

Hitachi High-Power IGBT Modules

Status List

Date: Jul. 2005

M: Mass production W: Working sample A: Abolition

KS05013

High-Voltage High-Power Series

| Connection | Type | Absolute Maximum Ratings | | | Characteristics | | | | Outline | Status |
|-------------|--------------|--------------------------|-----------------------|-----------------------|---------------------------------|-----------------------------|------------------------------|----------------------------|----------|----------|
| | | V _{CES} (V) | I _C (A) | P _C (W) | V _{CE(sat)} (V)Typ. | t _{on} (μs)Max. | t _{off} (μs)Max. | t _r (μs)Max. | | |
| Single | MBN900D45A | 4,500 | 900 | - | 5.5 | 2.2 | 3.6 | 1.6 | N - 1 | M |
| | MBN800E33D | 3,300 | 800 | - | 4.2 | 2.4 | 3.0 | 1.9 | N - 10 | M |
| | MBN1200E33D | 3,300 | 1,200 | 11,500 | 4.2 | 3.3 | 5.1 | 2.5 | N - 9 | M |
| | MBN1200D33C | 3,300 | 1,200 | 12,000 | 4.8 | 3.8 | 5.6 | 3.2 | N - 1 | M |
| | MBN600C33A | 3,300 | 600 | 5,800 | 4.5 | 4.0 | 6.0 | 3.2 | N - 2 | M |
| | MBN400C33A | 3,300 | 400 | 4,000 | 4.5 | 3.2 | 5.3 | 2.8 | N - 3 | M |
| | MBN1200E25C | 2,500 | 1,200 | 12,000 | 2.9 | 4.2 | 6.4 | 3.2 | N - 9 | M |
| | MBN600D20 | 2,000 | 600 | 4,000 | 4.4 | 2.5 | 5.9 | 2.7 | N - 3 | M |
| | MBN400D20 | 2,000 | 400 | 3,000 | 4.2 | 2.6 | 5.9 | 2.4 | N - 4 | M |
| | MBN1200E17D | 1,700 | 1,200 | - | 2.7 | 0.9 | 1.4 | 0.6 | N - 10 | M |
| | MBN1600E17D | 1,700 | 1,600 | - | 2.7 | 1.2 | 1.9 | 0.7 | N - 10 | M |
| | MBN1600EB17D | 1,700 | 1,600 | - | 2.7 | 1.2 | 1.9 | 0.7 | N - 11 | M |
| | MBN1800E17D | 1,700 | 1,800 | - | 2.7 | 1.2 | 1.5 | 0.7 | N - 9 | M |
| MBN2400E17D | 1,700 | 2,400 | - | 2.7 | 1.6 | 2.0 | 1.1 | N - 9 | W | |
| Chopper | MBL800D33C | 3,300 | 800 | 8,000 | 4.1 | 3.8 | 5.6 | 1.4 | N - 1 | M |
| | MBL800E33D | 3,300 | 800 | - | 4.2 | 2.4 | 3.0 | 1.9 | N - 9 | W |
| | MBL1200E17D | 1,700 | 1,200 | - | 2.7 | 1.6 | 1.7 | 0.9 | N - 10 | M |

| Connection | Type | V _{RRM} (V) | I _F (A) | - | V _F (V)Typ. | - | - | t _r (μs)Max. | Outline | Status |
|------------|------------|-------------------------|-----------------------|---|---------------------------|---|---|----------------------------|---------|----------|
| Diode | MDN1200D33 | 3,300 | 1,200 | - | 3.2 | - | - | 0.8 | N - 3 | M |
| | MDM800E33D | 3,300 | 800 | - | 2.0 | - | - | 0.6 | M - 10 | M |

Status List

Continue

GR - A Series (Advanced GR Series)

| Connection | Type | Absolute Maximum Ratings | | | Characteristics | | | | Outline | Status |
|------------|--------------|--------------------------|-----------------------|-----------------------|---------------------------------|-----------------------------|------------------------------|----------------------------|---------|----------|
| | | V _{CES} (V) | I _c (A) | P _c (W) | V _{CE(sat)} (V)Typ. | t _{on} (μs)Max. | t _{off} (μs)Max. | t _f (μs)Max. | | |
| Single | MBN1200GR12A | 1,200 | 1,200 | 8,330 | 2.4 | 2.1 | 1.8 | 0.4 | N - 7 | M |
| | MBN600GR12A | 1,200 | 600 | 3,790 | 2.2 | 0.8 | 1.2 | 0.35 | N - 6 | M |
| | MBN400GR12A | 1,200 | 400 | 2,500 | 2.2 | 0.7 | 1.1 | 0.3 | N - 5 | M |
| Dual | MBM300GR12A | 1,200 | 300 | 1,980 | 2.2 | 0.7 | 1.1 | 0.3 | M - 9 | M |
| | MBM200GR12A | 1,200 | 200 | 1,250 | 2.2 | 0.6 | 1.0 | 0.3 | M - 8 | M |
| | MBM150GR12A | 1,200 | 150 | 1,000 | 2.2 | 0.6 | 1.0 | 0.3 | M - 8 | M |
| | MBM100GR12A | 1,200 | 100 | 690 | 2.2 | 0.6 | 1.0 | 0.3 | M - 8 | M |

GR Series

| Connection | Type | Absolute Maximum Ratings | | | Characteristics | | | | Outline | Status |
|------------|-----------|--------------------------|-----------------------|-----------------------|---------------------------------|-----------------------------|------------------------------|----------------------------|---------|----------|
| | | V _{CES} (V) | I _c (A) | P _c (W) | V _{CE(sat)} (V)Typ. | t _{on} (μs)Max. | t _{off} (μs)Max. | t _f (μs)Max. | | |
| Dual | MBM400GR6 | 600 | 400 | 1,170 | 2.1 | 0.7 | 1.1 | 0.32 | M - 3 | M |
| | MBM200GR6 | 600 | 200 | 690 | 2.1 | 0.7 | 0.8 | 0.3 | M - 8 | M |

GS Series

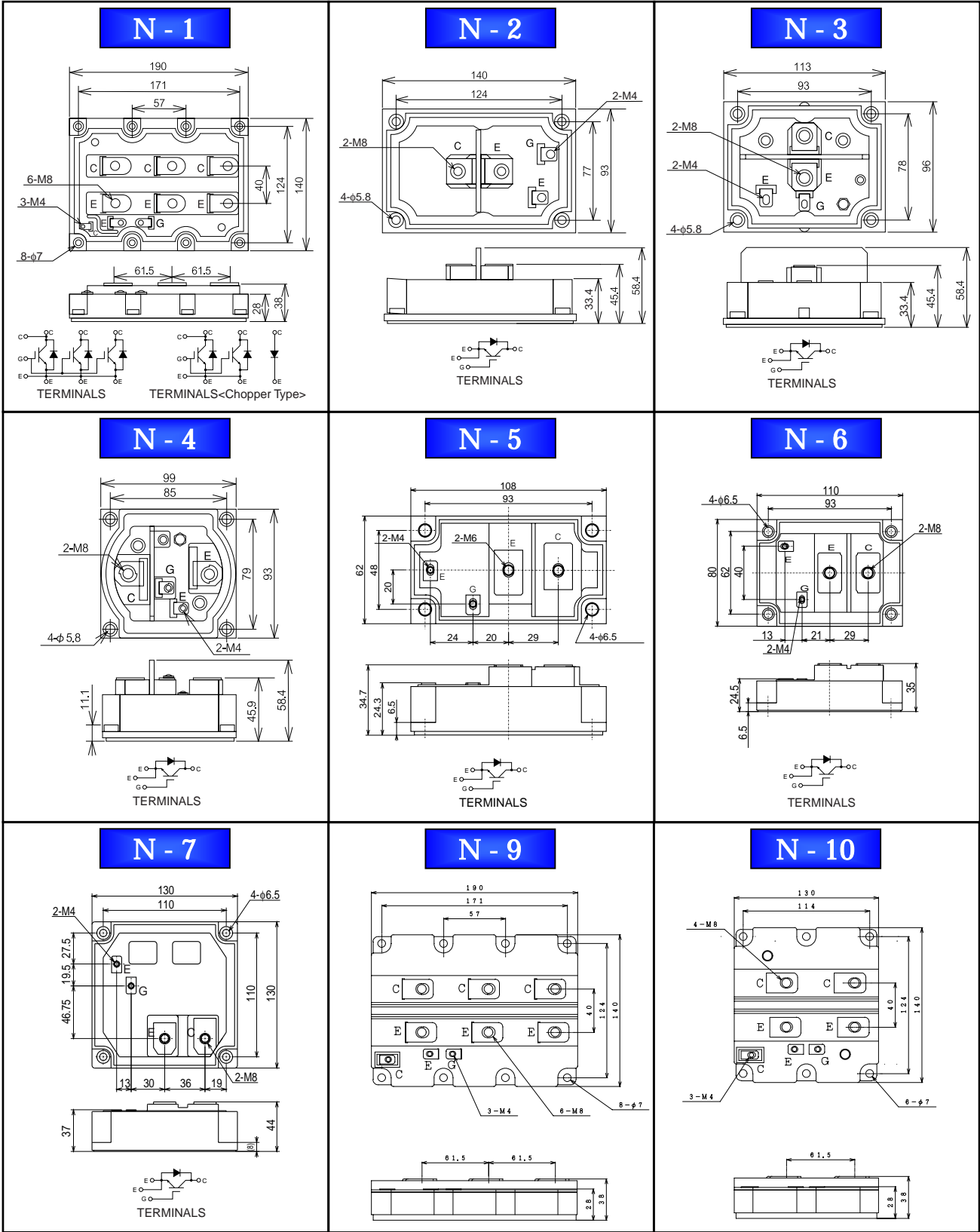
| Connection | Type | Absolute Maximum Ratings | | | Characteristics | | | | Outline | Status |
|------------|-------------|--------------------------|-----------------------|-----------------------|---------------------------------|-----------------------------|------------------------------|----------------------------|---------|----------|
| | | V _{CES} (V) | I _c (A) | P _c (W) | V _{CE(sat)} (V)Typ. | t _{on} (μs)Max. | t _{off} (μs)Max. | t _f (μs)Max. | | |
| Dual | MBM600GS6CW | 600 | 600 | 1,700 | 1.9 | 0.8 | 1.1 | 0.4 | M - 7 | M |
| | MBM400GS6AW | 600 | 400 | 1,000 | 1.9 | 0.7 | 1.1 | 0.35 | M - 1 | M |
| | MBM400JS6AW | 600 | 400 | 1,470 | 1.9 | 0.7 | 1.1 | 0.35 | M - 3 | M |
| | MBM300GS6AW | 600 | 300 | 800 | 1.9 | 0.7 | 1.1 | 0.35 | M - 1 | M |
| | MBM200GS6AW | 600 | 200 | 600 | 1.9 | 0.6 | 0.9 | 0.35 | M - 6 | M |
| | MBM150GS6AW | 600 | 150 | 450 | 1.9 | 0.6 | 0.9 | 0.35 | M - 6 | M |

Status List

Continue

| Abolition | | | | | | | | | | |
|--------------|---------------|--------------------------|-----------------------|-----------------------|---------------------------------|-----------------------------|------------------------------|----------------------------|---------|--------|
| Connection | Type | Absolute Maximum Ratings | | | Characteristics | | | | Outline | Status |
| | | V _{CES} (V) | I _C (A) | P _C (W) | V _{CE(sat)} (V)Typ. | t _{on} (μs)Max. | t _{off} (μs)Max. | t _r (μs)Max. | | |
| Single | MBN1200D33A | 3,300 | 1,200 | 12,000 | 4.1 | 3.2 | 5.6 | 3.2 | N - 1 | A |
| | MBN600C20 | 2,000 | 600 | 4,000 | 4.4 | 2.5 | 5.9 | 2.7 | N - 3 | A |
| | MBN400C20 | 2,000 | 400 | 3,000 | 4.2 | 2.6 | 5.9 | 2.4 | N - 4 | A |
| | MBN600GR12 | 1,200 | 600 | 3,570 | 2.2 | 1.0 | 1.2 | 0.4 | N - 6 | A |
| | MBN400GR12 | 1,200 | 400 | 2,080 | 2.2 | 0.9 | 1.1 | 0.35 | N - 5 | A |
| | MBN1200GS12AW | 1,200 | 1,200 | 5,600 | 2.9 | 2.2 | 1.6 | 0.55 | N - 7 | A |
| | MBN600GS12AW | 1,200 | 600 | 3,100 | 2.7 | 0.8 | 1.2 | 0.4 | N - 6 | A |
| | MBN400GS12AW | 1,200 | 400 | 2,000 | 2.7 | 0.7 | 1.1 | 0.35 | N - 5 | A |
| | MBN400GS12BW | 1,200 | 400 | 2,000 | 2.7 | 0.7 | 1.1 | 0.35 | N - 5 | A |
| MBN300GS12AW | 1,200 | 300 | 1,700 | 2.7 | 0.7 | 1.1 | 0.35 | N - 5 | A | |
| Chopper | MBL800D33B | 3,300 | 800 | 8,000 | 4.1 | 3.3 | 5.0 | 2.7 | N - 1 | A |
| Dual | MBM300GR12 | 1,200 | 300 | 1,710 | 2.2 | 0.9 | 1.1 | 0.35 | M - 9 | A |
| | MBM200GR12 | 1,200 | 200 | 1,130 | 2.2 | 0.8 | 1.0 | 0.35 | M - 8 | A |
| | MBM150GR12 | 1,200 | 150 | 830 | 2.2 | 0.8 | 1.0 | 0.35 | M - 8 | A |
| | MBM100GR12 | 1,200 | 100 | 590 | 2.2 | 0.8 | 0.9 | 0.35 | M - 8 | A |
| | MBM300GR6 | 600 | 300 | 930 | 2.1 | 0.7 | 1.0 | 0.32 | M - 8 | A |
| | MBM150GR6 | 600 | 150 | 520 | 2.1 | 0.7 | 0.8 | 0.3 | M - 8 | A |
| | MBM300GS12AW | 1,200 | 300 | 1,700 | 2.7 | 0.7 | 1.1 | 0.35 | M - 4 | A |
| | MBM200GS12AW | 1,200 | 200 | 1,000 | 2.7 | 0.55 | 1.0 | 0.35 | M - 1 | A |
| | MBM200JS12AW | 1,200 | 200 | 1,470 | 2.7 | 0.55 | 1.0 | 0.35 | M - 3 | A |
| | MBM200JS12EW | 1,200 | 200 | 1,470 | 2.7 | 0.55 | 1.0 | 0.35 | M - 2 | A |
| | MBM150GS12AW | 1,200 | 150 | 800 | 2.7 | 0.55 | 1.0 | 0.35 | M - 1 | A |
| | MBM100GS12AW | 1,200 | 100 | 600 | 2.7 | 0.55 | 0.9 | 0.35 | M - 6 | A |
| MBM75GS12AW | 1,200 | 75 | 450 | 2.7 | 0.55 | 0.9 | 0.35 | M - 6 | A | |
| Six - Pack | MBB200GS6AW | 600 | 200 | 600 | 1.9 | 0.6 | 0.9 | 0.35 | B - 1 | A |
| | MBB100GS12AW | 1,200 | 100 | 600 | 2.7 | 0.55 | 0.9 | 0.35 | B - 1 | A |
| | MBB75GS12AW | 1,200 | 75 | 450 | 2.7 | 0.55 | 0.9 | 0.35 | B - 1 | A |

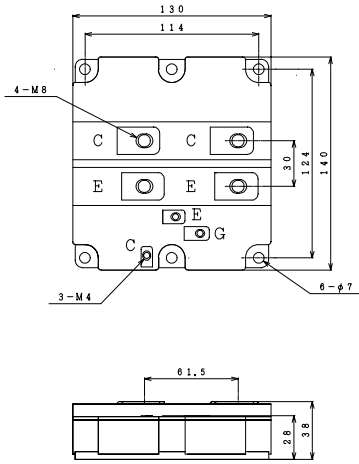
Outline



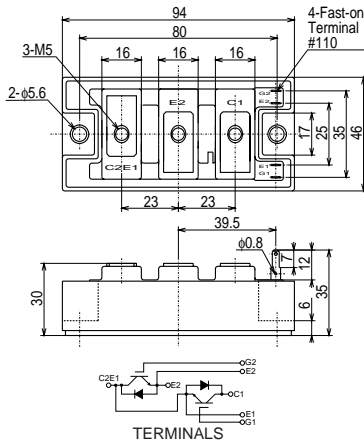
Outline

Continue

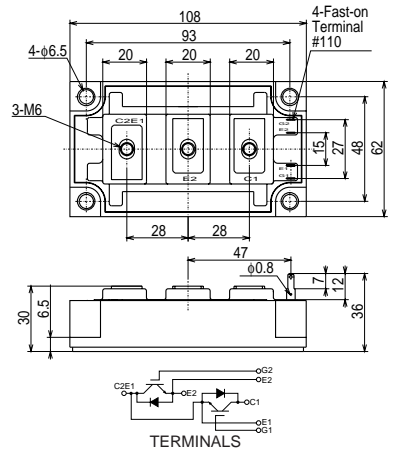
M - 11



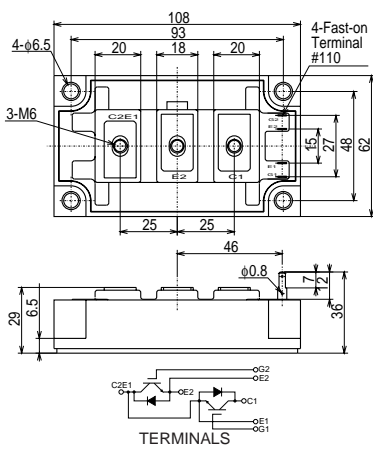
M - 1



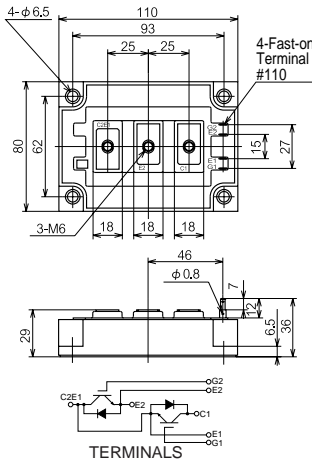
M - 2



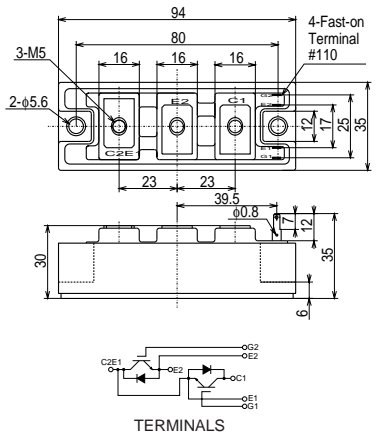
M - 3



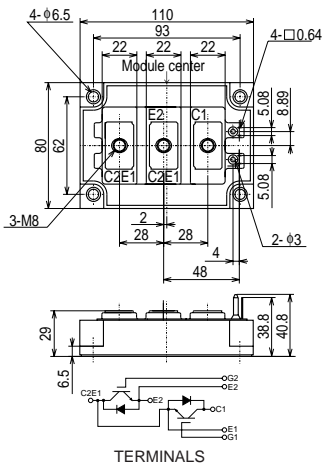
M - 4



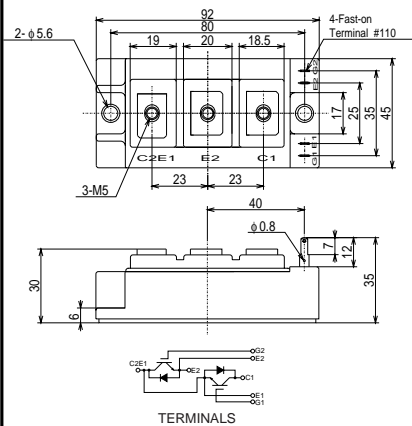
M - 6



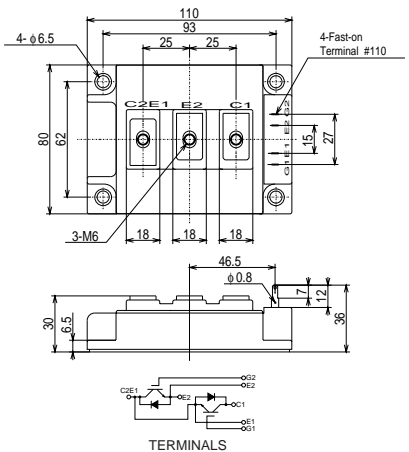
M - 7



M - 8

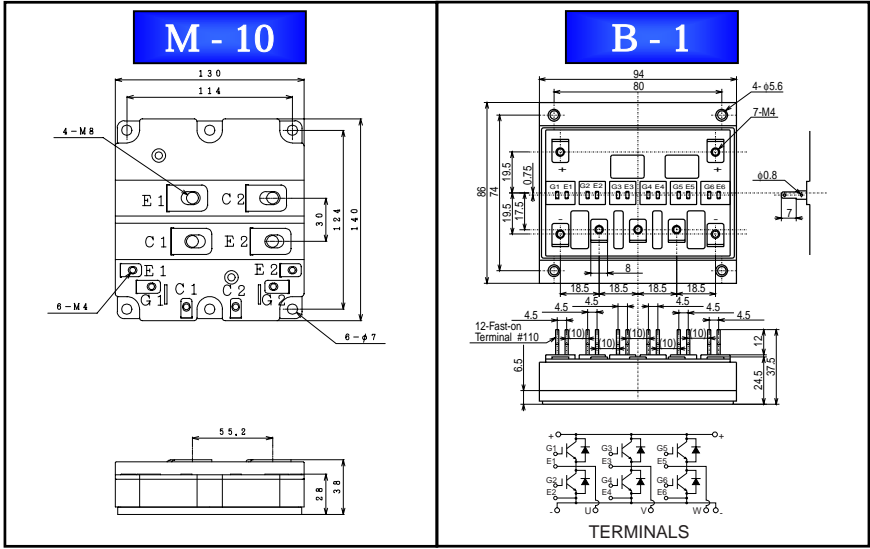


M - 9



Outline

Continue



Notices

1. The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact Hitachi sales department for the latest version of this data sheets.
2. Please be sure to read "Precautions for Safe Use and Notices" in the individual brochure before use.
3. In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, life-support-related medical equipment, fuel control equipment and various kinds of safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of user's fail-safe precautions or other arrangement. Or consult Hitachi's sales department staff.
4. In no event shall Hitachi be liable for any damages that may result from an accident or any other cause during operation of the user's units according to this data sheets. Hitachi assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in this data sheets.
5. In no event shall Hitachi be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
6. No license is granted by this data sheets under any patents or other rights of any third party or Hitachi, Ltd.
7. This data sheets may not be reproduced or duplicated, in any form, in whole or in part, without the expressed written permission of Hitachi, Ltd.
8. The products (technologies) described in this data sheets are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety not are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations.

HITACHI

HITACHI OVERSEAS REPRESENTATIVES**United States of America**

Hitachi America, Ltd.
 Power & Industrial Division
 50 Prospect Avenue Tarrytown, NY 10591
 Telephone: <1>(914) 631-0600
 Fax : <1>(914) 631-3672

United Kingdom

Hitachi Europe Ltd.
 Power Device Department
 Whitebrook Park, Lower Cookham Road, Maidenhead
 Barkshira SL6 8YA
 Telephone: <44>(1628) 585000
 Fax : <44>(1628) 585130

Singapore

Hitachi Asia Ltd.
 Division 1, 16 Collyer Quay #20-00
 Hitachi Tower, Singapore 049318
 Telephone: <65>(538) 6511
 Fax : <65>(538) 9011

Taiwan

Hitachi China Ltd.
 Taipei Branch Office
 5th Floor, No.167, Tun Hwa N. Road, Hung-Kuo Building,
 Taipei, Taiwan
 Telephone: <886>(2) 718-3666
 Fax : <886>(2) 545-2810

Shanghai

Hitachi China Ltd.
 18th Floor, Rui Jin Building
 No.205, Maoming Road (S)
 Shanghai 200020, China
 Telephone: <86>(21) 6472-1002
 Fax : <86>(21) 6472-4990

Hong Kong

Hitachi China Ltd.
 4/F, North Tower, World Finance Centre
 Harbour City, Canton Road, Tsim Sha Tsui, Kowloon
 Telephone: <852>27359218
 Fax : <852>27356793

Korea

Hitachi China Ltd.
 Korea Branch Office
 11th Floor, Kukje Centre Bldg. 191, 2-Ga Hangang-ro
 Yongsan-ku, Seoul
 Telephone: <82>(2) 796-5193
 Fax : <82>(2) 796-5195

Malaysia

Hitachi Asia (Malaysia) Sdn. Bhd.
 Suite 17.3, Level 17 Menara IMC, (Letter Box No.5 Menara IMC)
 No.8, Jalan Sultan Ismail, Menara IMC 50250 Kuala Lumpur
 Telephone: <60>(3) 201-8751
 Fax : <60>(3) 201-8757, -8758

Thailand

Hitachi Asia (Thailand) Co., Ltd.
 18th Floor, Ramaland Building
 952 Rama IV Road, Bangrak
 Bangkok 10500
 Telephone: <66>(2) 632-9292
 Fax : <66>(2) 632-9299

India

Hitachi India Trading Pvt. Ltd.
 Hindustan Times House (10th Floor)
 18-20, Kasturba Gandhi Marg, New Delhi, 110001 India
 Telephone: <91>(11) 2331-5635
 Fax : <91>(11) 2331-3742

■ For inquiries relating to the product, please contact above overseas representatives or below.

Hitachi, Ltd.

Akihabara Daibiru Building,
 18-13, Soto-Kanda 1-chome, Chiyoda-ku, Tokyo, 101-8608 Japan
 Power Device Management Dept. Power Systems

TEL: <81>(3)4564-5147 FAX: <81>(3)4564-4389
 E-Mail: p_device@pis.hitachi.co.jp
 URL: <http://www.pi.hitachi.co.jp/pse>