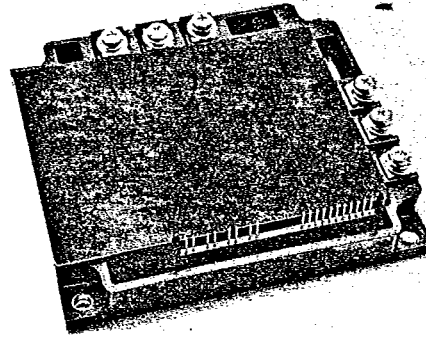


T-33-35

FUJI
ELECTRIC

IPM
Intelligent
Power
Modules

600V
1200V



IPM advantages:

- Simplify controller design
- Shorten development time

IPMs are used in:

- Servo systems
- General-purpose drives
- Heat pump/compressor drives

IPMs are designed for:

- 240VAC (600V) systems
- 480VAC (1200V) systems (1992)
- Current ranges from 10A to 150A
- Typical switching frequencies of 1kHz (BJT) to 20kHz (IGBT)

Fuji's Intelligent Power Modules are state-of-the-art power electronics. A complete output section, in the form of a 3-phase inverter (six transistors) and a shunt regulator (one transistor), is included. Users need provide only four floating power supplies (9.5V at 100mA). Base (gate) drive, isolation, protection and diagnostics are included. The IPM is self-protected against over-current and over-temperature.

IPM
Intelligent Power Modules

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Collmer Semiconductor, Inc.

14368 PROTON RD • DALLAS, TEXAS 75244 • 214/233-1589
FAX 214/233-0481

IPM Intelligent Power Modules

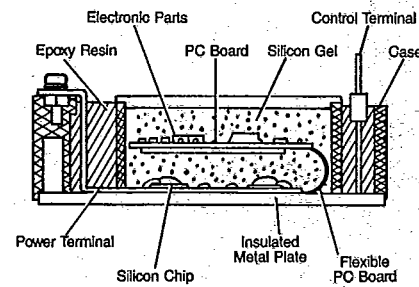
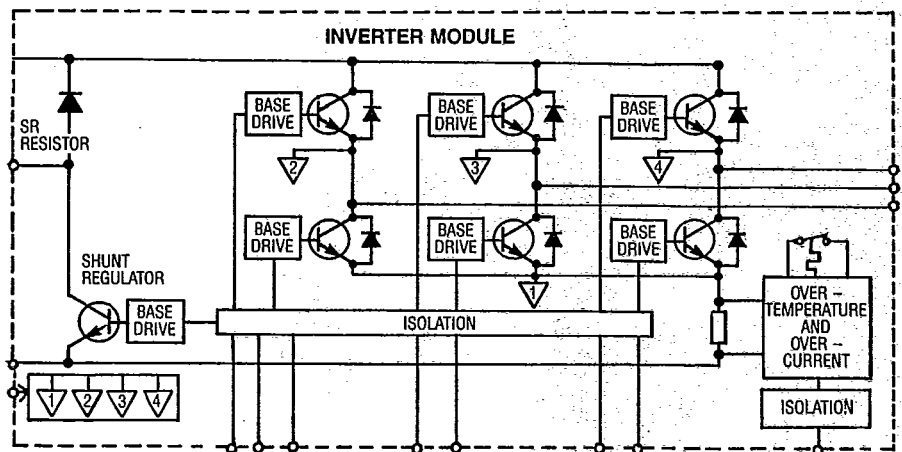
T-33-35

COLLMER SEMICONDUCTOR INC 34E D ■ 2238792 0001566-2 ■ COL

| Type | Part Number | Power Transistor | | | | | | | | | Pre-Driver | Over-Heating Protection | Over-Current Protection | Alarm Output | Pkg. | | |
|------|---------------|---------------------|--------------------|--------------------|----------------------|-----------------------|---------------------|---------------------|--------------------|--------------------|------------|-------------------------|-------------------------|--------------|------|---------------------|----------------------|
| | | Inverter | | | | | | Shunt Regulator | | | | | | | | | |
| | | V _{CC} (V) | I _C (A) | P _C (W) | t _{on} (μs) | t _{stg} (μs) | t _f (μs) | V _{CC} (V) | I _C (A) | P _C (W) | | | | | | V _{od} (V) | I _{pd} (mA) |
| BJT | 6D10A-050EJR | 450 | 10 | 40 | 3 | 10 | 2 | - | - | - | 10 | 200 | 90 | 15 | 50 | 10-30 | 1 |
| | 6D15A-050EJR | 450 | 15 | 60 | 3 | 10 | 2 | - | - | - | 10 | 200 | 90 | 23 | 50 | 10-30 | 1 |
| | 6D20A-050EJR | 450 | 20 | 80 | 3 | 10 | 2 | - | - | - | 10 | 200 | 90 | 30 | 50 | 10-30 | 1 |
| BJT | 7D30A-050EHR | 450 | 30 | 150 | 8 | 13 | 3 | 450 | 20 | 100 | 9 | 200 | 90 | 45 | 50 | 10-30 | 2 |
| | 7D50A-050EHR | 450 | 50 | 200 | 8 | 13 | 3 | 450 | 20 | 100 | 9 | 200 | 90 | 75 | 50 | 10-30 | 2 |
| | 7D75A-050EHR | 450 | 75 | 240 | 8 | 13 | 3 | 450 | 20 | 100 | 9 | 200 | 90 | 113 | 50 | 10-30 | 2 |
| | 7D100A-050EHR | 450 | 100 | 350 | 8 | 15 | 3 | 450 | 50 | 150 | 9 | 200 | 90 | 150 | 50 | 10-30 | 3 |
| | 7D150A-050EHR | 450 | 150 | 400 | 8 | 15 | 3 | 450 | 50 | 150 | 9 | 200 | 90 | 225 | 50 | 10-30 | 3 |
| IGBT | 7MB30A-050EHR | 450 | 30 | 150 | 6 | 6 | 1 | 450 | 20 | 100 | 15 | 30 | 90 | 45 | 20 | 10-30 | NEW |
| | 7MB50A-050EHR | 450 | 50 | 200 | 6 | 6 | 1 | 450 | 20 | 100 | 15 | 30 | 90 | 75 | 20 | 10-30 | NEW |
| | 7MB75A-050EHR | 450 | 75 | 240 | 6 | 6 | 1 | 450 | 20 | 100 | 15 | 30 | 90 | 113 | 20 | 10-30 | NEW |

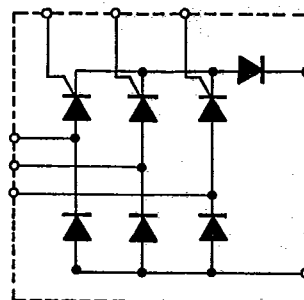
INTEGRATED FUNCTIONS

| Functions | Components or Circuits | No |
|----------------|--|----|
| Power Devices | Power Transistors for Inverter | 6 |
| | Fast-Recovery Diodes for Free Wheeling | 6 |
| | Power Transistor for DC Link Dynamic Brake | 1 |
| | Snubber Diode for DC Link Dynamic Brake | 1 |
| Base Drive | Forward Base Drive Circuit | 7 |
| | Reverse Base Drive Circuit | 7 |
| Sensor | Current Sensor | 1 |
| | Temperature Sensor | 3 |
| Isolation | Opto-Coupler | 8 |
| Power Supply | Reverse Base Drive Power Supply | 4 |
| | Series Regulator For Logic Circuits | 1 |
| Protection | Over-Current Trip Circuit | 1 |
| | Over-Heating Trip Circuit | 1 |
| Self Diagnosis | Alarm Signal Output and Latch Circuit | 1 |
| | Self-Reset Circuit | 1 |

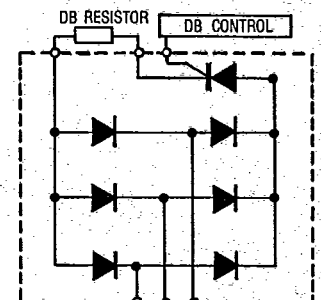


| CONVERTER AND DYNAMIC BRAKE MODULES | | | |
|-------------------------------------|----------------------|------------------------|-----|
| Part Number | V _{RRM} (V) | I _{O(AV)} (A) | PKG |
| 4R3T120Y-080 | 800 | 20 | 4 |
| 4R3T130Y-080 | 800 | 30 | 4 |
| 4R3T160Y-080 | 800 | 60 | 4 |
| 6R1T130Y-080 | 800 | 30 | 4 |

CONVERTER MODULE



DYNAMIC BRAKE MODULE



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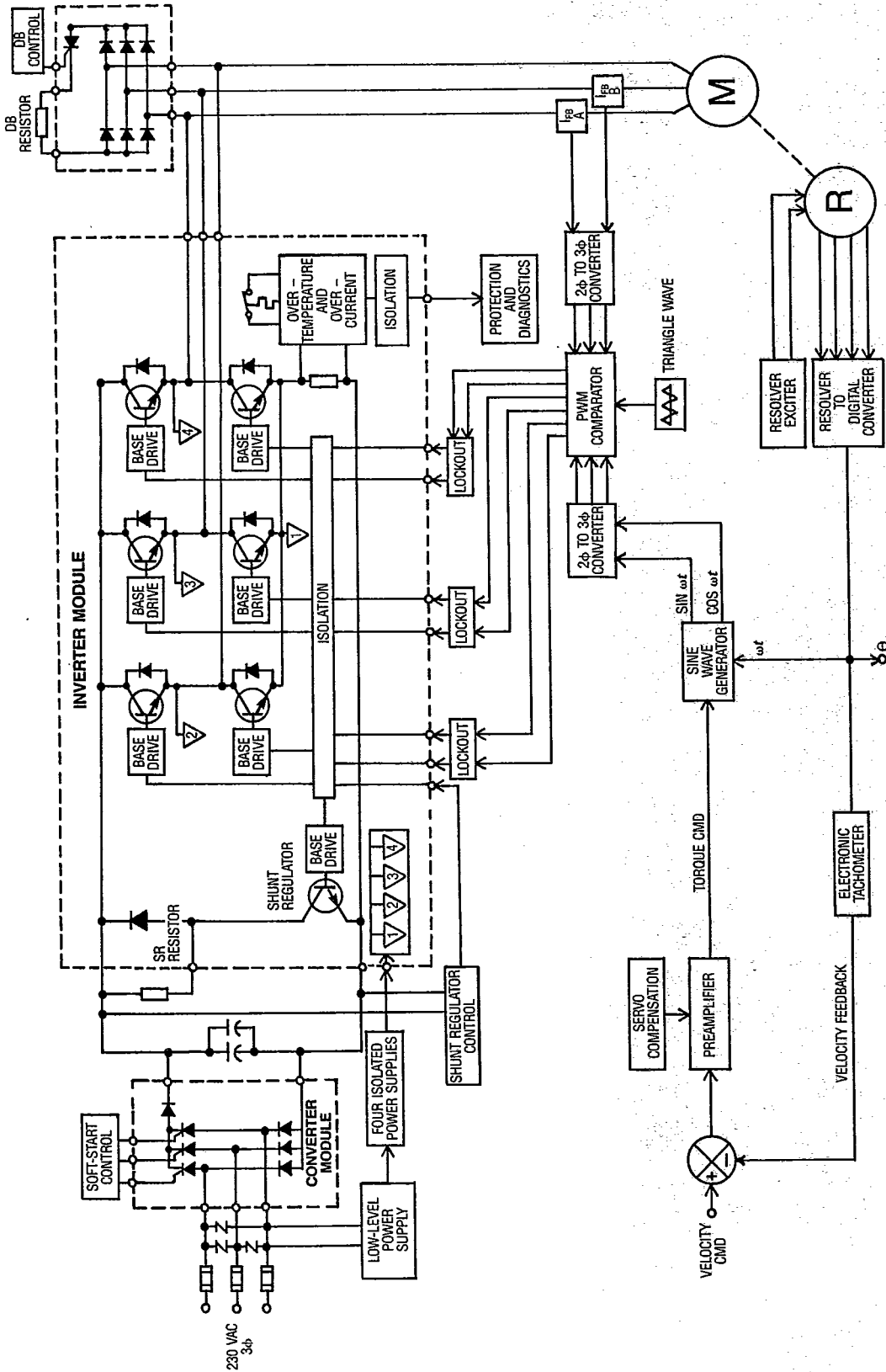
Collmer Semiconductor, Inc.



FUJICOLLMER




INTELLIGENT POWER MODULE



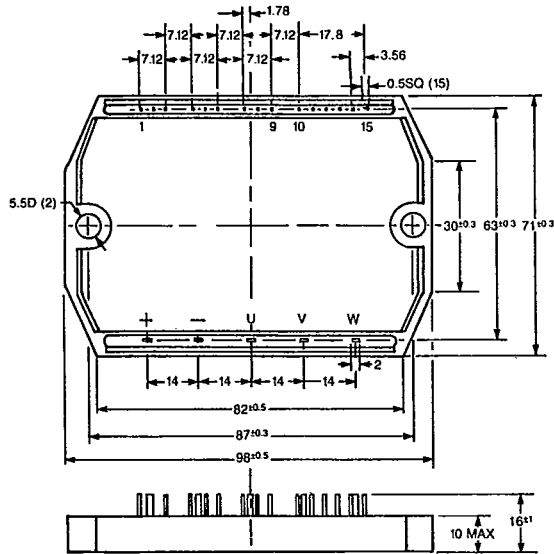
PM SYNCHRONOUS AC MOTOR CONTROLLER
(ONE OF MANY IMPLEMENTATIONS)

Intelligent Power Modules

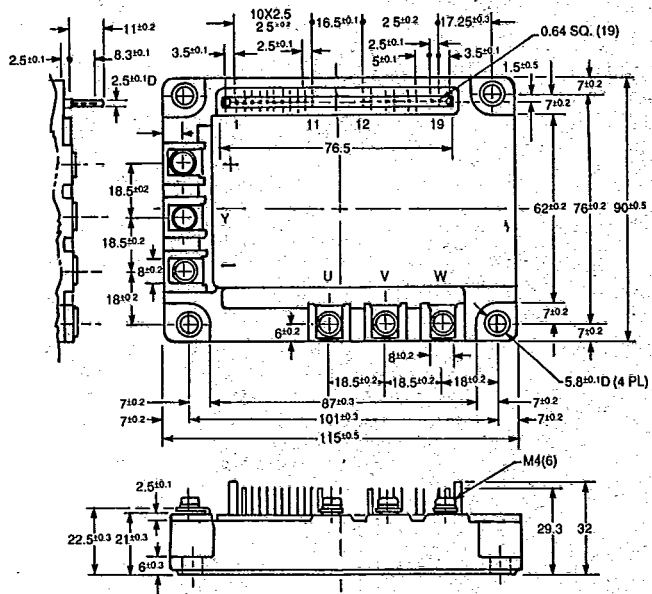
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OUTLINE DRAWINGS

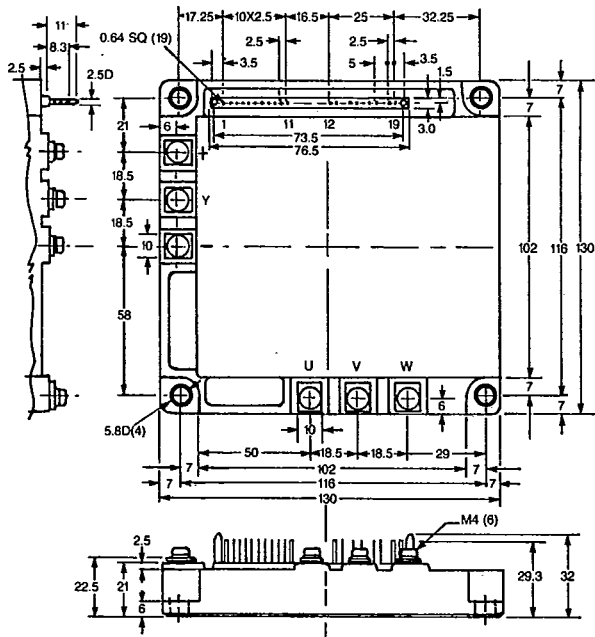
DIMENSIONS IN MILLIMETERS



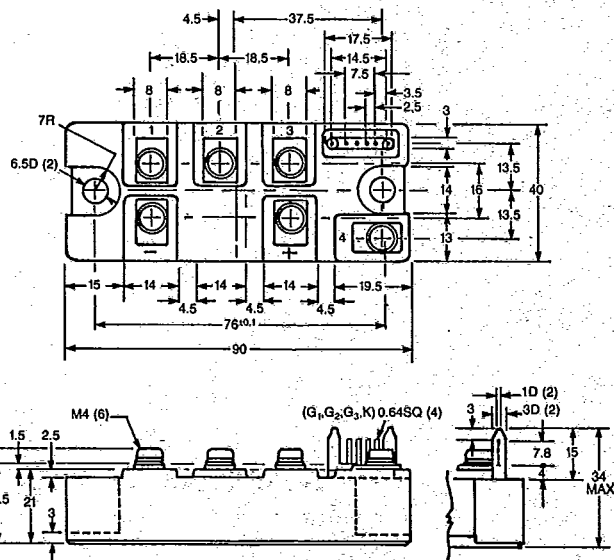
PKG.1



PKG.2



PKG.3



PKG.4

COLLMER SEMICONDUCTOR, INC reserves the right to make changes in these specifications at any time and without notice in order to supply the best product possible