

# QCA200A40/60

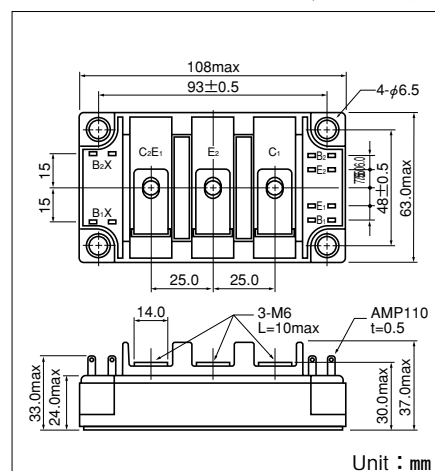
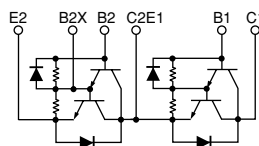
UL:E76102(M)

**QCA200** is a dual Darlington power transistor module which has series- connected high speed, high power Darlington transistors. Each transistor has a reverse paralleled fast recovery diode. The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction.

- $I_C = 200A$ ,  $V_{CEX} = 400/600V$
- Low saturation voltage for higher efficiency.
- High DC current gain  $h_{FE}$
- 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

(Tj=25°C unless otherwise specified)

Symbol	Item		Conditions	Ratings		Unit
				QCA200A40	QCA200A60	
V <sub>CBO</sub>	Collector-Base Voltage			400	600	V
V <sub>CEX</sub>	Collector-Emitter Voltage		V <sub>BE</sub> =-2V	400	600	V
V <sub>EBO</sub>	Emitter-Base Voltage			10		V
I <sub>C</sub>	Collector Current		( ) pw≤1ms	200 (400)		A
-I <sub>C</sub>	Reverse Collector Current			200		A
I <sub>B</sub>	Base Current			12		A
P <sub>T</sub>	Total power dissipation		T <sub>C</sub> =25℃	1250		W
T <sub>J</sub>	Junction Temperature			-40 to +150		℃
T <sub>stg</sub>	Storage Temperature			-40 to +125		℃
V <sub>iso</sub>	Isolation Voltage		A.C.1minute	2500		V
	Mounting	Mounting (M6)	Recommended Value 2.5-3.9 (25-40)	4.7 (48)		N·m (kgf·cm)
	Torque	Terminal (M6)	Recommended Value 2.5-3.9 (25-40)	4.7 (48)		
	Mass		Typical Value	470		g

## ■ Electrical Characteristics

Symbol	Item		Conditions	Ratings		Unit	
				Min.	Max.		
I <sub>CB</sub> O	Collector Cut-off Current		V <sub>CB</sub> =V <sub>CBO</sub>		2.0	mA	
I <sub>EB</sub> O	Emitter Cut-off Current		V <sub>EB</sub> =V <sub>EBO</sub>		800	mA	
V <sub>CE</sub> (SUS)	Collector Emitter Sustaning Voltage	QCA200A40	I <sub>C</sub> =1A	300		V	
		QCA200A60		450			
V <sub>CE</sub> (SUS)			QCA200A40	I <sub>C</sub> =40A, I <sub>B2</sub> =-8A	400		V
			QCA200A60		600		
h <sub>FE</sub>	DC Current Gain		I <sub>C</sub> =200A, V <sub>CE</sub> =2V	75			
			I <sub>C</sub> =200A, V <sub>CE</sub> =5V	100			
V <sub>CE</sub> (sat)	Collector-Emitter Saturation Voltage		I <sub>C</sub> =200A, I <sub>B</sub> =2.7A		2.0	V	
V <sub>BE</sub> (sat)	Base-Emitter Saturation Voltage		I <sub>C</sub> =200A, I <sub>B</sub> =2.7A		2.5	V	
t <sub>on</sub>	Switching Time	On Time	V <sub>CC</sub> =300V, I <sub>C</sub> =200A I <sub>B1</sub> =4A, I <sub>B2</sub> =-4A		2.0	μs	
t <sub>s</sub>		Storage Time			12.0		
t <sub>f</sub>		Fall Time			3.0		
V <sub>ECO</sub>	Collector-Emitter Reverse Voltage		-I <sub>C</sub> =200A		1.4	V	
R <sub>th</sub> (j-c)	Thermal Impedance (junction to case)		Transistor part		0.1	°C/W	
			Diode part		0.3		

