

TRANSISTOR MODULE

QCA100A/QBB100A40/60

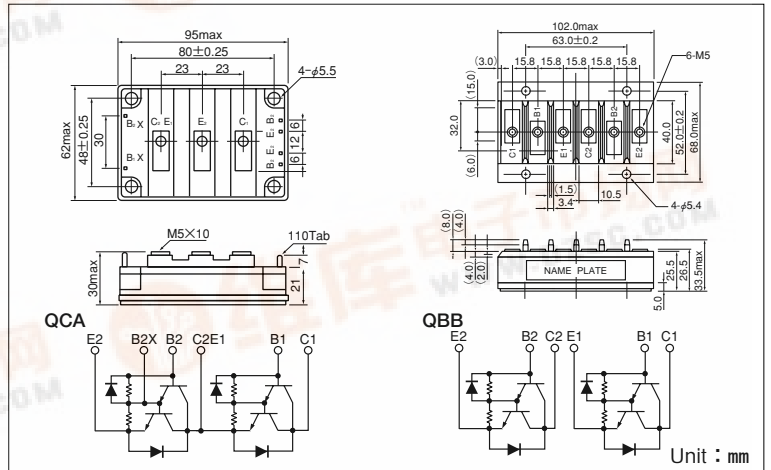
UL;E76102 (M)

QCA100A and QBB100A is a dual Darlington power transistor modules with two high speed, high power Darlington transistors. Each transistor has a reverse paralleled fast recovery diode.

- QCA100A...Series-connected type
- QBB100A...Separate Type
- $I_C=100A$, $V_{CEX}=400/600V$
- Low saturation voltage for higher efficiency.
- Isolated mounting base
- V_{EBO} 10V for faster switching speed.

(Applications)

Motor Control (VVF), AC/DC Servo, UPS, Switching Power Supply, Ultrasonic Application



Maximum Ratings

(Tj=25°C unless otherwise specified)

Symbol	Item	Conditions	Ratings		Unit
			QCA100A40 QBB100A40	QCA100A60 QBB100A60	
V _{CB0}	Collector-Base Voltage		400	600	V
V _{CEX}	Collector-Emitter Voltage	V _{BE} =-2V	400	600	V
V _{EBO}	Emitter-Base Voltage		10		V
I _C	Collector Current	() pw≤1ms	100 (200)		A
-I _C	Reverse Collector Current		100		A
I _B	Base Current		6		A
P _T	Total power dissipation	T _C =25°C	620		W
T _j	Junction Temperature		-40 to +150		°C
T _{stg}	Storage Temperature		-40 to +125		°C
V _{iso}	Isolation Voltage	A.C.1minute	2500		V
	Mounting Torque	Mounting (M5)	Recommended Value 1.5-2.5 (15-25)		N·m (kgf·cm)
		Terminal (M5)	Recommended Value 1.5-2.5 (15-25)		
	Mass	QCA100A/QBB100A	Typical Value		360/340

Electrical Characteristics

Symbol	Item	Conditions	Ratings		Unit
			Min.	Max.	
I _{CB0}	Collector Cut-off Current	V _{CB} =V _{CB0}		1.0	mA
I _{EBO}	Emitter Cut-off Current	V _{EB} =V _{EBO}		400	mA
V _{CE0(SUS)}	Collector Emitter Sustaining Voltage	I _C =1A	QCA100A40 QBB100A40	300	V
			QCA100A60 QBB100A60	450	
V _{CEX(SUS)}		I _C =20A, I _{B2} =-5A	QCA100A40 QBB100A40	400	V
			QCA100A60 QBB100A60	600	
h _{FE}	DC Current Gain	I _C =100A, V _{CE} =2V/5V	75/100		
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C =100A, I _B =1.4A		2.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C =100A, I _B =1.4A		2.5	V
ton	Switching Time	On Time		2.0	μs
ts		Storage Time	V _{CC} =300V, I _C =100A I _{B1} =2A, I _{B2} =-2A	12.0	
tf		Fall Time		3.0	
V _{ECR}	Collector-Emitter Reverse Voltage	-I _C =100A		1.4	V
R _{th(j-c)}	Thermal Impedance	Transistor part/Diode part		0.2/0.6	°C/W



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