

# TRANSISTOR MODULE

## QCA100A/QBB100A40/60

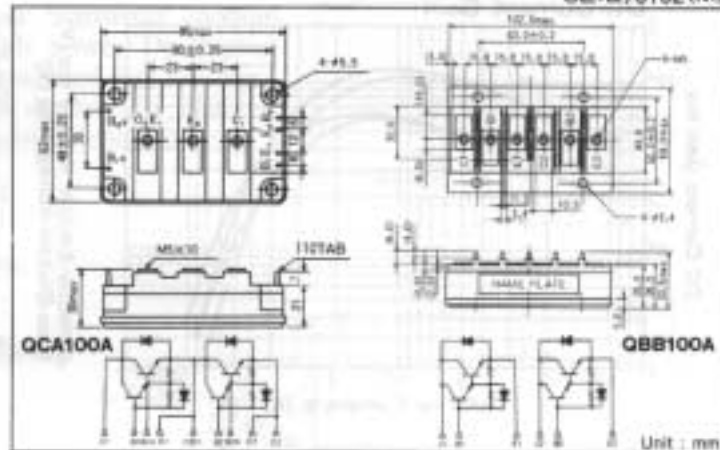
UL:E76102(M)

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

- QCA100A...Series-connected type
- QBB100A...Separate Type
- $I_c = 100A$   $V_{CE} = 400/600V$
- 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

$T_j = 25^\circ C$

Symbol	Item	Conditions	Ratings		Unit
			QCA100A40 QBB100A40	QCA100A60 QBB100A60	
$V_{CB0}$	Collector-Base Voltage		400	600	V
$V_{CE}$	Collector-Emitter Voltage	$V_{EB} = -2V$	400	600	V
$V_{EB0}$	Emitter-Base Voltage		10		V
$I_c$	Collector Current	( ) $t_w \leq 1ms$	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 ~ +150		$^\circ C$
$T_{stg}$	Storage Temperature		-40 ~ +125		$^\circ C$
$V_{iso}$	Isolation Voltage	A.C. 1minute	2500		V
	Mounting Torque	(M5)	Recommended Value 25kgf·cm		kgf·cm
		Terminal (M5)	Recommended Value 25kgf·cm		
	Mass	QCA100A	Typical value		g
		QBB100A	Typical value		

### Electrical Characteristics

$T_j = 25^\circ C$

Symbol	Item	Conditions	Ratings		Unit
			Min.	Max.	
$I_{c0}$	Collector Cut-off Current	$V_{CB} = V_{CB0}$		1.0	mA
$I_{e0}$	Emitter Cut-off Current	$V_{EB} = V_{EB0}$		400	mA
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	QCA100A40 QBB100A40	300		V
		QCA100A60 QBB100A60			
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	QCA100A40 QBB100A40	400		V
		QCA100A60 QBB100A60			
$h_{FE}$	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	On Time	2.0		$\mu s$
$t_s$		Storage Time	12.0		
$t_f$		Fall Time	3.0		
$V_{CE0}$	Collector-Emitter Reverse Voltage	$-I_c = 100A$		1.4	V
$R_{th(j-c)}$	Thermal Impedance (junction to case)	Transistor part		0.2	$^\circ C/W$
		Diode part		0.6	