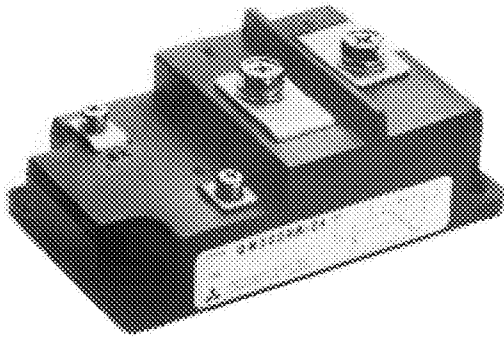


QM300HA-24

HIGH POWER SWITCHING USE
INSULATED TYPE

QM300HA-24



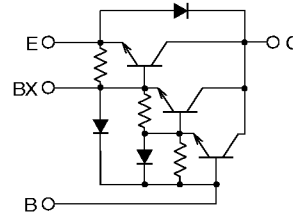
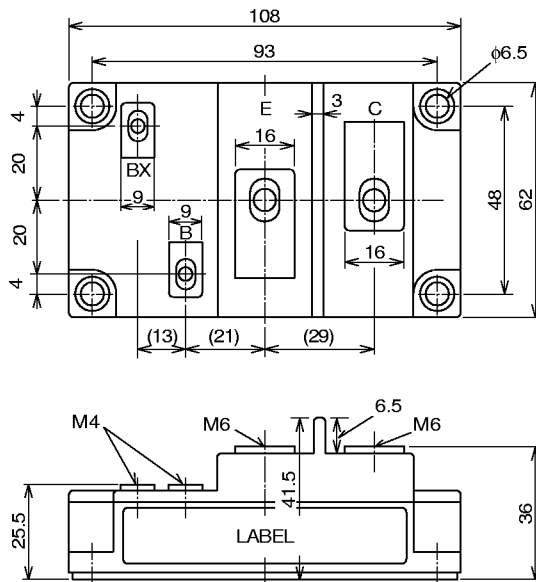
- **I_c** Collector current **300A**
- **V_{CEX}** Collector-emitter voltage **1200V**
- **h_{FE}** DC current gain..... **75**
- **Insulated Type**
- **UL Recognized**
Yellow Card No. E80276 (N)
File No. E80271

APPLICATION

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

OUTLINE DRAWING & CIRCUIT DIAGRAM

Dimensions in mm



QM300HA-24

**HIGH POWER SWITCHING USE
INSULATED TYPE**

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	1200	V
V _{CEX}	Collector-emitter voltage	V _{EB} =2V	1200	V
V _{CB0}	Collector-base voltage	Emitter open	1200	V
V _{EB0}	Emitter-base voltage	Collector open	7	V
I _C	Collector current	DC	300	A
-I _C	Collector reverse current	DC (forward diode current)	300	A
P _C	Collector dissipation	T _C =25°C	1980	W
I _B	Base current	DC	16	A
-I _{CSM}	Surge collector reverse current (forward diode current)	Peak value of one cycle of 60Hz (half wave)	3000	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 M6	1.96~2.94	N·m
			20~30	kg·cm
		Mounting screw M6	1.96~2.94	N·m
			20~30	kg·cm
		B terminal screw M4	0.98~1.47	N·m
			10~15	kg·cm
BX terminal screw M4	0.98~1.47	N·m		
	10~15	kg·cm		
—	Weight	Typical value	460	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} =1200V, V _{EB} =2V	—	—	4.0	mA
I _{CB0}	Collector cutoff current	V _{CB} =1200V, Emitter open	—	—	4.0	mA
I _{EB0}	Emitter cutoff current	V _{EB} =7V	—	—	400	mA
V _{CE(sat)}	Collector-emitter saturation voltage	I _C =300A, I _B =6A	—	—	3.0	V
V _{BE(sat)}	Base-emitter saturation voltage		—	—	3.5	V
-V _{CEO}	Collector-emitter reverse voltage	-I _C =300A (diode forward voltage)	—	—	1.8	V
h _{FE}	DC current gain	I _C =300A, V _{CE} =5V	75	—	—	—
t _{on}	Switching time	V _{CC} =600V, I _C =300A, I _{B1} =-I _{B2} =6A	—	—	3.0	μs
t _s			—	—	15	μs
t _f			—	—	3.0	μs
R _{th(j-c)Q}	Thermal resistance (junction to case)	Transistor part	—	—	0.063	°C/W
R _{th(j-c)R}		Diode part	—	—	0.3	°C/W
R _{th(c-f)}	Contact thermal resistance (case to fin)	Conductive grease applied	—	—	0.04	°C/W