

QM30DY-H

MEDIUM POWER SWITCHING USE
INSULATED TYPE

QM30DY-H



- **IC** Collector current **30A**
- **VCEX** Collector-emitter voltage **600V**
- **hFE** DC current gain **75**
- **Insulated Type**
- **UL Recognized**

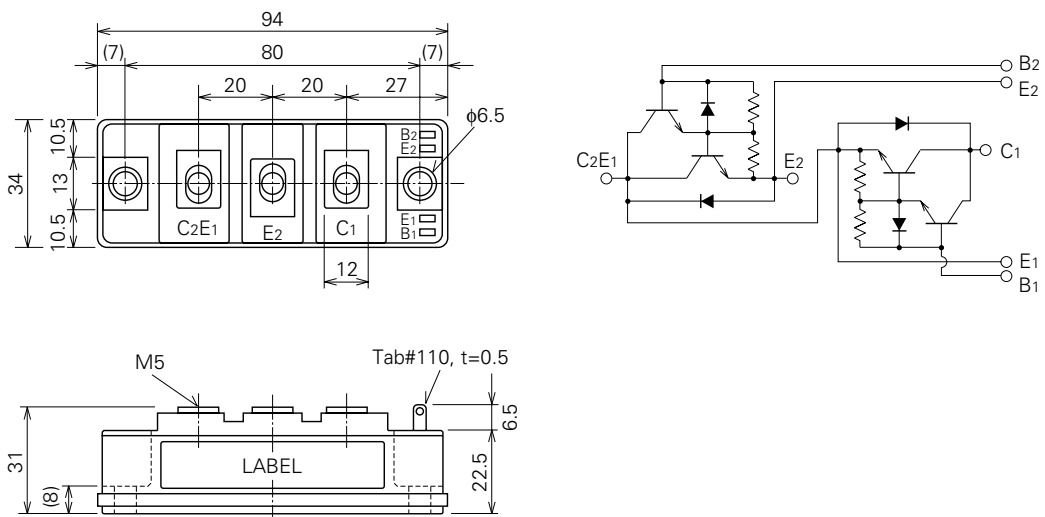
Yellow Card No. E80276 (N)
File No. E80271

APPLICATION

AC motor controllers, UPS, CVCF, DC motor controllers, NC equipment, Welders

OUTLINE DRAWING & CIRCUIT DIAGRAM

Dimensions in mm



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ABSOLUTE MAXIMUM RATINGS (T_j=25°C, unless otherwise noted)

| Symbol | Parameter | Conditions | Ratings | Unit |
|------------------------|---|---|-----------|-------|
| V _{CEX} (SUS) | Collector-emitter voltage | I _C =1A, V _{EB} =2V | 600 | V |
| V _{CEX} | Collector-emitter voltage | V _{EB} =2V | 600 | V |
| V _{CBO} | Collector-base voltage | Emitter open | 600 | V |
| V _{EBO} | Emitter-base voltage | Collector open | 7 | V |
| I _C | Collector current | DC | 30 | A |
| -I _C | Collector reverse current | DC (forward diode current) | 30 | A |
| P _C | Collector dissipation | T _C =25°C | 250 | W |
| I _B | Base current | DC | 1.8 | A |
| -I _{CSM} | Surge collector reverse current (forward diode current) | Peak value of one cycle of 60Hz (half wave) | 300 | A |
| T _j | Junction temperature | | -40~+150 | °C |
| T _{stg} | Storage temperature | | -40~+125 | °C |
| V _{iso} | Isolation voltage | Charged part to case, AC for 1 minute | 2500 | V |
| — | Mounting torque | Main terminal screw M5 | 1.47~1.96 | N·m |
| | | | 15~20 | kg·cm |
| | | Mounting screw M6 | 1.96~2.94 | N·m |
| | | | 20~30 | kg·cm |
| — | Weight | Typical value | 210 | g |

ELECTRICAL CHARACTERISTICS (T_j=25°C, unless otherwise noted)

| Symbol | Parameter | Test conditions | Limits | | | Unit |
|-------------------------|--|---|--------|------|------|------|
| | | | Min. | Typ. | Max. | |
| I _C EX | Collector cutoff current | V _{CE} =600V, V _{EB} =2V | — | — | 1.0 | mA |
| I _C BO | Collector cutoff current | V _{CB} =600V, Emitter open | — | — | 1.0 | mA |
| I _E BO | Emitter cutoff current | V _{EB} =7V | — | — | 200 | mA |
| V _{CE} (sat) | Collector-emitter saturation voltage | I _C =30A, I _B =0.4A | — | — | 2.0 | V |
| V _{BE} (sat) | Base-emitter saturation voltage | | — | — | 2.5 | V |
| -V _{CEO} | Collector-emitter reverse voltage | -I _C =30A (diode forward voltage) | — | — | 1.85 | V |
| h _{FE} | DC current gain | I _C =30A, V _{CE} =2V/5V | 75/100 | — | — | — |
| t _{on} | Switching time | V _{CC} =600V, I _C =30A, I _{B1} =-I _{B2} =0.6A | — | — | 1.5 | μs |
| t _s | | | — | — | 12 | μs |
| t _f | | | — | — | 3.0 | μs |
| R _{th} (j-c) Q | Thermal resistance (junction to case) | Transistor part (per 1/2 module) | — | — | 0.5 | °C/W |
| R _{th} (j-c) R | | Diode part (per 1/2 module) | — | — | 2.0 | °C/W |
| R _{th} (c-f) | Contact thermal resistance (case to fin) | Conductive grease applied (per 1/2 module) | — | — | 0.15 | °C/W |