

TRANSISTOR MODULE

QCA150A/QBB150A40/60

TOP



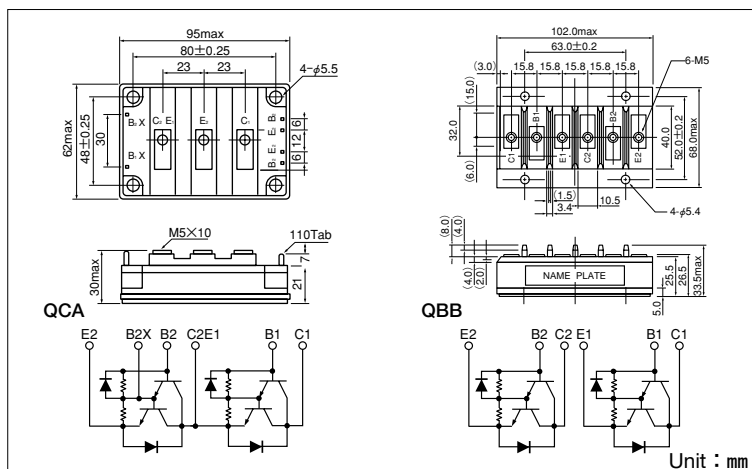
UL;E76102 (M)

QCA150A and QBB150A is a dual Darlington power transistor module with two high speed, high power Darlington transistors. Each transistor has a reverse paralleled fast recovery diode.

- QCA150A···Series-connected type
- QBB150A···Separate Type
- $I_C=150A$, $V_{CEX}=400/600V$
- 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
			QCA150A40 QBB150A40	QCA150A60 QBB150A60	
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	() $p_w \leq 1ms$	150 (300)		A
$-I_C$	Reverse Collector Current		150		A
I_B	Base Current		9		A
P_T	Total power dissipation	$T_C=25^\circ C$	690		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	Mounting (M5)	Recommended Value 1.5-2.5 (15-25)		N·m (kgf·cm)
		Terminal (M5)	Recommended Value 1.5-2.5 (15-25)		
	Mass	QCA150A/QBB150A	Typical Value		370/340

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	$V_{EB}=V_{EBO}$		500	mA
$V_{CEO(SUS)}$	Collector Emmitter Sustaining Voltage	$I_C=1A$	QCA150A40 QBB150A40	300	V
			QCA150A60 QBB150A60	450	
$V_{CEX(SUS)}$	Collector Emmitter Sustaining Voltage	$I_C=30A, I_{B2}=-5A$	QCA150A40 QBB150A40	400	V
			QCA150A60 QBB150A60	600	
h_{FE}	DC Current Gain	$I_C=150A, V_{CE}=2V/5V$	75/100		
$V_{CE(sat)}$	Collector-Emmitter Saturation Voltage	$I_C=150A, I_B=2.0A$		2.0	V
$V_{BE(sat)}$	Base-Emmitter Saturation Voltage	$I_C=150A, I_B=2.0A$		2.5	V
t_{on}	Switching Time	$V_{CC}=300V, I_C=150A$ $I_{B1}=2A, I_{B2}=-2A$		2.0	μs
t_s				12.0	
t_f				3.0	
V_{ECO}	Collector-Emmitter Reverse Voltage	$-I_C=150A$		1.4	V
$R_{th(j-c)}$	Thermal Impedance (junction to case)	Transistor part/Diode part		0.18/0.6	$^\circ C/W$

