

TRANSISTOR MODULE

QCA100A/QBB100A40/60

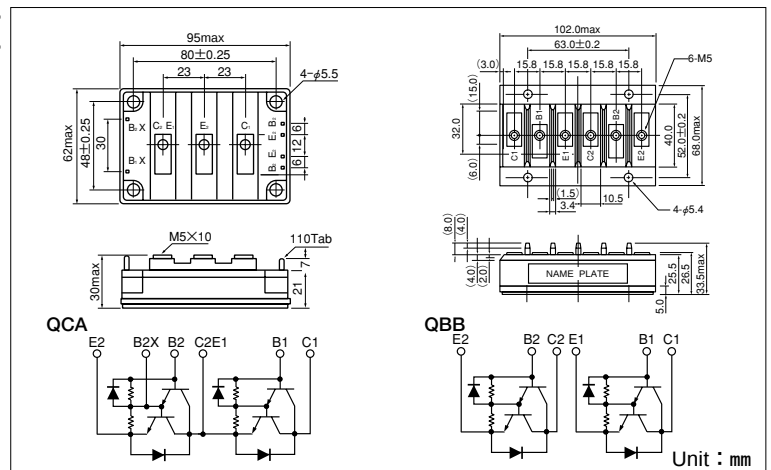
UL:E76102 (M)

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 (VVVF), AC/DC Servo, UPS,
Switching Power Supply, Ultrasonic Application



Maximum Ratings

($T_j=25^{\circ}C$ unless otherwise specified)

Symbol	Item		Conditions	Ratings		Unit
				QCA100A40 QBB100A40	QCA100A60 QBB100A60	
V _{CBO}	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℃	620		W
T _J	Junction Temperature			−40 to +150		℃
T _{stg}	Storage Temperature			−40 to +125		℃
V _{iso}	Isolation Voltage		A.C.1minute	2500		V
	Mounting Torque	Mounting (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)		N·m (kgf·cm)
		Terminal (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)		
	Mass	QCA100A/QBB100A	Typical Value	360/340		g

Electrical Characteristics

Symbol	Item	Conditions	Ratings		Unit
			Min.	Max.	
I_{CBO}	Collector Cut-off Current	$V_{CB}=V_{CBO}$		1.0	mA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=V_{EBO}$		400	mA
$V_{CEO(SUS)}$	Collector Emitter Sustaining Voltage	$I_C=1A$	300		V
			450		
$V_{CEX(SUS)}$	Collector Emitter Sustaining Voltage	$I_C=20A, I_{B2}=-5A$	400		V
			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
t_{on}	Switching Time	$V_{CC}=300V, I_C=100A$ $I_{B1}=2A, I_{B2}=-2A$		2.0	μs
t_s				12.0	
t_f				3.0	
V_{ECO}	Collector-Emitter Reverse Voltage	$-I_C=100A$		1.4	V
$R_{th(j-c)}$	Thermal Impedance	Transistor part/Diode part		0.2/0.6	$^{\circ}C/W$

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