1.35 | 360 | M719 | 180 |
| 7MBR50VN120-50 | 1200 | 50 | 280 | 1.85 | 1200 | 35 | 1200 | 1600 | 50 | 1.35 | 360 | M720 | 300 |
| 7MBR75VN120-50 | 1200 | 75 | 385 | 1.85 | 1200 | 50 | 1200 | 1600 | 75 | 1.4 | 520 | M720 | 300 |
| 7MBR100VN120-50 | 1200 | 100 | 520 | 1.85 | 1200 | 75 | 1200 | 1600 | 100 | 1.5 | 520 | M720 | 300 |
| 7MBR150VN120-50 | 1200 | 150 | 885 | 1.85 | 1200 | 100 | 1200 | 1600 | 150 | 1.4 | 780 | M720 | 300 |
| 7MBR25VP120-50 | 1200 | 25 | 170 | 1.85 | 1200 | 25 | 1200 | 1600 | 25 | 1.42 | 155 | M719 | 180 |
| 7MBR35VP120-50 | 1200 | 35 | 210 | 1.85 | 1200 | 25 | 1200 | 1600 | 35 | 1.35 | 260 | M719 | 180 |
| 7MBR50VP120-50 | 1200 | 50 | 280 | 1.85 | 1200 | 35 | 1200 | 1600 | 50 | 1.35 | 360 | M719 | 180 |
| 7MBR50VR120-50 | 1200 | 50 | 280 | 1.85 | 1200 | 35 | 1200 | 1600 | 50 | 1.35 | 360 | M720 | 300 |
| 7MBR75VR120-50 | 1200 | 75 | 385 | 1.85 | 1200 | 50 | 1200 | 1600 | 75 | 1.4 | 520 | M720 | 300 |
| 7MBR100VR120-50 | 1200 | 100 | 520 | 1.75 | 1200 | 75 | 1200 | 1600 | 100 | 1.5 | 520 | M720 | 300 |
| 7MBR150VR120-50 | 1200 | 150 | 885 | 1.85 | 1200 | 100 | 1200 | 1600 | 150 | 1.4 | 780 | M720 | 300 |

V_{CE(sat)}, V_{FM}: at T_J=25°C, Chip

600、1200Vクラス Vシリーズ 6個組 ECONOPACK™
600, 1200 volts class, 6 in one-package V series ECONOPACK™

| 型 式 Device type | V _{CES} | V _{GES} | I _C | P _C | V _{CE(sat)} (V _{GE} =15V) | | スイッチングタイム Switching time (Max.) | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|------------------|------------------|----------------|----------------|---|----------------|---------------------------------|-------|-------|------------------|-------------------------|
| | Volts | Volts | Cont. Amps. | Watts | Typ. | I _C | ton | toff | tf | | |
| | | | | | Volts | Amps. | µsec. | µsec. | µsec. | | |
| 6MBI75VA-060-50 | 600 | ±20 | 75 | 275 | 1.6 | 75 | 1.2 | 1.2 | 0.45 | M636 | 180 |
| 6MBI100VA-060-50 | 600 | ±20 | 100 | 335 | 1.6 | 100 | 1.2 | 1.2 | 0.45 | M636 | 180 |
| 6MBI150VB-060-50 | 600 | ±20 | 150 | 485 | 1.6 | 150 | 1.2 | 1.2 | 0.45 | M633 | 300 |
| 6MBI50VA-120-50 | 1200 | ±20 | 50 | 280 | 1.85 | 50 | 1.2 | 1.0 | 0.3 | M636 | 180 |
| 6MBI75VA-120-50 | 1200 | ±20 | 75 | 385 | 1.85 | 75 | 1.2 | 1.0 | 0.3 | M636 | 180 |
| 6MBI100VA-120-50 | 1200 | ±20 | 100 | 520 | 1.75 | 100 | 1.2 | 1.0 | 0.3 | M636 | 180 |
| 6MBI100VB-120-50 | 1200 | ±20 | 100 | 520 | 1.75 | 100 | 1.2 | 1.0 | 0.3 | M633 | 300 |
| 6MBI150VB-120-50 | 1200 | ±20 | 150 | 770 | 1.75 | 150 | 1.2 | 1.0 | 0.3 | M633 | 300 |
| 6MBI180VB-120-50 | 1200 | ±20 | 150 | 835 | 1.85 | 200 | 1.2 | 1.0 | 0.3 | M633 | 300 |
| ▲ 6MBI225V-120-50 | 1200 | ±20 | 225 | 1070 | 1.85 | 225 | 1.2 | 2.0 | 0.35 | M629 | 950 |
| ▲ 6MBI300V-120-50 | 1200 | ±20 | 300 | 1600 | 1.75 | 300 | 1.2 | 2.0 | 0.35 | M629 | 950 |
| ▲ 6MBI450V-120-50 | 1200 | ±20 | 450 | 2250 | 1.75 | 450 | 1.2 | 2.0 | 0.35 | M629 | 950 |
| ▲ 6MBI550V-120-50 | 1200 | ±20 | 550 | 2500 | 1.85 | 600 | 1.2 | 2.0 | 0.35 | M629 | 950 |

▲ 開発中 Under development

V_{CE(sat)}: at T_J=25°C, Chip

記号 Letter symbols

| | | | |
|---------------------------------|---|--------------------------------------|---|
| V _{CES} : コレクタ・エミッタ間電圧 | Collector-to-emitter rated voltage (Gate-to-emitter short-circuited) | P _C : 最大損失 | Maximum power dissipation |
| V _{GES} : ゲート・エミッタ間電圧 | Gate-to-emitter rated voltage (Collector-to-emitter short-circuited) | V _{CE(sat)} : コレクタ・エミッタ飽和電圧 | Collector-to-emitter saturation voltage |
| I _C : コレクタ電流 | Rated collector current | ton: ターンオン時間 | Turn-on time |
| | | toff: ターンオフ時間 | Turn-off time |
| | | tr: 立上り時間 | Fall time |

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パワーデバイス/Power Devices (IGBT)

1200、1700Vクラス Vシリーズ 2個組

1200, 1700 volts class, 2 in one-package V series

| 型式 Device type | V _{CES} Volts | V _{GES} Volts | I _C Cont. Amps. | P _C Watts | V _{CE(sat)} (V _{GE} =15V) | | スイッチングタイム Switching time (Max.) | | | パッケージ Package | 質量 Net mass Grams |
|-----------------------------|---------------------------|---------------------------|----------------------------------|-------------------------|---|-------------------------|---------------------------------|---------------------------|-------------------------|------------------|-------------------------|
| | | | | | Typ. Volts | I _C Amps. | t _{on} μsec. | t _{off} μsec. | t _f μsec. | | |
| 2MBI225VN-120-50 | 1200 | ±20 | 225 | 1070 | 1.85 | 225 | 1.2 | 2.0 | 0.35 | M254 | 300 |
| 2MBI300VN-120-50 | 1200 | ±20 | 300 | 1595 | 1.75 | 300 | 1.2 | 2.0 | 0.35 | M254 | 300 |
| 2MBI450VN-120-50 | 1200 | ±20 | 450 | 2270 | 1.75 | 450 | 1.2 | 2.0 | 0.35 | M254 | 300 |
| 2MBI600VN-120-50 | 1200 | ±20 | 600 | 3750 | 1.85 | 600 | 1.2 | 2.0 | 0.35 | M254 | 300 |
| ▲ 2MBI225VJ-120-50 | 1200 | ±20 | 225 | 1070 | 1.85 | 225 | 1.2 | 2.0 | 0.35 | M260 | 300 |
| ▲ 2MBI300VJ-120-50 | 1200 | ±20 | 300 | 1595 | 1.75 | 300 | 1.2 | 2.0 | 0.35 | M260 | 300 |
| ▲ 2MBI450VJ-120-50 | 1200 | ±20 | 450 | 2270 | 1.75 | 450 | 1.2 | 2.0 | 0.35 | M260 | 300 |
| ▲ 2MBI600VJ-120-50 | 1200 | ±20 | 600 | 3750 | 1.85 | 600 | 1.2 | 2.0 | 0.35 | M260 | 300 |
| ▲ 2MBI600VXA-120-50 | 1200 | ±20 | 600 | 3350 | 1.88 | 600 | 2.0 | 2.0 | 0.2 | M271 | 850 |
| ▲ 2MBI900VXA-120-50 | 1200 | ±20 | 900 | 5100 | 1.97 | 900 | 2.0 | 2.0 | 0.2 | M271 | 850 |
| ▲ 2MBI1400VXB-120-50 | 1200 | ±20 | 1400 | 7650 | 1.98 | 1400 | 2.0 | 2.0 | 0.2 | M272 | 1250 |
| ▲ 2MBI650VXA-170-50 | 1200 | ±20 | 650 | 4150 | 2.05 | 650 | 2.0 | 3.0 | 0.2 | M271 | 850 |
| ▲ 2MBI1000VXB-170-50 | 1200 | ±20 | 1000 | 6250 | 2.25 | 1000 | 2.0 | 3.0 | 0.2 | M272 | 1250 |

▲ 開発中 Under development

V_{CE(sat)}: at T_j=25°C, Chip

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IGBTモジュール Uシリーズ IGBT Modules, U series

コンバータ部・ブレーキ部内蔵PIM Uシリーズ ECONOPIM™
PIM/Built-in converter and brake U series ECONOPIM™

| 型 式 Device type | インバータ部 Inverter [IGBT] | | | | ブレーキ部 Brake [IGBT+FWD] | | | コンバータ部 Converter [Diode] | | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|------------------------|----------------|----------------|----------------------|------------------------|----------------|------------------|--------------------------|----------------|-----------------|------------------|------------------|-------------------------|
| | V _{CES} | I _C | P _C | V _{CE(sat)} | V _{CES} | I _C | V _{RRM} | V _{RRM} | I _O | V _{FM} | I _{FSM} | | |
| | Volts | Amps. | Watts | Max. Volts | Volts | Amps. | Volts | Volts | Amps. | Volts | Amps. | | |
| 7MBR30U2A060 | 600 | 30 | 133 | 2.4 | 600 | 20 | 600 | 800 | 30 | 1.5 | 210 | M711 | 180 |
| 7MBR50U2A060 | 600 | 50 | 187 | 2.55 | 600 | 20 | 600 | 800 | 50 | 1.5 | 350 | M711 | 180 |
| 7MBR75U2B060 | 600 | 75 | 255 | 2.5 | 600 | 30 | 600 | 800 | 75 | 1.5 | 525 | M712 | 300 |
| 7MBR100U2B060 | 600 | 100 | 378 | 2.6 | 600 | 50 | 600 | 800 | 100 | 1.5 | 700 | M712 | 300 |
| 7MBR25UA120 | 1200 | 25 | 115 | 2.8 | 1200 | 25 | 1200 | 1600 | 25 | 1.5 | 260 | M711 | 180 |
| 7MBR35UA120 | 1200 | 35 | 160 | 2.7 | 1200 | 25 | 1200 | 1600 | 35 | 1.7 | 260 | M711 | 180 |
| 7MBR35UB120 | 1200 | 35 | 160 | 2.6 | 1200 | 25 | 1200 | 1600 | 35 | 1.5 | 360 | M712 | 300 |
| 7MBR50UA120 | 1200 | 50 | 205 | 2.8 | 1200 | 25 | 1200 | 1600 | 50 | 1.9 | 260 | M711 | 180 |
| 7MBR50UB120 | 1200 | 50 | 205 | 2.65 | 1200 | 35 | 1200 | 1600 | 50 | 1.5 | 520 | M712 | 300 |
| 7MBR75U4B120 | 1200 | 75 | 275 | 2.8 | 1200 | 35 | 1200 | 1600 | 75 | 1.75 | 520 | M712 | 300 |
| 7MBR100U4B120 | 1200 | 100 | 390 | 2.85 | 1200 | 50 | 1200 | 1600 | 100 | 1.9 | 520 | M712 | 300 |

600、1200、1700V クラス Uシリーズ 6個組 ECONOPACK™、ECONOPACK™+
600, 1200, 1700 volts class, 6 in one-package U series ECONOPACK™ and ECONOPACK™+

| 型 式 Device type | V _{CES} | V _{GES} | I _C | P _C | V _{CE(sat)} (V _{GE} =15V) | | スイッチングタイム Switching time (Max.) | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|------------------|------------------|----------------|----------------|---|----------------|---------------------------------|-------|-------|------------------|-------------------------|
| | Volts | Volts | Amps. | Watts | Max. | I _C | ton | toff | tf | | |
| | | | | | Volts | Amps. | μsec. | μsec. | μsec. | | |
| 6MBI75U2A-060 | 600 | ±20 | 75 | 255 | 2.1 | 75 | 1.2 | 1.2 | 0.45 | M636 | 180 |
| 6MBI100U2B-060 | 600 | ±20 | 100 | 380 | 2.1 | 100 | 1.2 | 1.2 | 0.45 | M633 | 300 |
| 6MBI150U2B-060 | 600 | ±20 | 150 | 500 | 2.1 | 150 | 1.2 | 1.2 | 0.45 | M633 | 300 |
| 6MBI35U4A-120 | 1200 | ±20 | 35 | 205 | 2.05 | 35 | 1.2 | 1.0 | 0.3 | M636 | 180 |
| 6MBI50U4A-120 | 1200 | ±20 | 50 | 275 | 2.05 | 50 | 1.2 | 1.0 | 0.3 | M636 | 180 |
| 6MBI75U4A-120 | 1200 | ±20 | 75 | 390 | 2.05 | 75 | 1.2 | 1.0 | 0.3 | M636 | 180 |
| 6MBI75U4B-120 | 1200 | ±20 | 75 | 390 | 2.05 | 75 | 1.2 | 1.0 | 0.3 | M633 | 300 |
| 6MBI100U4B-120 | 1200 | ±20 | 100 | 520 | 2.05 | 100 | 1.2 | 1.0 | 0.3 | M633 | 300 |
| 6MBI150U4B-120 | 1200 | ±20 | 150 | 735 | 2.05 | 150 | 1.2 | 1.0 | 0.3 | M633 | 300 |
| 6MBI225U4-120 | 1200 | ±20 | 225 | 1040 | 2.05 | 225 | 1.2 | 1.0 | 0.3 | M629 | 950 |
| 6MBI300U4-120 | 1200 | ±20 | 300 | 1385 | 2.05 | 300 | 1.2 | 1.0 | 0.3 | M629 | 950 |
| 6MBI450U4-120 | 1200 | ±20 | 450 | 2080 | 2.05 | 450 | 1.2 | 1.0 | 0.3 | M629 | 950 |
| 6MBI100U4B-170 | 1700 | ±20 | 100 | 520 | 2.4 | 100 | 1.2 | 1.5 | 0.3 | M633 | 300 |
| 6MBI150U4B-170 | 1700 | ±20 | 150 | 735 | 2.4 | 150 | 1.2 | 1.5 | 0.3 | M633 | 300 |
| 6MBI225U4-170 | 1700 | ±20 | 225 | 1040 | 2.4 | 225 | 1.2 | 1.5 | 0.3 | M629 | 950 |
| 6MBI300U4-170 | 1700 | ±20 | 300 | 1385 | 2.4 | 300 | 1.2 | 1.5 | 0.3 | M629 | 950 |
| 6MBI450U4-170 | 1700 | ±20 | 450 | 2080 | 2.4 | 450 | 1.2 | 1.5 | 0.3 | M629 | 950 |

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IGBTモジュール Uシリーズ IGBT Modules, U series

600、1200、1700V クラス 2個組 Uシリーズ
600, 1200, 1700 volts class, 2 in one-package U series

| 型 式 Device type | V _{CES} Volts | V _{GES} Volts | I _C Cont. Amps. | P _C Watts | V _{CE(sat)} (V _{GE} =15V) | | スイッチングタイム Switching time (Max.) | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|---------------------------|---------------------------|----------------------------------|-------------------------|---|-------------------------|---------------------------------|---------------|-------------|------------------|-------------------------|
| | | | | | Max. Volts | I _C Amps. | ton µsec. | toff µsec. | tf µsec. | | |
| 2MBI150U2A-060 | 600 | ±20 | 150 | 500 | 2.1 | 150 | 1.2 | 1.2 | 0.45 | M232 | 180 |
| 2MBI200U2A-060 | 600 | ±20 | 200 | 660 | 2.1 | 200 | 1.2 | 1.2 | 0.45 | M232 | 180 |
| 2MBI300U2B-060 | 600 | ±20 | 300 | 1000 | 2.1 | 300 | 1.2 | 1.2 | 0.45 | M233 | 240 |
| 2MBI400U2B-060 | 650 | ±20 | 400 | 1250 | 2.1 | 400 | 1.2 | 1.2 | 0.45 | M233 | 240 |
| 2MBI600U2E-060 | 650 | ±20 | 600 | 2400 | 2.1 | 600 | 1.2 | 1.2 | 0.45 | M247 | 470 |
| 2MBI75U4A-120 | 1200 | ±20 | 75 | 400 | 2.05 | 75 | 1.2 | 1.0 | 0.3 | M232 | 180 |
| 2MBI100U4A-120 | 1200 | ±20 | 100 | 540 | 2.05 | 100 | 1.2 | 1.0 | 0.3 | M232 | 180 |
| 2MBI150U4A-120 | 1200 | ±20 | 150 | 735 | 2.05 | 150 | 1.2 | 1.0 | 0.3 | M232 | 180 |
| 2MBI150U4B-120 | 1200 | ±20 | 150 | 780 | 2.05 | 150 | 1.2 | 1.0 | 0.3 | M233 | 240 |
| 2MBI200U4B-120 | 1200 | ±20 | 200 | 1040 | 2.05 | 200 | 1.2 | 1.0 | 0.3 | M233 | 240 |
| 2MBI200U4D-120 | 1200 | ±20 | 200 | 1040 | 2.05 | 200 | 1.2 | 1.0 | 0.3 | M235 | 240 |
| 2MBI200U4H-120 | 1200 | ±20 | 200 | 1040 | 2.05 | 200 | 1.2 | 1.0 | 0.3 | M249 | 240 |
| 2MBI225U4N-120-50 | 1200 | ±20 | 225 | 1040 | 2.05 | 225 | 1.2 | 1.0 | 0.3 | M254 | 350 |
| 2MBI225U4J-120-50 | 1200 | ±20 | 225 | 1040 | 2.05 | 225 | 1.2 | 1.0 | 0.3 | M250 | 360 |
| 2MBI300U4D-120 | 1200 | ±20 | 300 | 1470 | 2.05 | 300 | 1.2 | 1.0 | 0.3 | M235 | 370 |
| 2MBI300U4E-120 | 1200 | ±20 | 300 | 1810 | 2.05 | 300 | 1.2 | 1.0 | 0.3 | M247 | 470 |
| 2MBI300U4H-120 | 1200 | ±20 | 300 | 1470 | 2.05 | 300 | 1.2 | 1.0 | 0.3 | M249 | 240 |
| 2MBI300U4N-120-50 | 1200 | ±20 | 300 | 1385 | 2.05 | 300 | 1.2 | 1.0 | 0.3 | M254 | 350 |
| 2MBI300U4J-120-50 | 1200 | ±20 | 300 | 1385 | 2.05 | 300 | 1.2 | 1.0 | 0.3 | M250 | 360 |
| 2MBI400U4H-120 | 1200 | ±20 | 400 | 2045 | 2.05 | 400 | 1.2 | 1.0 | 0.3 | M249 | 240 |
| 2MBI450U4E-120 | 1200 | ±20 | 450 | 2715 | 2.05 | 450 | 1.2 | 1.0 | 0.3 | M247 | 470 |
| 2MBI450U4N-120-50 | 1200 | ±20 | 450 | 2080 | 2.05 | 450 | 1.2 | 1.0 | 0.3 | M254 | 350 |
| 2MBI450U4J-120-50 | 1200 | ±20 | 450 | 2080 | 2.05 | 450 | 1.2 | 1.0 | 0.3 | M250 | 360 |
| 2MBI600U4G-120 | 1200 | ±20 | 600 | 2840 | 2.05 | 600 | 1.35 | 0.8 | 0.2 | M256 | 1500 |
| 2MBI800U4G-120 | 1200 | ±20 | 800 | 3900 | 2.05 | 800 | 1.35 | 0.8 | 0.2 | M256 | 1500 |
| 2MBI1200U4G-120 | 1200 | ±20 | 1200 | 4960 | 2.05 | 1200 | 1.35 | 0.8 | 0.2 | M256 | 1500 |
| 2MBI100U4H-170 | 1700 | ±20 | 100 | 540 | 2.4 | 100 | 1.2 | 1.5 | 0.3 | M249 | 240 |
| 2MBI150U4H-170 | 1700 | ±20 | 150 | 780 | 2.4 | 150 | 1.2 | 1.5 | 0.3 | M249 | 240 |
| 2MBI200U4H-170 | 1700 | ±20 | 200 | 1040 | 2.4 | 200 | 1.2 | 1.5 | 0.3 | M249 | 240 |
| 2MBI300U4H-170 | 1700 | ±20 | 300 | 1470 | 2.4 | 300 | 1.2 | 1.5 | 0.3 | M249 | 240 |
| 2MBI400U4H-170 | 1700 | ±20 | 400 | 2045 | 2.4 | 400 | 1.2 | 1.5 | 0.3 | M249 | 240 |
| 2MBI600U4G-170 | 1700 | ±20 | 600 | 2840 | 2.4 | 600 | 4.0 | 2.0 | 0.7 | M256 | 1500 |
| 2MBI800U4G-170 | 1700 | ±20 | 800 | 3900 | 2.4 | 800 | 4.0 | 2.0 | 0.7 | M256 | 1500 |
| 2MBI1200U4G-170 | 1700 | ±20 | 1200 | 4960 | 2.4 | 1200 | 4.0 | 2.0 | 0.7 | M256 | 1500 |

1200、1700V クラス Uシリーズ 1個組
1200, 1700 volts class, 1 in one-package U series

| 型 式 Device type | V _{CES} Volts | V _{GES} Volts | I _C Cont. Amps. | P _C Watts | V _{CE(sat)} (V _{GE} =15V) | | スイッチングタイム Switching time (Max.) | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|---------------------------|---------------------------|----------------------------------|-------------------------|---|-------------------------|---------------------------------|---------------|-------------|------------------|-------------------------|
| | | | | | Max. Volts | I _C Amps. | ton µsec. | toff µsec. | tf µsec. | | |
| 1MBI300U4-120 | 1200 | ±20 | 300 | 1540 | 2.05 | 300 | 1.2 | 1.0 | 0.3 | M127 | 380 |
| 1MBI400U4-120 | 1200 | ±20 | 400 | 2155 | 2.05 | 400 | 1.2 | 1.0 | 0.3 | M127 | 380 |
| 1MBI600U4-120 | 1200 | ±20 | 600 | 2905 | 2.05 | 600 | 1.2 | 1.0 | 0.3 | M127 | 380 |
| 1MBI600U4B-120 | 1200 | ±20 | 600 | 3570 | 2.05 | 600 | 1.2 | 1.0 | 0.3 | M138 | 530 |
| 1MBI800U4B-120 | 1200 | ±20 | 800 | 4805 | 2.05 | 800 | 1.2 | 1.0 | 0.3 | M138 | 530 |
| 1MBI1200U4C-120 | 1200 | ±20 | 1200 | 5680 | 2.05 | 1200 | 2.0 | 1.6 | 0.4 | M151 | 1500 |
| 1MBI1600U4C-120 | 1200 | ±20 | 1600 | 7810 | 2.05 | 1600 | 2.0 | 1.6 | 0.4 | M151 | 1500 |
| 1MBI2400U4D-120 | 1200 | ±20 | 2400 | 10000 | 2.05 | 2400 | 2.0 | 1.6 | 0.4 | M152 | 2300 |
| 1MBI3600U4D-120 | 1200 | ±20 | 3600 | 15620 | 2.05 | 3600 | 2.0 | 1.6 | 0.4 | M152 | 2300 |
| 1MBI1200U4C-170 | 1700 | ±20 | 1200 | 5680 | 2.4 | 1200 | 4.0 | 2.0 | 0.7 | M151 | 1500 |
| 1MBI1600U4C-170 | 1700 | ±20 | 1600 | 7810 | 2.4 | 1600 | 4.0 | 2.0 | 0.7 | M151 | 1500 |
| 1MBI2400U4D-170 | 1700 | ±20 | 2400 | 10000 | 2.4 | 2400 | 4.0 | 2.0 | 0.7 | M152 | 2300 |
| 1MBI3600U4D-170 | 1700 | ±20 | 3600 | 15620 | 2.4 | 3600 | 4.0 | 2.0 | 0.7 | M152 | 2300 |



■ IGBTモジュール Tシリーズ IGBT Modules, T series

600Vクラス 4個組 Tシリーズ
600 volts class, 4 in one-package T series

| 型 式 Device type | V _{CES} Volts | V _{GES} Volts | I _C Cont. Amps. | P _C Watts | V _{CE(sat)} (V _{GE} =15V) | | スイッチングタイム Switching time (Max.) | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|---------------------------|---------------------------|----------------------------------|-------------------------|---|-------------------------|---------------------------------|---------------|-------------|------------------|-------------------------|
| | | | | | Max. Volts | I _C Amps. | ton μsec. | toff μsec. | tf μsec. | | |
| 4MBI75T-060 | 600 | ±20 | 75 | 178 | 2.3 | 75 | 1.2 | 1.2 | 0.45 | M711 | 180 |
| 4MBI100T-060 | 600 | ±20 | 100 | 310 | 2.2 | 100 | 1.2 | 1.2 | 0.45 | M711 | 180 |
| 4MBI150T-060 | 600 | ±20 | 150 | 430 | 2.2 | 150 | 1.2 | 1.2 | 0.45 | M712 | 300 |
| 4MBI200T-060 | 600 | ±20 | 200 | 540 | 2.3 | 200 | 1.2 | 1.2 | 0.45 | M712 | 300 |

■ IGBTモジュール Sシリーズ IGBT Modules, S series

コンバータ部・ブレーキ部内蔵PIM Sシリーズ ECONOPIM™
PIM/Built-in converter and brake S series ECONOPIM™

| 型 式 Device type | インバータ部 Inverter [IGBT] | | | | ブレーキ部 Brake [IGBT+FWD] | | | コンバータ部 Converter [Diode] | | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|------------------------|----------------|----------------|----------------------|------------------------|----------------|------------------|--------------------------|----------------|-----------------|------------------|------------------|-------------------------|
| | V _{CES} | I _C | P _C | V _{CE(sat)} | V _{CES} | I _C | V _{RRM} | V _{RRM} | I _O | V _{FM} | I _{FSM} | | |
| | Volts | Cont. Amps. | Watts | Max. Volts | Volts | Cont. Amps. | Volts | Volts | Cont. Amps. | Max. Volts | Amps. | | |
| 7MBR30SA060 | 600 | 30 | 120 | 2.40 | 600 | 20 | 600 | 800 | 30 | 1.5 | 210 | M711 | 180 |
| 7MBR50SA060 | 600 | 50 | 200 | 2.40 | 600 | 30 | 600 | 800 | 50 | 1.5 | 350 | M711 | 180 |
| 7MBR50SB060 | 600 | 50 | 200 | 2.40 | 600 | 30 | 600 | 800 | 50 | 1.5 | 350 | M712 | 300 |
| 7MBR75SB060 | 600 | 75 | 300 | 2.55 | 600 | 50 | 600 | 800 | 75 | 1.5 | 525 | M712 | 300 |
| 7MBR100SB060 | 600 | 100 | 400 | 2.60 | 600 | 50 | 600 | 800 | 100 | 1.5 | 700 | M712 | 300 |
| 7MBR10SA120 | 1200 | 10 | 75 | 2.60 | 1200 | 10 | 1200 | 1600 | 10 | 1.5 | 105 | M711 | 180 |
| 7MBR15SA120 | 1200 | 15 | 110 | 2.60 | 1200 | 15 | 1200 | 1600 | 15 | 1.5 | 155 | M711 | 180 |
| 7MBR25SA120 | 1200 | 25 | 180 | 2.60 | 1200 | 15 | 1200 | 1600 | 25 | 1.5 | 260 | M711 | 180 |
| 7MBR35SB120 | 1200 | 35 | 240 | 2.70 | 1200 | 25 | 1200 | 1600 | 35 | 1.5 | 360 | M712 | 300 |
| 7MBR50SB120 | 1200 | 50 | 360 | 2.70 | 1200 | 25 | 1200 | 1600 | 50 | 1.5 | 520 | M712 | 300 |
| 7MBR10SA140 | 1400 | 10 | 75 | 2.70 | 1400 | 10 | 1400 | 1600 | 10 | 1.5 | 105 | M711 | 180 |
| 7MBR15SA140 | 1400 | 15 | 110 | 2.70 | 1400 | 15 | 1400 | 1600 | 15 | 1.5 | 155 | M711 | 180 |
| 7MBR25SA140 | 1400 | 25 | 180 | 2.70 | 1400 | 15 | 1400 | 1600 | 25 | 1.5 | 260 | M711 | 180 |
| 7MBR35SB140 | 1400 | 35 | 240 | 2.70 | 1400 | 25 | 1400 | 1600 | 35 | 1.5 | 360 | M712 | 300 |
| 7MBR50SB140 | 1400 | 50 | 360 | 2.80 | 1400 | 20 | 1400 | 1600 | 50 | 1.5 | 520 | M712 | 300 |

注: ECONOPIM™ は Infineon Technology 社の登録商標です。

Note: ECONOPIM™ is a registered trademark of Infineon Technology AG, Germany.

サイリスタ付 コンバータ部・ブレーキ部内蔵PIM Sシリーズ
PIM/Built-in converter with thyristor and brake S series

| 型 式 Device type | V _{CES} Volts | V _{GES} Volts | I _C Cont. Amps. | P _C Watts | V _{CE(sat)} (V _{GE} =15V) | | スイッチングタイム Switching time (Max.) | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|---------------------------|---------------------------|----------------------------------|-------------------------|---|-------------------------|---------------------------------|---------------|-------------|------------------|-------------------------|
| | | | | | Max. Volts | I _C Amps. | ton μsec. | toff μsec. | tf μsec. | | |
| 7MBR20SC060 | 600 | ±20 | 20 | 69 | 2.4 | 20 | 1.2 | 1.0 | 0.35 | M713 | 210 |
| 7MBR30SC060 | 600 | ±20 | 30 | 120 | 2.4 | 30 | 1.2 | 1.0 | 0.35 | M713 | 210 |
| 7MBR50SC060 | 600 | ±20 | 50 | 200 | 2.4 | 50 | 1.2 | 1.0 | 0.35 | M713 | 210 |
| 7MBR75SD060 | 600 | ±20 | 75 | 300 | 2.55 | 75 | 1.2 | 1.0 | 0.35 | M714 | 340 |
| 7MBR100SD060 | 600 | ±20 | 100 | 400 | 2.6 | 100 | 1.2 | 1.0 | 0.35 | M714 | 340 |
| 7MBR10SC120 | 1200 | ±20 | 10 | 75 | 2.6 | 10 | 1.2 | 1.0 | 0.3 | M713 | 210 |
| 7MBR15SC120 | 1200 | ±20 | 15 | 110 | 2.6 | 15 | 1.2 | 1.0 | 0.3 | M713 | 210 |
| 7MBR25SC120 | 1200 | ±20 | 25 | 180 | 2.6 | 25 | 1.2 | 1.0 | 0.3 | M713 | 210 |
| 7MBR35SD120 | 1200 | ±20 | 35 | 240 | 2.7 | 35 | 1.2 | 1.0 | 0.3 | M714 | 340 |
| 7MBR50SD120 | 1200 | ±20 | 50 | 360 | 2.7 | 50 | 1.2 | 1.0 | 0.3 | M714 | 340 |



IGBTモジュール Sシリーズ IGBT Modules, S series

600V、1200V、1400Vクラス 6個組 Sシリーズ ECONOPACK™

600V, 1200, 1400 volts class, 6 in one-package S series ECONOPACK™

| 型 式 Device type | V _{CES} Volts | V _{GES} Volts | I _C Cont. Amps. | P _C Watts | V _{CE(sat)} (V _{GE} =15V) | | スイッチングタイム Switching time (Max.) | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|---------------------------|---------------------------|----------------------------------|-------------------------|---|-------------------------|---------------------------------|---------------|-------------|------------------|-------------------------|
| | | | | | Max. Volts | I _C Amps. | ton μsec. | toff μsec. | tf μsec. | | |
| 6MBI75S-060 | 600 | ±20 | 75 | 300 | 2.55 | 75 | 1.2 | 1.0 | 0.35 | M626 | 300 |
| 6MBI100S-060 | 600 | ±20 | 100 | 400 | 2.6 | 100 | 1.2 | 1.0 | 0.35 | M626 | 300 |
| 6MBI10S-120 | 1200 | ±20 | 10 | 75 | 2.60 | 10 | 1.2 | 1.0 | 0.3 | M623 | 180 |
| 6MBI15S-120 | 1200 | ±20 | 15 | 110 | 2.60 | 15 | 1.2 | 1.0 | 0.3 | M623 | 180 |
| 6MBI25S-120 | 1200 | ±20 | 25 | 180 | 2.60 | 25 | 1.2 | 1.0 | 0.3 | M623 | 180 |
| 6MBI35S-120 | 1200 | ±20 | 35 | 240 | 2.60 | 35 | 1.2 | 1.0 | 0.3 | M623 | 180 |
| 6MBI50S-120 | 1200 | ±20 | 50 | 360 | 2.60 | 50 | 1.2 | 1.0 | 0.3 | M623 | 180 |
| 6MBI75S-120 | 1200 | ±20 | 75 | 520 | 2.60 | 75 | 1.2 | 1.0 | 0.3 | M626 | 300 |
| 6MBI100S-120 | 1200 | ±20 | 100 | 700 | 2.60 | 100 | 1.2 | 1.0 | 0.3 | M626 | 300 |
| 6MBI35S-140 | 1400 | ±20 | 35 | 240 | 2.75 | 35 | 1.2 | 1.0 | 0.3 | M623 | 180 |
| 6MBI50S-140 | 1400 | ±20 | 50 | 360 | 2.75 | 50 | 1.2 | 1.0 | 0.3 | M623 | 180 |
| 6MBI75S-140 | 1400 | ±20 | 75 | 520 | 2.70 | 75 | 1.2 | 1.0 | 0.3 | M626 | 300 |
| 6MBI100S-140 | 1400 | ±20 | 100 | 700 | 2.70 | 100 | 1.2 | 1.0 | 0.3 | M626 | 300 |

注：ECONOPACK™ は Infineon Technology 社の登録商標です。

Note: ECONOPACK™ is a registered trademark of Infineon Technology AG, Germany.

1200Vクラス 2個組、1個組 Sシリーズ

1200 volts class, 2 in one-package and 1 in one-package S series

| 型 式 Device type | V _{CES} Volts | V _{GES} Volts | I _C Cont. Amps. | P _C Watts | V _{CE(sat)} (V _{GE} =15V) | | スイッチングタイム Switching time (Max.) | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|---------------------------|---------------------------|----------------------------------|-------------------------|---|-------------------------|---------------------------------|---------------|-------------|------------------|-------------------------|
| | | | | | Max. Volts | I _C Amps. | ton μsec. | toff μsec. | tf μsec. | | |
| 2MBI100SC-120 | 1200 | ±20 | 100 | 780 | 2.60 | 100 | 1.2 | 1.0 | 0.3 | M233 | 240 |
| 2MBI150SC-120 | 1200 | ±20 | 150 | 1000 | 2.60 | 150 | 1.2 | 1.0 | 0.3 | M233 | 240 |
| 2MBI200S-120 | 1200 | ±20 | 200 | 1500 | 2.60 | 200 | 1.2 | 1.0 | 0.3 | M234 | 370 |
| 2MBI300S-120 | 1200 | ±20 | 300 | 2500 | 2.60 | 300 | 1.2 | 1.0 | 0.3 | M238 | 470 |
| 1MBI300S-120 | 1200 | ±20 | 300 | 2100 | 2.60 | 300 | 1.2 | 1.0 | 0.3 | M127 | 380 |
| 1MBI400S-120 | 1200 | ±20 | 400 | 3100 | 2.60 | 400 | 1.2 | 1.0 | 0.3 | M127 | 380 |

IGBTモジュール Pシリーズ IGBT Modules, P series

1200V、1400Vクラス 高速スイッチング、低ノイズ形

1200, 1400 volts class/High speed switching and low noise

| 型 式 Device type | V _{CES} Volts | V _{GES} Volts | I _C Cont. Amps. | P _C Watts | V _{CE(sat)} (V _{GE} =15V) | | スイッチングタイム Switching time (Max.) | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|---------------------------|---------------------------|----------------------------------|-------------------------|---|-------------------------|---------------------------------|---------------|-------------|------------------|-------------------------|
| | | | | | Max. Volts | I _C Amps. | ton μsec. | toff μsec. | tf μsec. | | |
| 2MBI50P-140 | 1400 | ±20 | 50 | 400 | 3.0 | 50 | 1.2 | 1.0 | 0.3 | M232 | 180 |
| 2MBI75P-140 | 1400 | ±20 | 75 | 600 | 3.0 | 75 | 1.2 | 1.0 | 0.3 | M232 | 180 |
| 2MBI100PC-140 | 1400 | ±20 | 100 | 780 | 3.0 | 100 | 1.2 | 1.0 | 0.3 | M233 | 240 |
| 2MBI150PC-140 | 1400 | ±20 | 150 | 1100 | 3.0 | 150 | 1.2 | 1.0 | 0.3 | M233 | 240 |
| 2MBI200PB-140 | 1400 | ±20 | 200 | 1500 | 3.0 | 200 | 1.2 | 1.0 | 0.3 | M235 | 370 |
| 2MBI300P-140 | 1400 | ±20 | 300 | 2500 | 3.0 | 300 | 1.2 | 1.0 | 0.3 | M238 | 470 |
| 1MBI600PX-120 | 1200 | ±20 | 600 | 4100 | 3.2 | 600 | 1.2 | 1.0 | 0.3 | M138 | 530 |
| 1MBI600PX-140 | 1400 | ±20 | 600 | 4100 | 3.2 | 600 | 1.2 | 1.0 | 0.3 | M138 | 530 |



U-IPMシリーズ U-IPM series (Intelligent Power Modules)

1200Vクラス オールシリコン形 IPM 下アームアラーム機能付
1200 volts class/All-silicon IPM with N-side alarm function

| 型 式 Device type | インバータ部 Inverter | | | ブレーキ部 Brake | | 制御部 Control | | | | | | パッケージ 質量 | |
|--------------------|------------------|----------------|----------------------|------------------|----------------|-----------------|-----------------------|-----------------|------------------|------------------|--------|----------|----------|
| | V _{CES} | I _C | V _{CE(sat)} | V _{CES} | I _C | V _{CC} | I _{OC} [INV] | V _{UV} | T _{COH} | T _{JOH} | Alarm | Package | Net mass |
| | Volts | Amps. | Max. Volts | Volts | Cont. Amps. | Typ. Volts | Min. Amps. | Volts | Min. °C | Min. °C | | | Grams |
| 6MBP25RU2A120 | 1200 | 25 | 2.2 | - | - | 15 | 38 | 11.0 to 12.5 | 110 | 150 | N-side | P610 | 440 |
| 6MBP50RU2A120 | 1200 | 50 | 2.2 | - | - | 15 | 75 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 6MBP75RU2A120 | 1200 | 75 | 2.2 | - | - | 15 | 113 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 7MBP25RU2A120 | 1200 | 25 | 2.2 | 1200 | 25 | 15 | 38 | 11.0 to 12.5 | 110 | 150 | N-side | P610 | 440 |
| 7MBP50RU2A120 | 1200 | 50 | 2.2 | 1200 | 25 | 15 | 75 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 7MBP75RU2A120 | 1200 | 75 | 2.2 | 1200 | 50 | 15 | 113 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |

Econo IPMシリーズ Econo IPM series (Intelligent Power Modules)

600V、1200Vクラス オールシリコン形 IPM 上下アームアラーム機能付
600, 1200 volts class/All-silicon IPM with P and N-side alarm function

| 型 式 Device type | インバータ部 Inverter | | | ブレーキ部 Brake | | 制御部 Control | | | | | | パッケージ 質量 | |
|--------------------|------------------|----------------|----------------------|------------------|----------------|-----------------|-----------------------|-----------------|------------------|------------------|------------|----------|----------|
| | V _{CES} | I _C | V _{CE(sat)} | V _{CES} | I _C | V _{CC} | I _{OC} [INV] | V _{UV} | T _{COH} | T _{JOH} | Alarm | Package | Net mass |
| | Volts | Amps. | Max. Volts | Volts | Cont. Amps. | Typ. Volts | Min. Amps. | Volts | Min. °C | Min. °C | | | Grams |
| 6MBP50TEA060 | 600 | 50 | 2.5 | - | - | 15 | 75 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 6MBP75TEA060 | 600 | 75 | 2.4 | - | - | 15 | 113 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 6MBP100TEA060 | 600 | 100 | 2.3 | - | - | 15 | 150 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 6MBP150TEA060 | 600 | 150 | 2.3 | - | - | 15 | 225 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 7MBP50TEA060 | 600 | 50 | 2.5 | 600 | 30 | 15 | 75 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 7MBP75TEA060 | 600 | 75 | 2.4 | 600 | 50 | 15 | 113 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 7MBP100TEA060 | 600 | 100 | 2.3 | 600 | 50 | 15 | 150 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 7MBP150TEA060 | 600 | 150 | 2.3 | 600 | 50 | 15 | 225 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 6MBP25TEA120 | 1200 | 25 | 3.1 | - | - | 15 | 38 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 6MBP50TEA120 | 1200 | 50 | 3.1 | - | - | 15 | 75 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 6MBP75TEA120 | 1200 | 75 | 3.1 | - | - | 15 | 113 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 7MBP25TEA120 | 1200 | 25 | 3.1 | 1200 | 15 | 15 | 38 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 7MBP50TEA120 | 1200 | 50 | 3.1 | 1200 | 15 | 15 | 75 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |
| 7MBP75TEA120 | 1200 | 75 | 3.1 | 1200 | 25 | 15 | 113 | 11.0 to 12.5 | - | 150 | P & N-side | P622 | 270 |

R-IPM3シリーズ R-IPM3 series (Intelligent Power Modules)

600Vクラス オールシリコン形 IPM 下アームアラーム機能付
600 volts class/All-silicon IPM with N-side alarm function

| 型 式 Device type | インバータ部 Inverter | | | ブレーキ部 Brake | | 制御部 Control | | | | | | パッケージ 質量 | |
|--------------------|------------------|----------------|----------------------|------------------|----------------|-----------------|-----------------------|-----------------|------------------|------------------|--------|----------|----------|
| | V _{CES} | I _C | V _{CE(sat)} | V _{CES} | I _C | V _{CC} | I _{OC} [INV] | V _{UV} | T _{COH} | T _{JOH} | Alarm | Package | Net mass |
| | Volts | Amps. | Max. Volts | Volts | Cont. Amps. | Typ. Volts | Min. Amps. | Volts | Min. °C | Min. °C | | | Grams |
| 6MBP20RTA060 | 600 | 20 | 2.2 | - | - | 15 | 30 | 11.0 to 12.5 | 110 | 150 | N-side | P619 | 85 |
| 6MBP50RTB060 | 600 | 50 | 2.5 | - | - | 15 | 75 | 11.0 to 12.5 | 110 | 150 | N-side | P610 | 440 |
| 6MBP75RTB060 | 600 | 75 | 2.4 | - | - | 15 | 113 | 11.0 to 12.5 | 110 | 150 | N-side | P610 | 440 |
| 6MBP100RTB060 | 600 | 100 | 2.3 | - | - | 15 | 150 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 6MBP150RTB060 | 600 | 150 | 2.3 | - | - | 15 | 225 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 7MBP50RTB060 | 600 | 50 | 2.5 | 600 | 30 | 15 | 75 | 11.0 to 12.5 | 110 | 150 | N-side | P610 | 440 |
| 7MBP75RTB060 | 600 | 75 | 2.4 | 600 | 50 | 15 | 113 | 11.0 to 12.5 | 110 | 150 | N-side | P610 | 440 |
| 7MBP100RTB060 | 600 | 100 | 2.3 | 600 | 50 | 15 | 150 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 7MBP150RTB060 | 600 | 150 | 2.3 | 600 | 50 | 15 | 225 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |



■ R-IPMシリーズ R-IPM series (Intelligent Power Modules)

600V、1200Vクラス オールシリコン形 IPM 下アームアラーム機能付
600, 1200 volts class/All-silicon IPM with N-side alarm function

| 型 式 Device type | インバータ部 Inverter | | | ブレーキ部 Brake | | 制御部 Control | | | | | パッケージ 質量 | | |
|--------------------|------------------|-------------------------|------------------------------|------------------|-------------------------|-------------------------|-------------------------------|--------------|--------------------------------|--------------------------------|----------|---------|----------------------|
| | V _{CEs} | I _c Cont. | V _{CE(sat)} Max. | V _{CEs} | I _c Cont. | V _{CC} Typ. | I _{oc} [INV] Min. | VUV | T _{cOH} Min. °C | T _{jOH} Min. °C | Alarm | Package | Net mass Grams |
| | Volts | Amps. | Volts | Volts | Amps. | Volts | Amps. | Volts | | | | | |
| 6MBP15RH060 | 600 | 15 | 2.7 | - | - | 15 | 21 | 11.0 to 12.5 | - | 150 | N-side | P617 | 50 |
| 6MBP20RH060 | 600 | 20 | 2.7 | - | - | 15 | 30 | 11.0 to 12.5 | - | 150 | N-side | P617 | 50 |
| 6MBP30RH060 | 600 | 30 | 2.7 | - | - | 15 | 44 | 11.0 to 12.5 | - | 150 | N-side | P617 | 50 |
| 6MBP50RA060 | 600 | 50 | 2.8 | - | - | 15 | 75 | 11.0 to 12.5 | 110 | 150 | N-side | P610 | 450 |
| 6MBP75RA060 | 600 | 75 | 2.8 | - | - | 15 | 113 | 11.0 to 12.5 | 110 | 150 | N-side | P610 | 450 |
| 6MBP100RA060 | 600 | 100 | 2.8 | - | - | 15 | 150 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 6MBP150RA060 | 600 | 150 | 2.8 | - | - | 15 | 225 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 6MBP200RA060 | 600 | 200 | 2.8 | - | - | 15 | 300 | 11.0 to 12.5 | 110 | 150 | N-side | P612 | 920 |
| 6MBP300RA060 | 600 | 300 | 2.8 | - | - | 15 | 450 | 11.0 to 12.5 | 110 | 150 | N-side | P612 | 920 |
| 7MBP50RA060 | 600 | 50 | 2.8 | 600 | 30 | 15 | 75 | 11.0 to 12.5 | 110 | 150 | N-side | P610 | 450 |
| 7MBP75RA060 | 600 | 75 | 2.8 | 600 | 50 | 15 | 113 | 11.0 to 12.5 | 110 | 150 | N-side | P610 | 450 |
| 7MBP100RA060 | 600 | 100 | 2.8 | 600 | 50 | 15 | 150 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 7MBP150RA060 | 600 | 150 | 2.8 | 600 | 50 | 15 | 225 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 7MBP200RA060 | 600 | 200 | 2.8 | 600 | 75 | 15 | 300 | 11.0 to 12.5 | 110 | 150 | N-side | P612 | 920 |
| 7MBP300RA060 | 600 | 300 | 2.8 | 600 | 100 | 15 | 450 | 11.0 to 12.5 | 110 | 150 | N-side | P612 | 920 |
| 6MBP15RA120 | 1200 | 15 | 2.8 | - | - | 15 | 21 | 11.0 to 12.5 | - | 150 | N-side | P619 | 85 |
| 6MBP25RA120 | 1200 | 25 | 2.6 | - | - | 15 | 38 | 11.0 to 12.5 | 110 | 150 | N-side | P610 | 450 |
| 6MBP50RA120 | 1200 | 50 | 2.6 | - | - | 15 | 75 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 6MBP75RA120 | 1200 | 75 | 2.6 | - | - | 15 | 113 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 6MBP100RA120 | 1200 | 100 | 2.6 | - | - | 15 | 150 | 11.0 to 12.5 | 110 | 150 | N-side | P612 | 920 |
| 6MBP150RA120 | 1200 | 150 | 2.6 | - | - | 15 | 225 | 11.0 to 12.5 | 110 | 150 | N-side | P612 | 920 |
| 7MBP25RA120 | 1200 | 25 | 2.6 | 1200 | 15 | 15 | 38 | 11.0 to 12.5 | 110 | 150 | N-side | P610 | 450 |
| 7MBP50RA120 | 1200 | 50 | 2.6 | 1200 | 25 | 15 | 75 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 7MBP75RA120 | 1200 | 75 | 2.6 | 1200 | 25 | 15 | 113 | 11.0 to 12.5 | 110 | 150 | N-side | P611 | 450 |
| 7MBP100RA120 | 1200 | 100 | 2.6 | 1200 | 50 | 15 | 150 | 11.0 to 12.5 | 110 | 150 | N-side | P612 | 920 |
| 7MBP150RA120 | 1200 | 150 | 2.6 | 1200 | 50 | 15 | 225 | 11.0 to 12.5 | 110 | 150 | N-side | P612 | 920 |

600V、1200Vクラス オールシリコン形 IPM 上下アームアラーム機能付
600, 1200 volts class/All-silicon IPM with P and N-side alarm function

| 型 式 Device type | インバータ部 Inverter | | | ブレーキ部 Brake | | 制御部 Control | | | | | パッケージ 質量 | | |
|--------------------|------------------|-------------------------|------------------------------|------------------|-------------------------|-------------------------|-------------------------------|--------------|--------------------------------|--------------------------------|------------|---------|----------------------|
| | V _{CEs} | I _c Cont. | V _{CE(sat)} Max. | V _{CEs} | I _c Cont. | V _{CC} Typ. | I _{oc} [INV] Min. | VUV | T _{cOH} Min. °C | T _{jOH} Min. °C | Alarm | Package | Net mass Grams |
| | Volts | Amps. | Volts | Volts | Amps. | Volts | Amps. | Volts | | | | | |
| 6MBP50RTJ060 | 600 | 50 | 2.5 | - | - | 15 | 75 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 6MBP75RTJ060 | 600 | 75 | 2.4 | - | - | 15 | 113 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 6MBP100RTJ060 | 600 | 100 | 2.3 | - | - | 15 | 150 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 6MBP150RTJ060 | 600 | 150 | 2.3 | - | - | 15 | 225 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 7MBP50RTJ060 | 600 | 50 | 2.5 | 600 | 30 | 15 | 75 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 7MBP75RTJ060 | 600 | 75 | 2.4 | 600 | 50 | 15 | 113 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 7MBP100RTJ060 | 600 | 100 | 2.3 | 600 | 50 | 15 | 150 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 7MBP150RTJ060 | 600 | 150 | 2.3 | 600 | 50 | 15 | 225 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 6MBP25RJ120 | 1200 | 25 | 2.6 | 1200 | - | 15 | 38 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 6MBP50RJ120 | 1200 | 50 | 2.6 | 1200 | - | 15 | 75 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 6MBP75RJ120 | 1200 | 75 | 2.6 | 1200 | - | 15 | 113 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 7MBP25RJ120 | 1200 | 20 | 2.6 | 1200 | 15 | 15 | 38 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 7MBP50RJ120 | 1200 | 50 | 2.6 | 1200 | 25 | 15 | 75 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |
| 7MBP75RJ120 | 1200 | 75 | 2.6 | 1200 | 25 | 15 | 113 | 11.0 to 12.5 | 110 | 150 | P & N-side | P621 | 450 |



IGBTディスクリート Discrete IGBTs

600Vクラス 産業用ディスクリートタイプ
600 volts class Discrete types

| 型 式 Device type | IGBT | | | | | | | | | | FWD | | | パッケージ Package | 質量 Net mass Grams | |
|--------------------|--|-------------------------|--|--|-------------------------|--|--|-------------------------|--|-------------------------|--|-------------------------|-------------------------|------------------|-------------------------|--------------|
| | V _{CE(sat)} (V _{GE} =15V) Max. | I _C Amps. | Switching time ton toff tf μsec. μsec. μsec. | V _{CE(sat)} (V _{GE} =15V) Max. | I _C Amps. | I _{C25} T _C =25°C Cont. Amps. | I _{C100} T _C =100°C Cont. Amps. | P _C Watts | V _{CE(sat)} (V _{GE} =15V) Max. | I _C Amps. | Switching time ton toff tf μsec. μsec. μsec. | V _F Volts | P _C Watts | | | trr μsec. |
| | | | | | | | | | | | | | | | | |
| 1MBG05D-060 | 600 | ±20 | 13 | 5 | 50 | 3.0 | 5 | 1.2 | 1.0 | 0.35 | 3.0 | 25 | 0.3 | T-pack(S) | 1.6 | |
| 1MBC05-060 | 600 | ±20 | 13 | 5 | 50 | 3.0 | 5 | 1.2 | 1.0 | 0.35 | - | - | - | TO-220AB | 2.0 | |
| 1MBC05D-060 | 600 | ±20 | 13 | 5 | 50 | 3.0 | 5 | 1.2 | 1.0 | 0.35 | 3.0 | 25 | 0.3 | TO-220AB | 2.0 | |
| 1MBH05D-060 | 600 | ±20 | 21 | 5 | 80 | 3.0 | 5 | 1.2 | 1.0 | 0.35 | 3.0 | 40 | 0.3 | TO-3PL | 9.5 | |
| 1MBG10D-060 | 600 | ±20 | 20 | 10 | 75 | 3.0 | 10 | 1.2 | 1.0 | 0.35 | 3.0 | 35 | 0.3 | T-pack(S) | 1.6 | |
| 1MBC10-060 | 600 | ±20 | 20 | 10 | 75 | 3.0 | 10 | 1.2 | 1.0 | 0.35 | - | - | - | TO-220AB | 2.0 | |
| 1MBC10D-060 | 600 | ±20 | 20 | 10 | 75 | 3.0 | 10 | 1.2 | 1.0 | 0.35 | 3.0 | 35 | 0.3 | TO-220AB | 2.0 | |
| 1MBH10D-060 | 600 | ±20 | 30 | 10 | 115 | 3.0 | 10 | 1.2 | 1.0 | 0.35 | 3.0 | 55 | 0.3 | TO-3PL | 9.5 | |
| 1MBC15-060 | 600 | ±20 | 24 | 15 * | 90 | 3.0 | 15 | 1.2 | 1.0 | 0.35 | - | - | - | TO-220AB | 2.0 | |
| 1MB15D-060 | 600 | ±20 | 33 | 15 | 120 | 3.0 | 15 | 1.2 | 1.0 | 0.35 | 3.0 | 60 | 0.3 | TO-3P | 5.5 | |
| 1MBH15D-060 | 600 | ±20 | 37 | 15 | 140 | 3.0 | 15 | 1.2 | 1.0 | 0.35 | 3.0 | 75 | 0.3 | TO-3PL | 9.5 | |
| 1MB20-060 | 600 | ±20 | 38 | 20 | 145 | 3.0 | 20 | 1.2 | 1.0 | 0.35 | - | - | - | TO-3P | 5.5 | |
| 1MB20D-060 | 600 | ±20 | 38 | 20 | 145 | 3.0 | 20 | 1.2 | 1.0 | 0.35 | 3.0 | 75 | 0.3 | TO-3P | 5.5 | |
| 1MBH20D-060 | 600 | ±20 | 45 | 20 | 170 | 3.0 | 20 | 1.2 | 1.0 | 0.35 | 3.0 | 95 | 0.3 | TO-3PL | 9.5 | |
| 1MB30-060 | 600 | ±20 | 48 | 30 * | 180 | 3.0 | 30 | 1.2 | 1.0 | 0.35 | - | - | - | TO-3P | 5.5 | |
| 1MBH30D-060 | 600 | ±20 | 58 | 30 | 220 | 3.0 | 30 | 1.2 | 1.0 | 0.35 | 3.0 | 120 | 0.3 | TO-3PL | 9.5 | |
| 1MBH50-060 | 600 | ±20 | 82 | 50 | 310 | 3.0 | 50 | 1.2 | 1.0 | 0.35 | - | - | - | TO-3PL | 9.5 | |
| 1MBH50D-060 | 600 | ±20 | 82 | 50 | 310 | 3.0 | 50 | 1.2 | 1.0 | 0.35 | 3.0 | 140 | 0.3 | TO-3PL | 9.5 | |

* T_C=80°C

600Vクラス 産業用ディスクリートタイプ (UPS用)
600 volts class Discrete types for UPS

| 型 式 Device type | IGBT | | | | | | | | | | FWD | | | パッケージ Package | 質量 Net mass Grams | | |
|--------------------|--|-------------------------|--|--|-------------------------|--|--|-------------------------|--|-------------------------|--|-------------------------|-------------------------|------------------|-------------------------|--------------|-------|
| | V _{CE(sat)} (V _{GE} =15V) Max. | I _C Amps. | Switching time ton toff tf μsec. μsec. μsec. | V _{CE(sat)} (V _{GE} =15V) Max. | I _C Amps. | I _{C25} T _C =25°C Cont. Amps. | I _{C100} T _C =100°C Cont. Amps. | P _C Watts | V _{CE(sat)} (V _{GE} =15V) Max. | I _C Amps. | Switching time ton toff tf μsec. μsec. μsec. | V _F Volts | P _C Watts | | | trr μsec. | |
| | | | | | | | | | | | | | | | | | Volts |
| 1MBK30D-060S | 600 | ±20 | 50 | 30 | 150 | 2.9 | 30 | 0.15 | 0.62 | 0.17 | 2.5 | 80 | 0.1 | TO-247 | 5.5 | | |
| 1MBK50D-060S | 600 | ±20 | 75 | 50 | 230 | 2.9 | 50 | 0.15 | 0.62 | 0.17 | 2.5 | 150 | 0.1 | TO-247 | 5.5 | | |
| 1MBH50D-060S | 600 | ±20 | 65 | 50 | 200 | 2.9 | 50 | 0.15 | 0.62 | 0.17 | 2.5 | 130 | 0.1 | TO-3PL | 9.5 | | |
| 1MBH75D-060S | 600 | ±20 | 83 | 75 | 310 | 2.9 | 75 | 0.15 | 0.62 | 0.17 | 2.5 | 180 | 0.1 | TO-3PL | 9.5 | | |



■ IGBTディスクリート Discrete IGBTs

1200Vクラス 産業用ディスクリートタイプ
1200 volts class Discrete types

| 型 式 Device type | IGBT | | | | | | | | | | FWD | | | パッケージ Package | 質量 Net mass Grams |
|--------------------|---------------------------|---------------------------|---|---|-------------------------|--|-------------------------|----------------------------------|---------------|-------------|-------------------------|-------------------------|--------------|------------------|-------------------------|
| | V _{CES} Volts | V _{GES} Volts | I _{C25} T _C =25°C Amps. | I _{C100} T _C =100°C Amps. | P _C Watts | V _{CE(sat)} (V _{GE} =15V) | | スイッチングタイム Max. Switching time | | | V _F Volts | P _C Watts | trr µsec. | | |
| | | | | | | Max. Volts | I _C Amps. | ton µsec. | toff µsec. | tf µsec. | | | | | |
| 1MBC03-120 | 1200 | ±20 | 5 | 2.5 | 70 | 3.5 | 2.5 | 1.2 | 1.5 | 0.5 | - | - | - | TO-220AB | 2.0 |
| 1MB03D-120 | 1200 | ±20 | 5 | 2.5 | 70 | 3.5 | 2.5 | 1.2 | 1.5 | 0.5 | 3.0 | 40 | 0.35 | TO-3P | 5.5 |
| 1MBH03D-120 | 1200 | ±20 | 5.5 | 2.5 | 80 | 3.5 | 2.5 | 1.2 | 1.5 | 0.5 | 3.0 | 50 | 0.35 | TO-3PL | 9.5 |
| 1MB05-120 | 1200 | ±20 | 9 | 5 | 100 | 3.5 | 5 | 1.2 | 1.5 | 0.5 | - | - | - | TO-3P | 5.5 |
| 1MB05D-120 | 1200 | ±20 | 9 | 5 | 100 | 3.5 | 5 | 1.2 | 1.5 | 0.5 | 3.0 | 60 | 0.35 | TO-3P | 5.5 |
| 1MBH05D-120 | 1200 | ±20 | 10 | 5 | 115 | 3.5 | 5 | 1.2 | 1.5 | 0.5 | 3.0 | 75 | 0.35 | TO-3PL | 9.5 |
| 1MB08-120 | 1200 | ±20 | 13 | 8 | 115 | 3.5 | 8 | 1.2 | 1.5 | 0.5 | - | - | - | TO-3P | 5.5 |
| 1MB08D-120 | 1200 | ±20 | 13 | 8 | 115 | 3.5 | 8 | 1.2 | 1.5 | 0.5 | 3.0 | 70 | 0.35 | TO-3P | 5.5 |
| 1MBH08D-120 | 1200 | ±20 | 15 | 8 | 135 | 3.5 | 8 | 1.2 | 1.5 | 0.5 | 3.0 | 85 | 0.35 | TO-3PL | 9.5 |
| 1MB10-120 | 1200 | ±20 | 16 | 10 | 135 | 3.5 | 10 | 1.2 | 1.5 | 0.5 | - | - | - | TO-3P | 5.5 |
| 1MB10D-120 | 1200 | ±20 | 16 | 10 | 135 | 3.5 | 10 | 1.2 | 1.5 | 0.5 | 3.0 | 85 | 0.35 | TO-3P | 5.5 |
| 1MBH10D-120 | 1200 | ±20 | 18 | 10 | 155 | 3.5 | 10 | 1.2 | 1.5 | 0.5 | 3.0 | 105 | 0.35 | TO-3PL | 9.5 |
| 1MBH15-120 | 1200 | ±20 | 26 | 15 | 245 | 3.5 | 15 | 1.2 | 1.5 | 0.5 | - | - | - | TO-3PL | 9.5 |
| 1MBH15D-120 | 1200 | ±20 | 26 | 15 | 245 | 3.5 | 15 | 1.2 | 1.5 | 0.5 | 3.0 | 120 | 0.35 | TO-3PL | 9.5 |
| 1MBH25-120 | 1200 | ±20 | 38 | 25 | 310 | 3.5 | 25 | 1.2 | 1.5 | 0.5 | - | - | - | TO-3PL | 9.5 |
| 1MBH25D-120 | 1200 | ±20 | 38 | 25 | 310 | 3.5 | 25 | 1.2 | 1.5 | 0.5 | 3.0 | 145 | 0.35 | TO-3PL | 9.5 |

■ IGBT用高速ダイオード Fast Recovery Diodes for IGBT

ディスクリート FRD
Discrete FRD

| 型 式 Device type | V _{RRM} | I _{FM} | V _F | trr | パッケージ Package | 質量 Net mass Grams |
|--------------------|------------------|-----------------------------|--------------------------|---|------------------|-------------------------|
| | Volts | Amps. | Volts | Switching time (Max.) (µsec.) di/dt=100A/µs 70% recovery | | |
| ERW01-060 | 600 | 5 (T _C =118°C) | 3 (I _F =5A) | 0.3 (I _F =5A, V _R =200V) | TO-220AB(single) | 2.0 |
| ERW02-060 | 600 | 10 (T _C =100°C) | 3 (I _F =10A) | 0.3 (I _F =10A, V _R =200V) | TO-220AB(single) | 2.0 |
| ERW03-060 | 600 | 15 (T _C =92°C) | 3 (I _F =15A) | 0.3 (I _F =15A, V _R =200V) | TO-220AB(single) | 2.0 |
| ERW04-060 | 600 | 20 (T _C =91°C) | 3 (I _F =20A) | 0.3 (I _F =20A, V _R =200V) | TO-220AB(single) | 2.0 |
| ERW05-060 | 600 | 30 (T _C =81°C) | 3 (I _F =30A) | 0.3 (I _F =30A, V _R =200V) | TO-220AB(single) | 2.0 |
| ERW06-060 | 600 | 50 (T _C =77°C) | 3 (I _F =50A) | 0.3 (I _F =50A, V _R =200V) | TO-3P(single) | 5.5 |
| ERW07-120 | 1200 | 2.5 (T _C =129°C) | 3 (I _F =2.5A) | 0.35 (I _F =2.5A, V _R =200V) | TO-220AB(single) | 2.0 |
| ERW08-120 | 1200 | 5 (T _C =127°C) | 3 (I _F =5A) | 0.35 (I _F =5A, V _R =200V) | TO-220AB(single) | 2.0 |
| ERW09-120 | 1200 | 8 (T _C =124°C) | 3 (I _F =8A) | 0.35 (I _F =8A, V _R =200V) | TO-220AB(single) | 2.0 |
| ERW10-120 | 1200 | 10 (T _C =123°C) | 3 (I _F =10A) | 0.35 (I _F =10A, V _R =200V) | TO-220AB(single) | 2.0 |
| ERW11-120 | 1200 | 15 (T _C =122°C) | 3 (I _F =15A) | 0.35 (I _F =15A, V _R =200V) | TO-3P(single) | 5.5 |
| ERW12-120 | 1200 | 25 (T _C =113°C) | 3 (I _F =25A) | 0.35 (I _F =25A, V _R =200V) | TO-3P(single) | 5.5 |
| ERW13-060 | 600 | 50 (T _C =90°C) | 3 (I _F =50A) | 0.3 (I _F =50A, V _R =200V) | TO-3PL(single) | 9.5 |



HEV用IGBTモジュールの特長 Features of IGBT Module for Hybrid Electric Vehicle

Vシリーズ V-series

■ 特長 Features

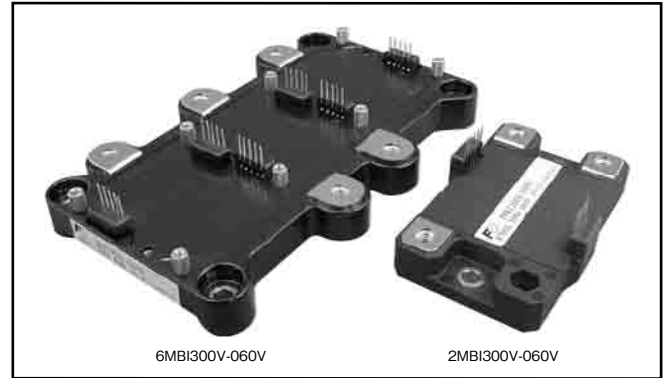
600V/300A コンパクトパッケージ
鉛フリー
第6世代FSトレンチIGBT搭載
温度、電流検出端子搭載

600V/300A Compact Package for 2-pack & 6-pack
Pb Free package
6th Generation IGBT chip with trench-gate FS
Temperature & Current sensing Functions

■ 仕様 Specifications

● 絶対最大定格(Tc=25°C unless otherwise specified)

| Item | Symbol | Rating | Unit |
|-----------------------------------|------------------|-----------------|-------|
| Collector-emitter voltage | V _{CEs} | 600 | V |
| Gate emitter voltage | V _{GES} | ±20 | V |
| Collector current | DC | I _c | 300 A |
| | DC | -I _c | 300 A |
| Max. power dissipation (1 device) | P _c | tbd | W |
| Operating temperature | T _j | 150 | °C |
| Storage temperature | T _{stg} | -40 to +125 | °C |
| Isolation voltage | V _{iso} | AC2500 (1min) | V |
| Screw torque | Mounting (M5) | 3.5 | Nm |
| | Terminals (M5) | 3.5 | Nm |



● 電気的特性(Tj=25°C unless otherwise specified)

| Item | Symbol | Value | | | Conditions | Unit |
|--------------------------------------|-------------------------------|-------|------|------|---|------|
| | | Min. | Typ. | Max. | | |
| Zero gate voltage collector current | I _{CEs} | — | — | 2.0 | V _{GE} =0V, V _{CE} =600V | mA |
| Gate-emitter leakage current | I _{GES} | — | — | 0.4 | V _{CE} =0V, V _{GE} =±20V | µA |
| Gate-emitter threshold voltage | V _{GE(th)} | tbd | 6.2 | tbd | V _{CE} =0V, I _c =300mA | V |
| Collector-emitter saturation voltage | V _{CE(sat) terminal} | — | 2.05 | tbd | T _j =25°C, V _{GE} =15V | V |
| | | — | 2.6 | — | T _j =125°C, I _c =300A | |
| Input capacitance | C _{ies} | — | tbd | — | V _{GE} =0V | pF |
| Forward voltage of diode | V _{F terminal} | — | 1.9 | tbd | T _j =25°C, V _{GE} =15V | V |
| | | — | 1.88 | — | T _j =125°C, I _c =300A | |

■ 特性 Characteristics

| 型式 Device type | V _{CEs} Volts | I _{c(Cont)} Amps. | V _{CE(sat)} Typ. Volts | V _F Typ. Volts | パッケージ Package |
|-------------------|---------------------------|-------------------------------|------------------------------------|------------------------------|------------------|
| ▲ 2MBI300V-060V | 600 | 300 | 2.05 | 1.90 | P203 |
| ▲ 6MBI300V-060V | 600 | 300 | 2.05 | 1.90 | P627 |

▲ 開発中 Under development

Uシリーズ U-series

■ 特長 Features

産業用で実績のあるパッケージを適用
・小型・低背パッケージ
・第5世代U2シリーズプレーナー – NPT技術(600V)
・第5世代U4シリーズトレンチ – FS技術(1200V)
鉛フリー

Compatible with the Industrial Package

- ・ Compact low profile
- ・ U2-series Planar-NPT technology for 600V
- ・ U4-series Trench-FS technology for 1200V

Pb Free Package

■ 特性 Characteristics

| 型式 Device type | V _{CEs} Volts | I _{c(Cont)} Amps. | V _{CE(sat)} Typ. Volts | V _F Typ. Volts | パッケージ Package |
|-------------------|---------------------------|-------------------------------|------------------------------------|------------------------------|------------------|
| ▲ 2MBI600TN-060V | 600 | 600 | 2.65 | 2.55 | M254 |
| ▲ 2MBI450UN-120V | 1200 | 450 | 2.40 | 2.20 | M254 |

▲ 開発中 Under development





HEV用IGBT IPMの特長 Features of IGBT IPM for Hybrid Electric Vehicle

■特長 Features

ドライブ回路、保護機能内蔵

・光絶縁

(信号入力、IGBT チップ温度モニター、異常検出時アラーム出力)

・短絡保護、過熱保護、制御電圧低下保護

鉛フリー

Easy to use

・Optical isolated

(signal input, IGBT's temperature monitor, alarm output)

・Detection and protection

(short-circuit, over-temperature, under-voltage)

Pb Free Package



■特性 Characteristics

(Tj=25°C)

| 型式 Device type | V _{CE(s)} Volts | I _{C(Cont)} Amps. | V _{CE(sat)} Typ. Volts | V _F Typ. Volts | パッケージ Package |
|-------------------|-----------------------------|-------------------------------|------------------------------------|------------------------------|------------------|
| ▲ 2MBP600UN-120V | 1200 | 600 | 2.00 | 2.20 | P401 |

▲ 開発中 Under development