

TRANSISTOR MODULE

QCA75A/QCB75A40/60

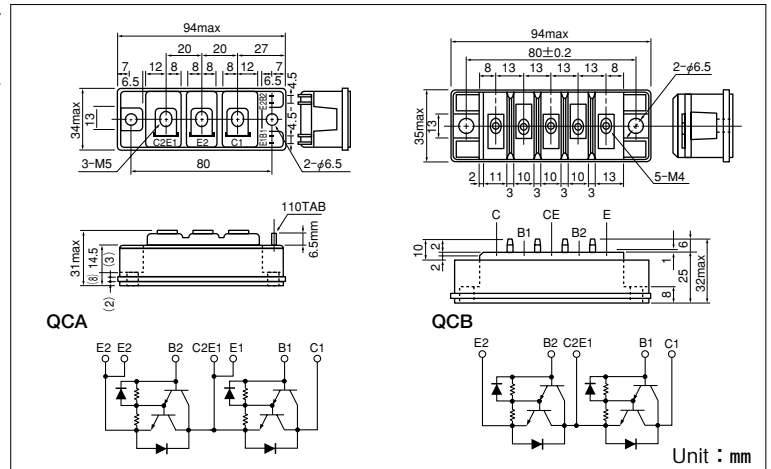
UL:E76102(M)

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 (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	
			QCA75A40 QCB75A40	QCA75A60 QCB75A60		
V_{CBO}	Collector-Base Voltage		400	600	V	
V_{CEX}	Collector-Emmitter 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 Emmitter Sustaning Voltage	$I_C=1A$	QCA75A40 QCB75A40	300	V
$V_{CEX(SUS)}$			QCA75A60 QCB75A60	450	
$V_{CEX(SUS)}$		$I_C=15A, I_{B2}=-5A$	QCA75A40 QCB75A40	400	V
			QCA75A60 QCB75A60	600	
h_{FE}	DC Current Gain	$I_C=75A, V_{CE}=2V/5V$	75/100		
$V_{CE(sat)}$	Collector-Emmitter Saturation Voltage	$I_C=75A, I_B=1A$		2.0	V
$V_{BE(sat)}$	Base-Emmitter Saturation Voltage	$I_C=75A, I_B=1A$		2.5	V
t_{on}	Switching Time	$V_{CC}=300V, I_C=75A$ $I_{B1}=1A, I_{B2}=-1A$		2.0	μs
t_s				12.0	
t_f				3.0	
V_{ECO}	Collector-Emmitter 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	$^{\circ}C/W$