

TRANSISTOR MODULE

QCA75A/QCB75A40/60

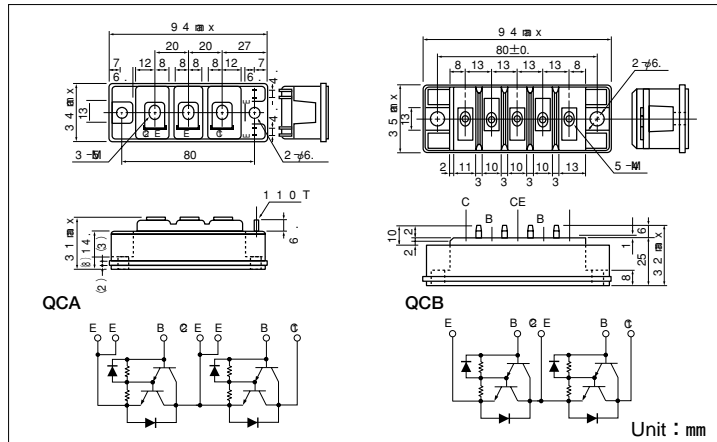
UL;E76102(M)

QCA75A and QCB75A 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.

- $I_C=75A$, $V_{CEX}=400/600V$
- Low saturation voltage for higher efficiency.
- Isolated mounting base
- $V_{EBO} 10V$ for faster switching speed.

(Applications)

Motor Control (VVF), AC/DC Servo, UPS, Switching Power Supply, Ultrasonic Application



Maximum Ratings

($T_j=25^\circ C$ unless otherwise specified)

Symbol	Item		Conditions	Ratings		Unit
				QCA75A40 QCB75A40	QCA75A60 QCB75A60	
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		() $p_w \leq 1ms$	75 (150)		A
$-I_C$	Reverse Collector Current			75		A
I_B	Base Current			4.5		A
P_T	Total power dissipation		$T_c=25^\circ C$	350		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	QCA75A	Mounting (M6)	Recommended Value 2.5-3.9 (25-40)	4.7(48)		N·m kgf·cm
		Terminal (M5)	Recommended Value 1.5-2.5 (15-25)	2.7(28)		
	QCB75A	Mounting (M5)	Recommended Value 1.5-2.5 (15-25)	2.7(28)		
		Terminal (M4)	Recommended Value 1.0-1.4 (10-14)	1.5(15)		
Mass	QCA75A/QCB75A		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	QCA75A40 QCB75A40 QCA75A60 QCB75A60	$I_C=1A$	300		V
$V_{CEX(SUS)}$				450		
		QCA75A40 QCB75A40 QCA75A60 QCB75A60	$I_C=15A, I_{B2}=-5A$	400		V
				600		
h_{FE}	DC Current Gain		$I_C=75A, V_{CE}=2V/5V$	75/100		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		$I_C=75A, I_B=1A$		2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		$I_C=75A, I_B=1A$		2.5	V
t_{on}	Switching Time	On Time	$V_{CC}=300V, I_C=75A$ $I_{B1}=1A, I_{B2}=-1A$		2.0	μs
t_s		Storage Time			12.0	
t_f		Fall Time			3.0	
V_{ECO}	Collector-Emitter Reverse Voltage		$-I_C=75A$		1.4	V
$R_{th(j-c)}$	Thermal Impedance (junction to case)		Transistor part/Diode part		0.35/1.3	$^\circ C/W$

