

TRANSISTOR MODULE

QCA100A/QBB100A40/60

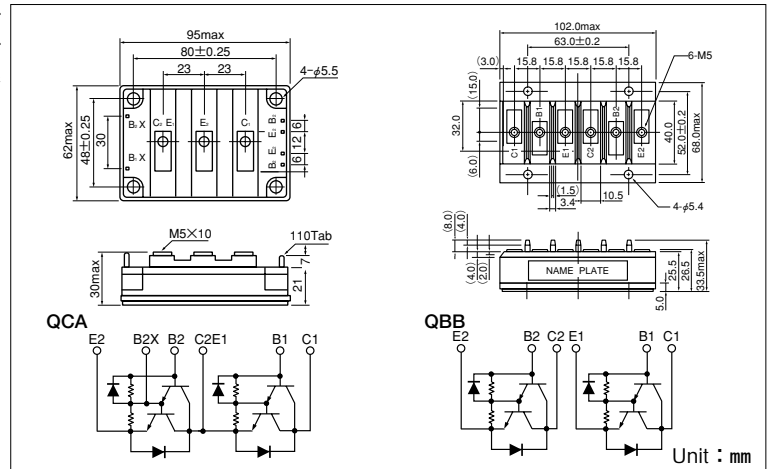
UL:E76102(M)

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	() $p_w \leq 1ms$	100 (200)		A
$-I_C$	Reverse Collector Current		100		A
I_B	Base Current		6		A
P_T	Total power dissipation	$T_C=25^\circ C$	620		W
T_j	Junction Temperature		-40 to +150		$^\circ C$
T_{stg}	Storage Temperature		-40 to +125		$^\circ C$
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		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	$I_C=1A$	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
t_{on}	Switching Time	$V_{CC}=300V, I_C=100A$ $I_{B1}=2A, I_{B2}=-2A$	On Time		μs
t_s			Storage Time		
t_f			Fall Time		
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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