

TRANSISTOR MODULE

QCA100A/QBB100A40/60

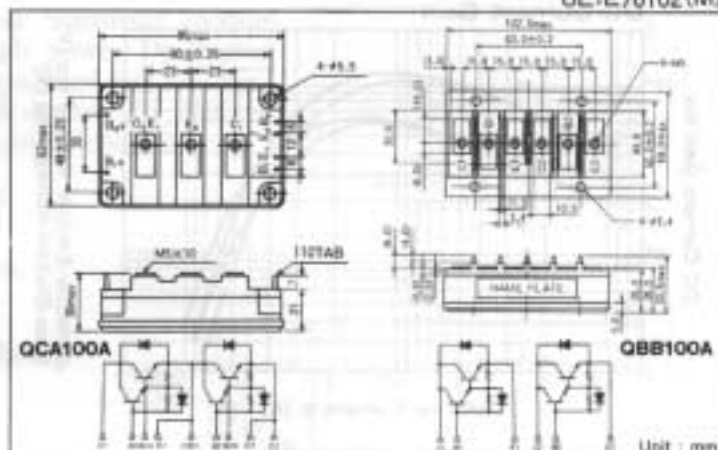
UL:E76102(M)

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		$-40 \sim +150$		$^\circ C$
T_{stg}	Storage Temperature		$-40 \sim +125$		$^\circ C$
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	360		g
	QBB100A	Typical value	340		

Electrical Characteristics

$T_j = 25^\circ C$

Symbol	Item	Conditions	Ratings		Unit
			Min.	Max.	
I_{c0}	Collector Cut-off Current	$V_{CB} = V_{CE0}$		1.0	mA
I_{e0}	Emitter Cut-off Current	$V_{EB} = V_{EBO}$		400	mA
$V_{CE(sus)}$	Collector-Emitter Sustaining Voltage	$I_c = 1A$	300		V
			450		
$V_{CE(sus)}$	Collector-Emitter Sustaining Voltage	$I_c = 20A$ $I_{E2} = -5A$	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	On Time	2.0		μs
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	