

# Power Modules



- ▶ **Power Modules MOS**
- ▶ **Power Modules BIPOLAR**

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# Power Modules MOS



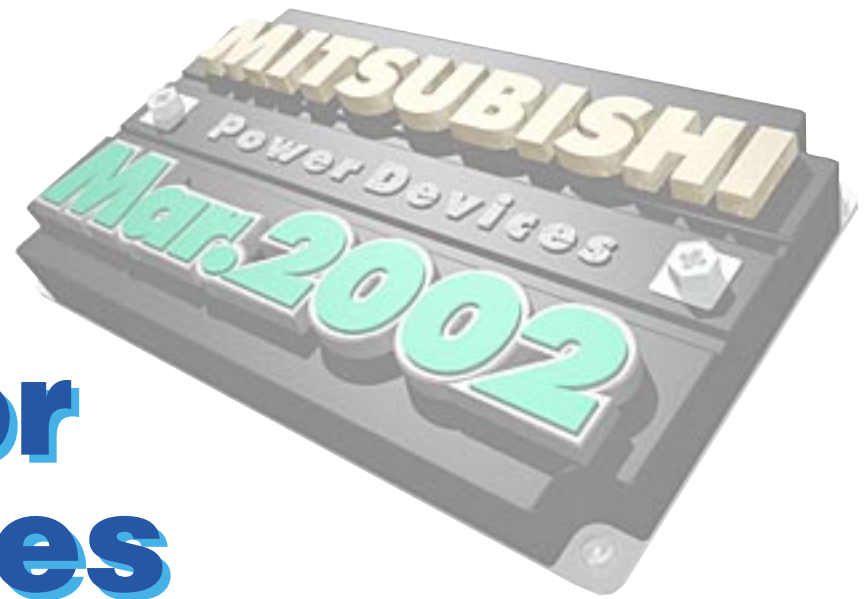
- ▶ **Guidance**
- ▶ **IGBT Modules**
- ▶ **CIB(Converter Inverter Brake) Modules**
- ▶ **Intelligent Power Modules (IPMs)**
- ▶ **Hybrid ICs**
- ▶ **Applications**
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# Guidance



- **Featured Products Technology and Trend**
- **Introduction**
- **Main Application for Power Modules**
- **General Considerations for IGBT and Intelligent Power Modules**
- **Using IGBT Modules**
- **Using F-Series IGBT Modules**
- **Using Hybrid Gate Drivers**
- **Using Intelligent Power Modules**

# Main Application for Power Modules



- ▶ **Inverter**
  - ▶ IGBT Modules
  - ▶ Intelligent Power Modules (IPMs)

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# IGBT Modules



## Voltage Rating

- ▶ 250V
- ▶ 600V
- ▶ 1200V
- ▶ 1400V
- ▶ 1700V
- ▶ 2500V
- ▶ 3300V
- ▶ 4500V

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# 250V



CM200TU-5F

CM350DU-5F

CM400DU-5F

CM600DU-5F (I<sub>c</sub>(rms)=350A)

CM450HA-5F

CM600HA-5F

CM600HN-5F

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# 600V



- ▶ **Single Power Modules**
- ▶ **Dual Power Modules**
- ▶ **4-Pack Power Modules**
- ▶ **6-Pack Power Modules**
- ▶ **Brake Power Modules**

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# 600V Single Power Modules



## F-Series

CM600HU-12F

## U-Series

CM600HU-12H

## H-Series

CM300HA-12H

CM400HA-12H

CM600HA-12H



# 600V Dual Power Modules (1 of 2)



## F-Series

CM75DU-12F  
CM100DU-12F  
CM150DU-12F  
CM200DU-12F  
CM300DU-12F  
CM400DU-12F

## U-Series

CM75DU-12H  
CM100DU-12H  
CM150DU-12H  
CM200DU-12H  
CM300DU-12H  
CM400DU-12H

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# 600V Dual Power Modules (2 of 2)



## H-Series

CM50DY-12H

CM75DY-12H

CM100DY-12H

CM150DY-12H

CM200DY-12H

CM300DY-12H

CM400DY-12H

# 600V 4-Pack Power Modules

**U-Series**

CM75BU-12H  
CM100BU-12H



# 600V 6-Pack Power Modules



## F-Series

CM75TU-12F  
CM100TU-12F  
CM150TU-12F  
CM200TU-12F

## U-Series

CM75TU-12H  
CM100TU-12H  
CM150TU-12H  
CM200TU-12H

## H-Series

CM15TF-12H  
CM20TF-12H  
CM30TF-12H  
CM50TF-12H  
CM75TF-12H  
CM100TF-12H  
CM150TF-12H

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# 600V Brake Power Modules



## U-Series

CM75E3U-12H  
CM100E3U-12H  
CM150E3U-12H  
CM200E3U-12H  
CM300E3U-12H

## F-Series

CM100E3U-12F  
CM150E3U-12F

# 1200V



- ▶ **Single Power Modules**
- ▶ **Dual Power Modules**
- ▶ **4-Pack Power Modules**
- ▶ **6-Pack Power Modules**
- ▶ **Brake Power Modules**

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# 1200V Single Power Modules



## F-Series

CM400HU-24F  
CM600HU-24F

## U-Series

CM400HU-24H  
CM600HU-24H

## H-Series

CM200HA-24H  
CM300HA-24H  
CM400HA-24H  
CM600HA-24H  
CM800HA-24H  
CM1000HA-24H

# 1200V Dual Power Modules (1 of 2)



## F-Series

CM50DU-24F  
CM75DU-24F  
CM100DU-24F  
CM150DU-24F  
CM200DU-24F  
CM300DU-24F  
CM400DU-24F  
CM600DU-24F

## U-Series

CM50DU-24H  
CM75DU-24H  
CM100DU-24H  
CM150DU-24H  
CM200DU-24H  
CM300DU-24H

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# 1200V Dual Power Modules (2 of 2)



## H-Series

CM50DY-24H

CM75DY-24H

CM100DY-24H

CM150DY-24H

CM200DY-24H

CM300DY-24H

# 1200V 4-Pack Power Modules

U-Series

CM50BU-24H



# 1200V 6-Pack Power Modules



## F-Series

CM50TU-24F  
CM75TU-24F  
CM100TU-24F

## U-Series

CM50TU-24H  
CM75TU-24H  
CM100TU-24H

## H-Series

CM15TF-24H  
CM20TF-24H  
CM30TF-24H  
CM50TF-24H  
CM75TF-24H  
CM100TF-24H

# 1200V Brake Power Modules



## U-Series

CM50E3U-24H

CM75E3U-24H

CM100E3U-24H

CM150E3U-24H

## F-Series

CM75E3U-24F

CM100E3U-24F

CM150E3U-24F

CM200E3U-24F

# 1400V



- ▶ **Single Power Modules**
- ▶ **Dual Power Modules**
- ▶ **6-Pack Power Modules**

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# 1400V Single Power Modules

## H-Series

CM300HA-28H

CM400HA-28H

CM600HA-28H

CM1000HA-28H



# 1400V Dual Power Modules

## H-Series

CM50DY-28H

CM75DY-28H

CM100DY-28H

CM150DY-28H

CM200DY-28H

CM300DY-28H



# 1400V 6-Pack Power Modules

## H-Series

CM50TF-28H

CM75TF-28H

CM100TF-28H





# 1700V



- ▶ **Single Power Modules**
  - ▶ H-Series
  - ▶ HVIGBT-Series
- ▶ **Dual Power Modules**
  - ▶ KA-Series
  - ▶ HVIGBT-Series
- ▶ **6-Pack Power Modules**
  - ▶ KA-Series

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# 1700V Single Power Modules

H-Series

CM400HA-34H



# 1700V Dual Power Modules

## KA-Series

CM100DU-34KA

CM150DU-34KA

CM200DU-34KA

CM300DU-34KA

CM400DU-34KA



# 1700V 6-Pack Power Modules

KA-Series

CM50TU-34KA

CM75TU-34KA





# CIB

(Converter Inverter Brake)

# Modules

## Voltage Rating

- ▶ 600V
- ▶ 1200V

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# 600V



- ▶ **CI (Converter Inverter)**
- ▶ **CIB (Converter Inverter Brake)**

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# 600V CI (Converter Inverter)



## MD-Series

CM10MD1-12H

CM15MD1-12H

CM20MD1-12H

CM30MD1-12H

CM50MD1-12H

CM10MD3-12H

CM15MD3-12H

CM20MD3-12H

CM30MD3-12H

# 600V

## CIB (Converter Inverter Brake)



### AD-Series

CM10AD00-12H

CM15AD00-12H

CM20AD00-12H

CM30AD00-12H

CM50AD00-12H

### MD-Series

CM10MD-12H

CM15MD-12H

CM20MD-12H

CM30MD-12H

CM50MD-12H



# 1200V



- ▶ **CI (Converter Inverter)**
- ▶ **CIB (Converter Inverter Brake)**

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# 1200V CI (Converter Inverter)

MD-Series

CM10MD1-24H



# 1200V CIB (Converter Inverter Brake)



## AD-Series

CM10AD00-24H

CM15AD00-24H

CM25AD00-24H

## MD-Series

CM10MD-24H

CM15MD-24H

CM25MD-24H

# Intelligent Power Modules (IPMs)



- ▶ **General IPM**
- ▶ **ASIPM**
- ▶ **DIP-IPM**
- ▶ **Active Filter IPM**

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# General IPM



- ▶ 600V
- ▶ 1200V

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# 600V



- ▶ **Single IPM (Intelligent Power Module)**
- ▶ **Dual IPM (Intelligent Power Module)**
- ▶ **6-Pack IPM (Intelligent Power Module)**
- ▶ **7-Pack IPM (Intelligent Power Module)**

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# 600V Single IPM

S-Series

PM800HSA060



# 600V Dual IPM

## V-Series

PM400DVA060  
PM600DVA060

## S-Series

PM200DSA060  
PM300DSA060  
PM400DSA060  
PM600DSA060





# 600V 6-Pack IPM (1 of 3)



## V-Series

PM100CVA060  
PM150CVA060  
PM200CVA060  
PM300CVA060

## S-Series

PM10CSJ060  
PM15CSJ060  
PM20CSJ060  
PM30CSJ060  
PM100CSA060  
PM150CSA060  
PM200CSA060

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# 600V 6-Pack IPM (2 of 3)



## S-DASH Series

PM50CSD060	PM50CSE060
PM75CSD060	PM75CSE060
PM100CSD060	PM100CSE060
PM150CSD060	PM150CSE060
PM200CSD060	PM200CSE060
PM300CSD060	PM300CSE060

## S-DASH Servo Series

PM50CBS060
PM75CBS060
PM100CBS060
PM150CBS060
PM200CBS060
PM300CBS060

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# 600V 6-Pack IPM (3 of 3)

## Low Noise Series

PM10CNJ060  
PM15CNJ060  
PM20CNJ060  
PM30CNJ060

## Low Speed (For Air Conditioner)

PM15CTM060  
PM15CTM060-3  
PM20CTM060  
PM20CTM060-3  
PM30CTJ060  
PM30CTJ060-3  
PM50CTJ060-3  
PM50CTK060  
PM75CTK060



# 600V 7-Pack IPM



## V-Series

PM75RVA060

## S-Series

PM15RSF060

PM75RSK060

PM30RSF060

PM100RSA060

PM50RSA060

PM150RSA060

PM50RSK060

PM200RSA060

PM75RSA060

## S-DASH Series

PM50RSD060

PM50RSE060

PM75RSD060

PM75RSE060

PM100RSD060

PM100RSE060

PM150RSD060

PM150RSE060

PM200RSD060

PM200RSE060

PM300RSD060

PM300RSE060

# 1200V



- ▶ **Single IPM (Intelligent Power Module)**
- ▶ **Dual IPM (Intelligent Power Module)**
- ▶ **6-Pack IPM (Intelligent Power Module)**
- ▶ **7-Pack IPM (Intelligent Power Module)**

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# 1200V Single IPM

## S-Series

PM400HSA120

PM600HSA120

PM800HSA120



# 1200V Dual IPM

## V-Series

PM200DVA120

PM300DVA120

## S-Series

PM75DSA120

PM100DSA120

PM150DSA120

PM200DSA120

PM300DSA120



# 1200V 6-Pack IPM (1 of 2)



## V-Series

PM75CVA120  
PM100CVA120  
PM150CVA120

## S-Series

PM10CZF120  
PM15CZF120  
PM75CSA120  
PM100CSA120

## S-DASH Series

PM50CSD120	PM50CSE120
PM75CSD120	PM75CSE120
PM100CSD120	PM100CSE120
PM150CSD120	PM150CSE120

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# 1200V 6-Pack IPM (2 of 2)

## S-DASH Servo Series

PM25CBS120

PM50CBS120

PM75CBS120

PM100CBS120

PM150CBS120



# 1200V 7-Pack IPM



## V-Series

PM50RVA120

## S-Series

PM10RSH120

PM15RSH120

PM25RSB120

PM25RSK120

PM50RSA120

## S-DASH Series

PM50RSD120

PM50RSE120

PM75RSD120

PM75RSE120

PM100RSD120

PM100RSE120

PM150RSD120

PM150RSE120

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# ASIPM



▶ **Guidance**

▶ **600V**

▶ **1200V**

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# Guidance



- **ASIPM PS1103X Series**
- **PS1103X Internal Functions and Package Outlines**
- **Electrical Characteristics**
- **Control Functions of PS1103X**
- **Description of PS1103X Terminals and Related Guidelines**
- **Application Guidelines**

# 600V



## Ver.1

PS11011

PS11012

PS11013

PS11014

PS11015

PS11016

PS11017

## Ver.3

PS11032

PS11033

PS11034

PS11035

PS11036

PS11037

# 1200V



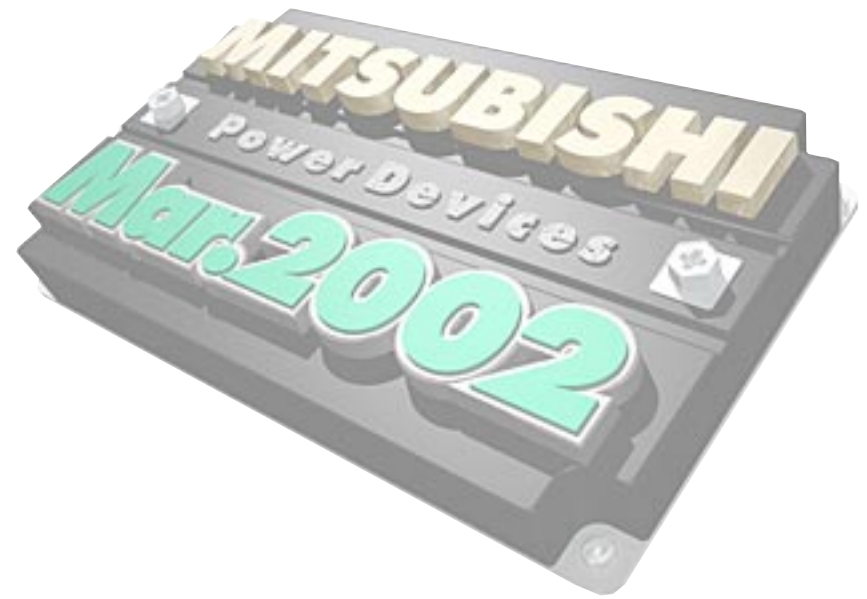
## Ver.1

PS12012-A  
PS12013-A  
PS12014-A  
PS12015-A  
PS12017-A  
PS12018-A

## Ver.3

PS12032  
PS12033  
PS12034  
PS12036  
PS12038

# DIP-IPM



- ▶ **Guidance (DIP-IPM)**
- ▶ **DIP-IPM**
- ▶ **Guidance (Miniature DIP-IPM)**
- ▶ **Miniature DIP-IPM**

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# Guidance (DIP-IPM)



- Chapter 1 DIP-IPM Product Outlines
- Chapter 2 Electrical Characteristics
- Chapter 3 Package
- Chapter 4 Applications
- Chapter 5 Additional Guidelines



# DIP-IPM



## Ver.2 E-Series

(Isolation Voltage 1500Vrms class)

PS21244-E

PS21254-E

PS21245-E

PS21255-E

PS21246-E

(Isolation Voltage 2500Vrms class)

PS21444-E

PS21454-E

PS21445-E

PS21455-E

# Guidance (Miniature DIP-IPM)



- Chapter 1 DIP-IPM Product Outlines
- Chapter 2 Electrical Characteristics
- Chapter 3 Package
- Chapter 4 Applications
- Chapter 5 Additional Guidelines

# Miniature DIP-IPM (1 of 2)



## Ver.2 G-Series

(Isolation Voltage 1500Vrms class)

PS20341-G

PS20351-G

PS21342-G

PS21352-G

PS21343-G

PS21353-G

(Isolation Voltage 2500Vrms class)

PS21542-G

PS21552-G

PS21543-G

PS21553-G

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# Miniature DIP-IPM (2 of 2)



## Ver.2 N-Series

(Isolation Voltage 1500Vrms class)

PS20341-N

PS20351-N

PS21342-N

PS21352-N

PS21343-N

PS21353-N

(Isolation Voltage 2500Vrms class)

PS21542-N

PS21552-N

PS21543-N

PS21553-N

# Active Filter IPM



- ▶ **Guidance**
- ▶ **A/F IPM**

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# Guidance



- **Chapter 1**    **How to Use Active Filter IPM**
- **Chapter 2**    **Operating Waveform**
- **Chapter 3**    **Characteristics**
- **Chapter 4**    **Protection Feature**
- **Chapter 5**    **Fault Signal (Fo) Output Conditions and Timing**
- **Chapter 6**    **Precautions**

# A/F IPM



PM52AUBW060

# Hybrid ICs



- ▶ **Driver for Power Modules**
- ▶ **Power Supply for Power Modules**

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# Driver for Power Modules



## For Transistor Modules

M57915L

M57916L

M57917L

M57951L

M57955L

M57925L

M57950L

## For IGBT Modules

M57957L

M57958L

M57959L

M57962L

M57160AL-01

M57161L-01

M57175L-01

# Power Supply for Power Modules



## For IGBT Modules

M57145L-01

M57115L-01

M57116L-01

## For IPM

M57184N-715

M57146U-01

M57147AU-01

M57120L-01

M57140-01

# Power Modules BIPOLAR



- ▶ **Guidance**
- ▶ **Transistor Modules**
- ▶ **Thyristor Modules**
- ▶ **Diode Modules**

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# Guidance



- **How to Name of Mitsubishi Power Modules**
- **Structure of Mitsubishi Power Modules**
- **Power Module Applications**
- **Basic Circuit Example of Main Power Module Applications**
- **Application of Power Modules to AC Motor Controllers**
- **Symbology**
- **Measurement Circuit & Wave Forms**
- **How to use Transistor Modules**

# Transistor Modules



## Voltage Rating

- ▶ **350V**
- ▶ **600V**
- ▶ **1000V**
- ▶ **1200V**
- ▶ **1600V**

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# 350V Single Power Modules



QM100HC-M

QM300HC-M

QM600HD-M

# 600V



- ▶ **Single Power Modules**
- ▶ **Dual Power Modules**
- ▶ **6-Pack Power Modules**

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# 600V Single Power Modules



1 in 1

QM10HA-HB

QM100HY-H

QM15HA-H

QM150HY-H

QM30HA-H

QM200HA-HK

QM50HA-H

QM400HA-H

QM75HA-H

QM500HA-H



# 600V Dual Power Modules



## DOUBLE ARMS (Series)

QM15DX-H  
QM20DX-H  
QM30DY-H  
QM50DY-H

QM75DY-H  
QM100DY-HK  
QM150DY-HK

# 600V 6-Pack Power Modules



QM30TF-HB

QM30TX-H

QM50TX-H

QM75TF-HB

QM75TX-H

QM100TX1-H

# 1000V



- ▶ **Single Power Modules**
- ▶ **Dual Power Modules**
- ▶ **6-Pack Power Modules**

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# 1000V Single Power Modules

1 in 1

QM10HB-2H

QM30HY-2H

QM50HY-2H

QM100HY-2H

QM150HY-2H

QM200HA-2H

QM300HA-2H

QM400HA-2H



# 1000V Dual Power Modules



QM30DY-2H

QM50DY-2H

QM75DY-2H

QM100DY-2HK

QM150DY-2HK

QM200DY-2H

QM300DY-2H

# 1000V 6-Pack Power Modules

QM50TB-2H



# 1200V



## ▶ Dual Power Modules

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# 1200V Dual Power Modules



QM75DY-24

QM100DY-24K

QM200DY-24

QM300DY-24



# 1600V Single Power Modules

QM30HC-2H



# Thyristor Modules



## Voltage Rating

- ▶ 300V
- ▶ 400V
- ▶ 800V
- ▶ 1200V
- ▶ 1600V

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# 300V



**Anode Common, 3 in 1**

TM60SA-6

TM90SA-6

TM150SA-6

# 400V (1 of 2)



## Anode Common, 3 in 1

TM60SZ-M  
TM100SZ-M

## 2 in 1

TM20DA-M,-H  
TM25DZ/CZ-M,-H  
TM55DZ/CZ-M,-H  
TM90DZ/CZ-M,-H  
TM130DZ/CZ/PZ-M,-H  
TM200DZ/CZ/PZ-M,-H,-24,-2H  
TM400DZ/CZ/PZ/UZ-M,-H,-24,-2H

## 1 in 1

TM400HA-M,-H,-24,-2H

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# 400V (2 of 2)



## Combination, 1 in 1

TM20RA-M,-H

TM25RZ/EZ-M,-H

TM55RZ/EZ-M,-H

TM90RZ/EZ-M,-H

TM130RZ/EZ/GZ-M,-H

TM200RZ/EZ/GZ-M,-H,-24,-2H

## Combination, 3Ø Bridge

TM10T3B-M,-H

# 800V (1 of 2)



## 2 in 1

TM20DA-M,-H

TM25DZ/CZ-M,-H

TM55DZ/CZ-M,-H

TM90DZ/CZ-M,-H

TM130DZ/CZ/PZ-M,-H

TM200DZ/CZ/PZ-M,-H,-24,-2H

TM400DZ/CZ/PZ/UZ-M,-H,-24,-2H

## 1 in 1

TM400HA-M,-H,-24,-2H

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# 800V (2 of 2)



## Combination, 1 in 1

TM20RA-M,-H

TM25RZ/EZ-M,-H

TM55RZ/EZ-M,-H

TM90RZ/EZ-M,-H

TM130RZ/EZ/GZ-M,-H

TM200RZ/EZ/GZ-M,-H,-24,-2H

## Combination, 3Ø Bridge

TM10T3B-M,-H

# 1200V (1 of 2)



## 2 in 1

TM25DZ/CZ-24,-2H

TM55DZ/CZ-24,-2H

TM90DZ/CZ-24,-2H

TM130DZ/CZ/PZ-24,-2H

TM200DZ/CZ/PZ-M,-H,-24,-2H

TM400DZ/CZ/PZ/UZ-M,-H,-24,-2H

## 1 in 1

TM400HA-M,-H,-24,-2H

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# 1200V (2 of 2)



## Combination, 1 in 1

TM25RZ/EZ-24,-2H

TM55RZ/EZ-24,-2H

TM90RZ/EZ-24,-2H

TM130RZ/EZ/GZ-24,-2H

TM200RZ/EZ/GZ-M,-H,-24,-2H

# 1600V (1 of 2)



## 2 in 1

TM25DZ/CZ-24,-2H

TM55DZ/CZ-24,-2H

TM90DZ/CZ-24,-2H

TM130DZ/CZ/PZ-24,-2H

TM200DZ/CZ/PZ-M,-H,-24,-2H

TM400DZ/CZ/PZ/UZ-M,-H,-24,-2H

## 1 in 1

TM400HA-M,-H,-24,-2H

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# 1600V (2 of 2)



## Combination, 1 in 1

TM25RZ/EZ-24,-2H

TM55RZ/EZ-24,-2H

TM90RZ/EZ-24,-2H

TM130RZ/EZ/GZ-24,-2H

TM200RZ/EZ/GZ-M,-H,-24,-2H

# DIODE Modules



## Voltage Rating

- ▶ **RECTIFIER DIODE Modules**
- ▶ **FAST RECOVERY DIODE Modules**
- ▶ **RECTIFIER DIODE Modules for ASIPM**

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# RECTIFIER DIODE Modules



## Voltage Rating

- ▶ 400V
- ▶ 800V
- ▶ 1200V
- ▶ 1600V
- ▶ 2000V

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# 400V (1 of 2)



## 3Ø Bridge

RM10TA-M,-H

RM30TA-M,-H

RM50TC-M,-H,-24,-2H

## 2 in 1

RM30DZ/CZ-M,-H

RM60DZ/CZ-M,-H

RM100DZ/CZ-M,-H

RM150DZ/CZ/UZ-M,-H,-24,-2H

RM250DZ/CZ/UZ-M,-H,-24,-2H

RM500DZ/UZ-M,-H,-24,-2H

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# 400V (2 of 2)

1 in 1

RM500HA-M,-H,-24,-2H



# 800V (1 of 2)



## 3Ø Bridge

RM10TA-M,-H

RM15TA,-H

RM20TPM,-H

RM30TA-M,-H

RM30TB,-H

RM30TPM,-H

RM50TC-M,-H,-24,-2H

RM75TC-M,-H,-24,-2H

RM75TPM,-H,-2H

## 2 in 1

RM30DZ/CZ-M,-H

RM60DZ/CZ-M,-H

RM100DZ/CZ-M,-H

RM150DZ/CZ/UZ-M,-H,-24,-2H

RM250DZ/CZ/UZ-M,-H,-24,-2H

RM500DZ/UZ-M,-H,-24,-2H

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# 800V (2 of 2)

1 in 1

RM500HA-M,-H,-24,-2H



# 1200V (1 of 2)



## 3Ø Bridge

RM10TA-24,-2H

RM15TA-24,-2H

RM20TA-24,-2H

RM20TPM-24,-2H

RM30TC-24,-2H

RM50TC-M,-H,-24,-2H

RM75TC-M,-H,-24,-2H

## 2 in 1

RM30DZ/CZ-24,-2H

RM60DZ/CZ-24,-2H

RM100DZ/CZ-24,-2H

RM150DZ/CZ/UZ-M,-H,-24,-2H

RM250DZ/CZ/UZ-M,-H,-24,-2H

RM500DZ/UZ-M,-H,-24,-2H

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# 1200V (2 of 2)

1 in 1

RM500HA-M,-H,-24,-2H



# 1600V (1 of 2)



## 3Ø Bridge

RM10TA-24,-2H

RM15TA-24,-2H

RM20TA-24,-2H

RM20TPM-24,-2H

RM30TC-24,-2H

RM50TC-M,-H,-24,-2H

RM75TC-M,-H,-24,-2H

RM75TPM,-H,-2H

## 2 in 1

RM30DZ/CZ-24,-2H

RM60DZ/CZ-24,-2H

RM100DZ/CZ-24,-2H

RM150DZ/CZ/UZ-M,-H,-24,-2H

RM250DZ/CZ/UZ-M,-H,-24,-2H

RM500DZ/UZ-M,-H,-24,-2H

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# 1600V (2 of 2)

1 in 1

RM500HA-M,-H,-24,-2H



# 2000V



## 3Ø Bridge

RM15TC-40  
RM30TC-40

## 2 in 1

RM50D2Z-40  
RM100D2Z-40

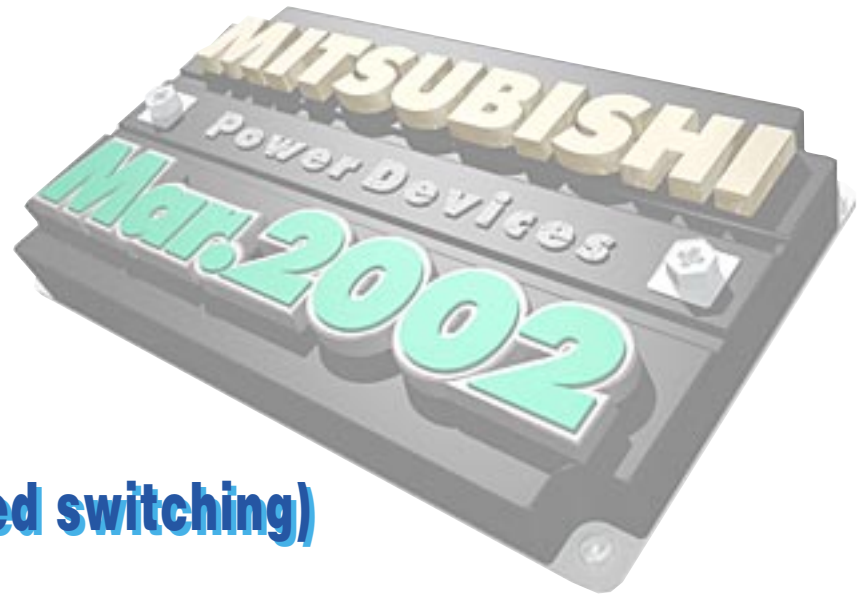
# **FAST RECOVERY DIODE Modules**



- ▶ **F Series FAST RECOVERY DIODE Modules** (for Bipolar speed switching)
- ▶ **S Series FAST RECOVERY DIODE Modules** (for IGBT speed switching)
- ▶ **For Welder FAST RECOVERY DIODE Modules**

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# F Series FAST RECOVERY DIODE Modules (for Bipolar speed switching)



## Voltage Rating

- ▶ 600V
- ▶ 1000V
- ▶ 1200V

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# 600V



RM20HA-XXF

RM50HA-XXF

RM100HA-XXF

RM20DA/CA/C1A-XXF

RM50DA/CA/C1A-XXF

RM100CA/C1A-XXF

# 1000V



RM20HA-XXF

RM50HA-XXF

RM100HA-XXF

RM200HA-20F,-24F

RM20DA/CA/C1A-XXF

RM50DA/CA/C1A-XXF

RM100CA/C1A-XXF

RM200DA-20F,-24F

# 1200V



RM20HA-XXF

RM50HA-XXF

RM100HA-XXF

RM200HA-20F, -24F

RM300HA-24F

RM20DA/CA/C1A-XXF

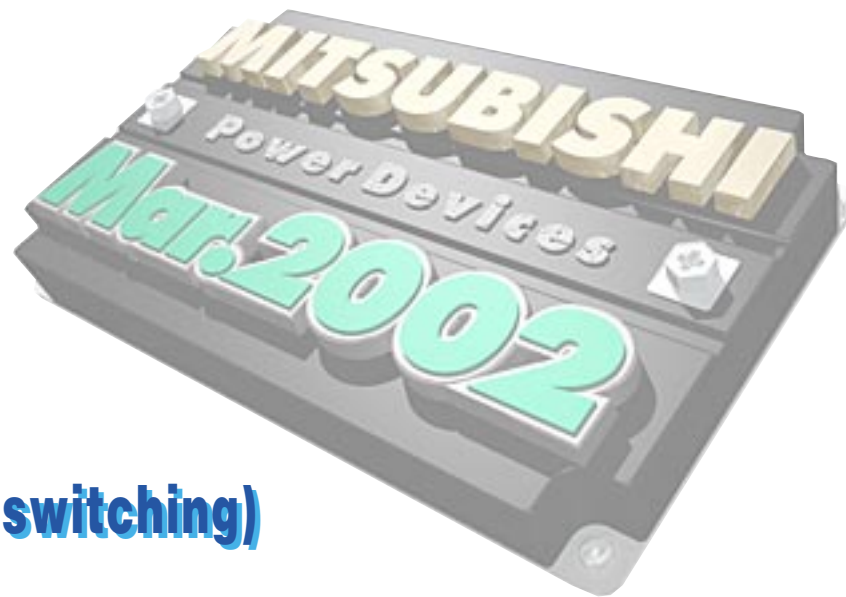
RM50DA/CA/C1A-XXF

RM100CA/C1A-XXF

RM200DA-20F, -24F

RM20DA/CA/C1A-XXS

# **S Series FAST RECOVERY DIODE Modules** (for IGBT speed switching)



## **Voltage Rating**

- ▶ **300V**
- ▶ **600V**
- ▶ **1000V**
- ▶ **1200V**
- ▶ **1700V**
- ▶ **3300V**

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# 300V



RM20DA/CA/C1A-XXS  
RM50DA/CA/C1A-XXS

# 600V



RM50HG-12S

RM20DA/CA/C1A-XXS

RM50DA/CA/C1A-XXS

**1000V**



RM50DA/CA/C1A-XXS

# 1200V



RM25HG-24S  
RM400HA-24S



# 1700V



RM35HG-34S  
RM400HV-34S

# For Welder DIODE Modules



RM300CA-9W

RM60SZ-6S,-6R

RM100SZ-6S,-6R

# RECTIFIER DIODE Modules for ASIPM



## Voltage Rating

- ▶ 800V
- ▶ 1600V

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**800V**



RM10TN-H  
RM20TN-H

# 1600V



RM10TN-2H  
RM25TN-2H