

TRANSISTOR MODULE

QCA30B/QCB30A40/60

TOP



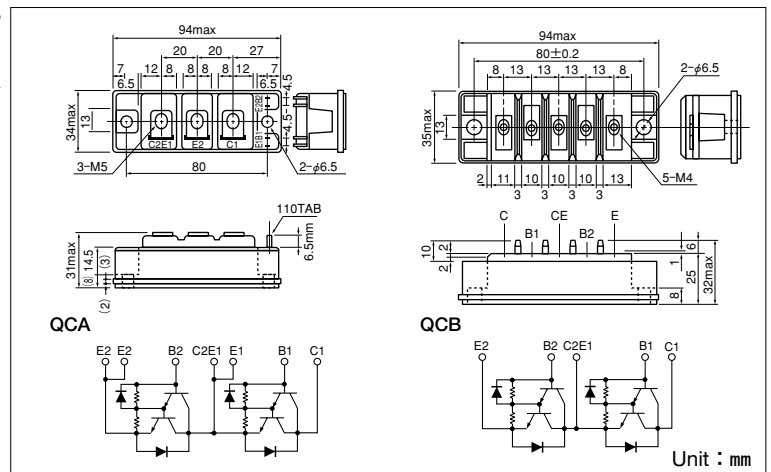
UL;E76102 (M)

QCA30B and **QCB30A** are dual Darlington power transistor modules which have series-connected high speed, high power Darlington transistors. Each transistor has a reverse paralleled fast recovery diode.

- $I_C=30A$, $V_{CEX}=400/600V$
- 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
				QCA30B40 QCB30A40	QCA30B60 QCB30A60	
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	30 (60)		A
−I _C	Reverse Collector Current			30		A
I _B	Base Current			2		A
P _T	Total power dissipation		T _C =25℃	250		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	QCA30B	Mounting (M6)	Recommended Value 2.5-3.9 (25-40)		N·m (kgf·cm)
			Terminal (M5)	Recommended Value 1.5-2.5 (15-25)		
		QCB30A	Mounting (M5)	Recommended Value 1.5-2.5 (15-25)		
			Terminal (M4)	Recommended Value 1.0-1.4 (10-14)		
	Mass	QCA30B/QCB30A	Typical Value	240/195		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		$V_{EB}=V_{EBO}$		300	mA
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	QCA30B40 QCB30A40	$I_C=1A$	300		V
		QCA30B60 QCB30A60		450		
$V_{CEX(SUS)}$		QCA30B40 QCB30A40	$I_C=6A, I_{B2}=-5A$	400		V
		QCA30B60 QCB30A60		600		
h_{FE}	DC Current Gain		$I_C=30A, V_{CE}=2V/5V$	75/100		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		$I_C=30A, I_B=0.4A$		2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		$I_C=30A, I_B=0.4A$		2.5	V
t_{on}	Switching Time	On Time	$V_{CC}=300V, I_C=30A$ $I_{B1}=0.6A, I_{B2}=-0.6A$		1.0	μs
t_s		Storage Time			12.0	
t_f		Fall Time			2.0	
V_{ECO}	Collector-Emitter Reverse Voltage		$-I_C=30A$		1.4	V
$R_{th(j-c)}$	Thermal Impedance (junction to case)		Transistor part/Diode part		0.5/1.6	$^\circ C/W$

