TRANSISTOR MODULE

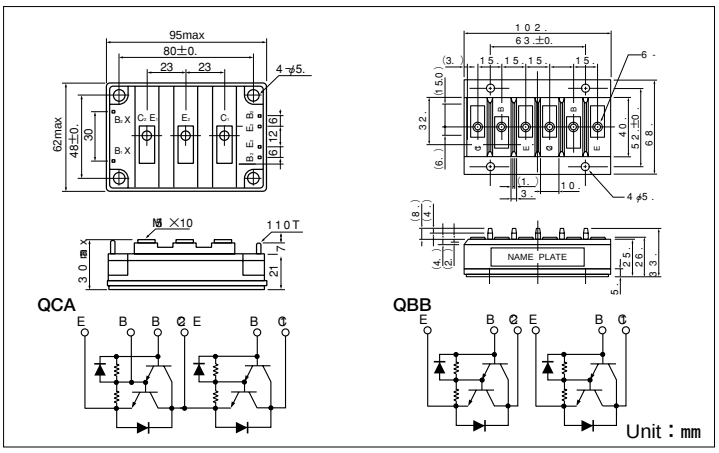
QCA100A/QBB100A40/60

UL;E76102(M)

QCA100A and **QBB100A** is a dual Darlington power transistor modules with two high speed, high power Darlington transistors. Each transistor has a reverse paralleled fast recovery diode.

- QCA100A…Series-connected type
  QBB100A…Separate Type
- I_C=100A, 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

(Tj=25℃ unless otherwise specified)

Symbol	Item		Conditions	Ratings QCA100A40 QBB100A40	Ratings QCA100A60 QBB100A60	Unit
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	100 (200)		A
$-I_C$	Reverse Collector Current			100		A
I_B	Base Current			6		A
P_T	Total power dissipation		T_C=25℃	620		W
T_j	Junction Temperature			−40 to +150		℃
Tstg	Storage Temperature			−40 to +125		℃
V_{ISO}	Isolation Voltage		A.C.1minute	2500		V
	Mounting Torque	Mounting (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)		N·m (kgf·cm)
		Terminal (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)		
	Mass	**QCA100A/QBB100A**	Typical Value	360/340		g

■Electrical Characteristics

Symbol	Item		Conditions	Ratings Min.	Ratings Max.	Unit
I_{CBO}	Collector Cut-off Current		V_{CB}=V_{CBO}		1.0	mA
I_{EBO}	Emitter Cut-off Current		V_{EB}=V_{EBO}		400	mA
$V_{CEO(SUS)}$	Collector Emitter Sustaning Voltage	QCA100A40 QBB100A40	I_C=1A	300		V
		QCA100A60 QBB100A60		450		
$V_{CEX(SUS)}$		QCA100A40 QBB100A40	I_C=20A, I_{B2}=−5A	400		V
		QCA100A60 QBB100A60		600		
h_{FE}	DC Current Gain		I_C=100A, V_{CE}=2V/5V	75/100		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		I_C=100A, I_B=1.4A		2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		I_C=100A, I_B=1.4A		2.5	V
ton	Switching Time	On Time	Vcc=300V, I_C=100A I_{B1}=2A, I_{B2}=−2A		2.0	μs
ts		Storage Time			12.0	
tf		Fall Time			3.0	
V_{ECO}	Collector-Emitter Reverse Voltage		−I_C=100A		1.4	V
Rth(j-c)	Thermal Impedance		Transistor part/Diode part		0.2/0.6	℃/W

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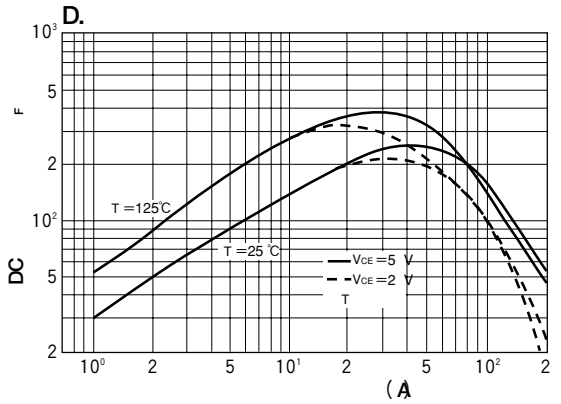

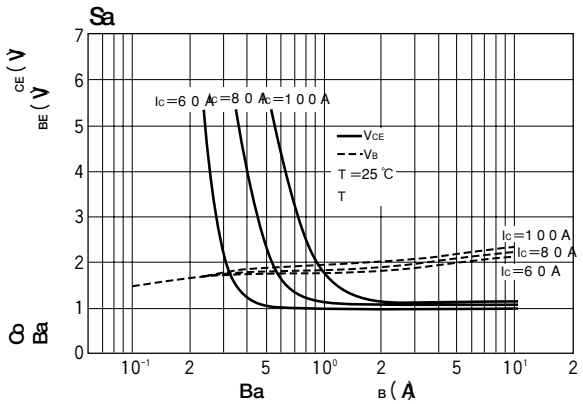

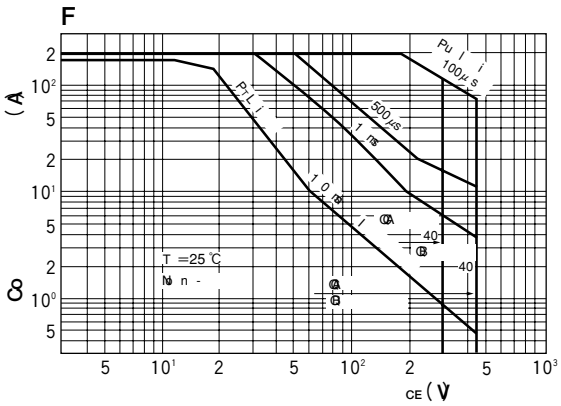

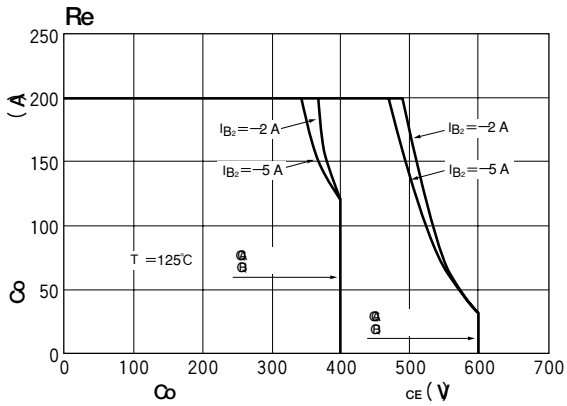

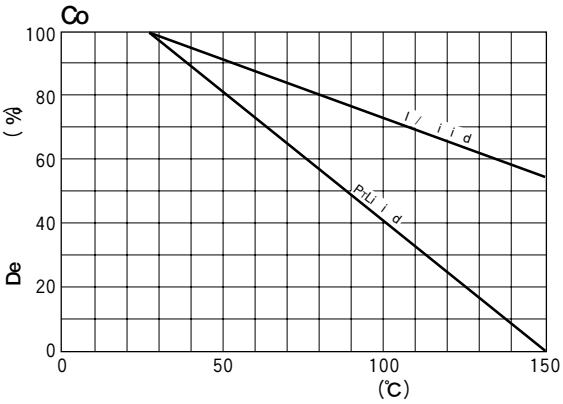

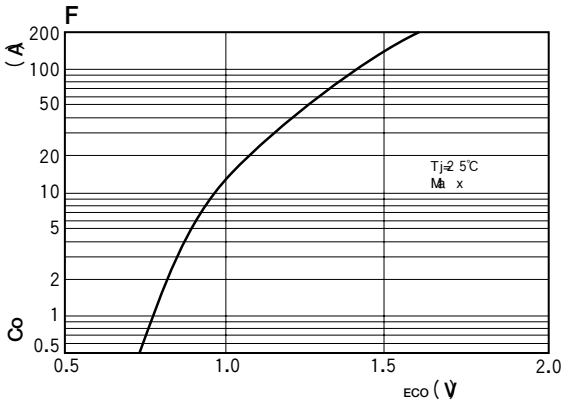

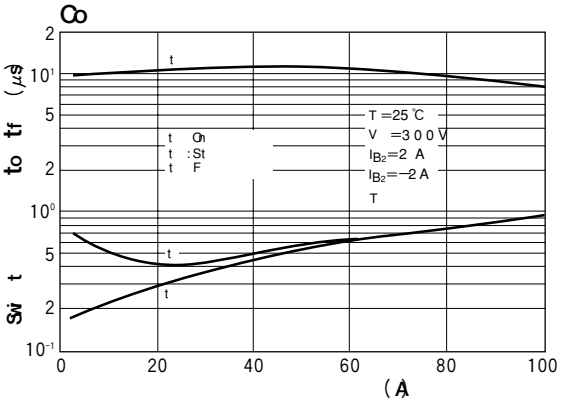

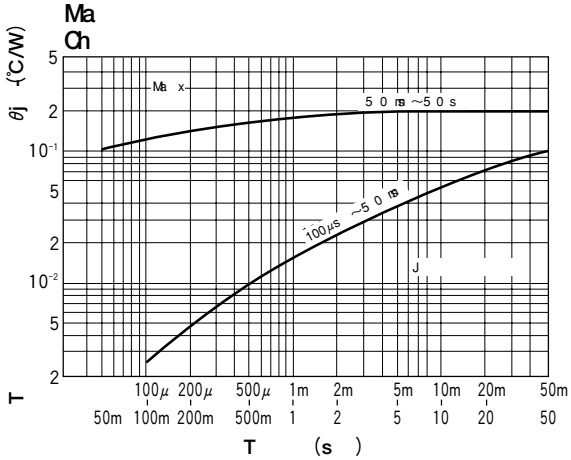

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