

QM30HA-HB

MEDIUM POWER SWITCHING USE
INSULATED TYPE

QM30HA-HB



- **IC** Collector current **30A**
- **V_{CEX}** Collector-emitter voltage **600V**
- **h_{FE}** DC current gain **750**
- **Insulated Type**
- **UL Recognized**

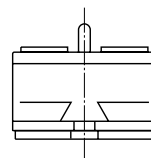
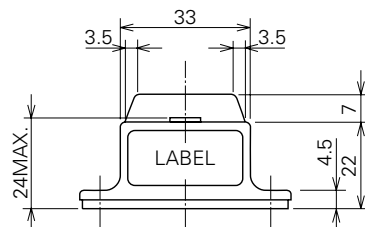
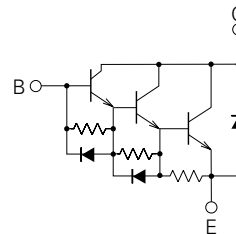
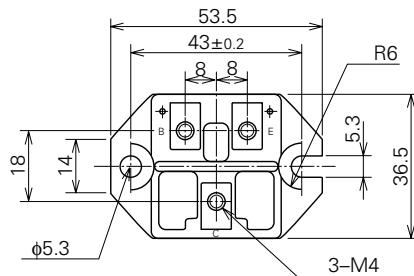
Yellow Card No. E80276 (N)
File No. E80271

APPLICATION

Inverters, Servo drives, UPS, 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 _{CE(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)	250	A
P _C	Collector dissipation	T _C =25°C	1.8	W
I _B	Base current	DC	30	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 M4	0.98~1.47	N·m
			10~15	kg·cm
		Mounting screw M5	1.47~1.96	N·m
			15~20	kg·cm
B(E) terminal screw M4	0.98~1.47	N·m		
	10~15	kg·cm		
—	Weight	Typical value	90	g

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

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I _{CEX}	Collector cutoff current	V _{CE} =600V, V _{EB} =2V	—	—	1.0	mA
I _{CBO}	Collector cutoff current	V _{CB} =600V, Emitter open	—	—	1.0	mA
I _{EBO}	Emitter cutoff current	V _{EB} =7V, Collector open	—	—	80	mA
V _{CE(sat)}	Collector-emitter saturation voltage	I _C =30A, I _B =40mA	—	—	2.5	V
V _{BE(sat)}	Base-emitter saturation voltage		—	—	3.0	V
-V _{CEO}	Collector-emitter reverse voltage	I _C =-30A (diode forward voltage)	—	—	1.8	V
h _{FE}	DC current gain	I _C =30A, V _{CE} =2.5V	750	—	—	—
t _{on}	Switching time	V _{CC} =300V, I _C =30A, I _{B1} =60mA, -I _{B2} =0.6A	—	—	2.0	μs
t _s			—	—	8.0	μs
t _f			—	—	3.0	μs
			—	—	—	—
R _{th(j-c) Q}	Thermal resistance (junction to case)	Transistor part	—	—	0.5	°C/W
R _{th(j-c) R}		Diode part	—	—	2.0	°C/W
R _{th(c-f)}	Contact thermal resistance (case to fin)	Conductive grease applied	—	—	0.15	°C/W