TRANSISTOR MODULE

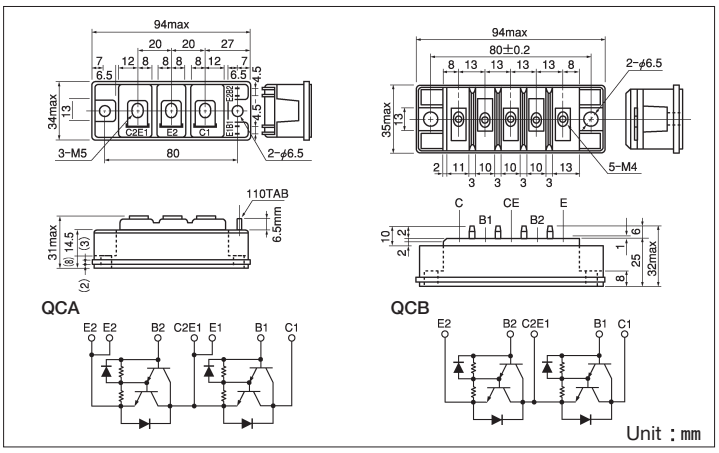
QCA50B/QCB50A40/60

UL;E76102 (M)

QCA50B and **QCB50A** 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=50A, 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℃)

Symbol	Item			Conditions	Ratings QCA50B40 QCA50A40	Ratings QCA50B60 QCA50A60	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	50 (100)		A
$-I_C$	Reverse Collector Current				50		A
I_B	Base Current				3		A
P_T	Total power dissipation			T_C=25℃	300		W
T_j	Junction Temperature				−40～+150		℃
Tstg	Storage Temperature				−40～+125		℃
V_{ISO}	Isolation Voltage			A.C.1minute	2500		V
	Mounting Torque	QCA50B	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)		
		QCA50A	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	QCA50B/QCA50A		Typical Value	240/195		g

■Electrical Characteristics

(Tj=25℃)

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}		300	mA
$V_{CEO(SUS)}$	Collector Emitter Sustaning Voltage		QCA50B40 QCB50A40	I_C=1A	300		V
			QCA50B60 QCB50A60		450		
$V_{CEX(SUS)}$			QCA50B40 QCB50A40	I_C=10A, I_{B2}=−5A	400		V
			QCA50B60 QCB50A60		600		
h_{FE}	DC Current Gain			I_C=50A, V_{CE}=2V/5V	75/100		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage			I_C=50A, I_B=0.67A		2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage			I_C=50A, I_B=0.67A		2.5	V
ton	Switching Time	On Time		Vcc=300V, I_C=50A I_{B1}=1A, I_{B2}=−1A		1.0	μs
ts		Storage Time				12.0	
tf		Fall Time				2.0	
V_{ECO}	Collector-Emitter Reverse Voltage			$-I_C$=50A		1.4	V
Rth(j-c)	Thermal Impedance (junction to case)			Transistor part／Diode part		0.4/1.3	℃/W

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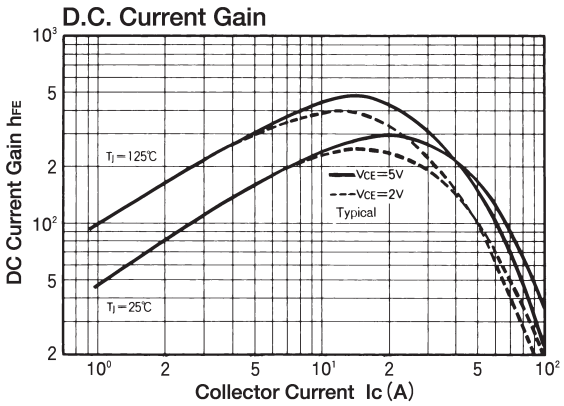

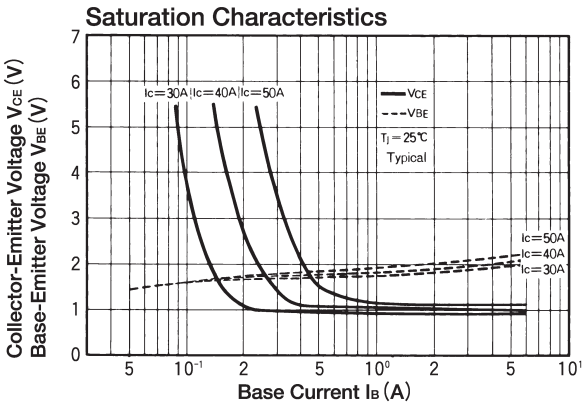

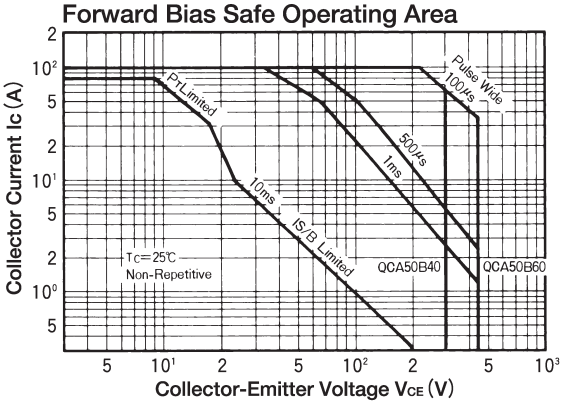

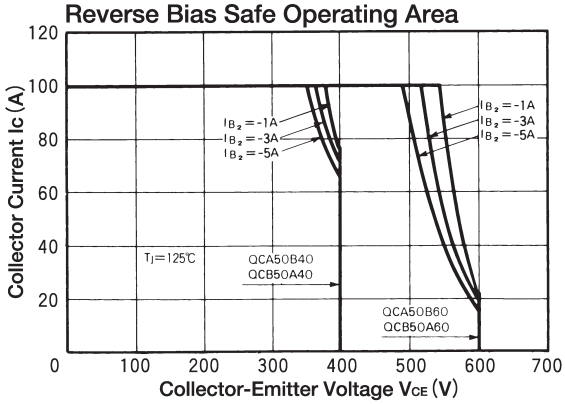

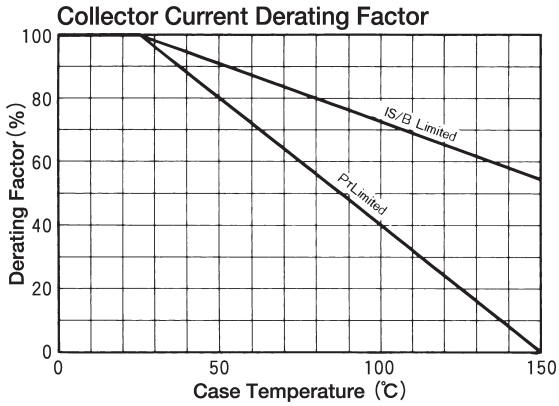

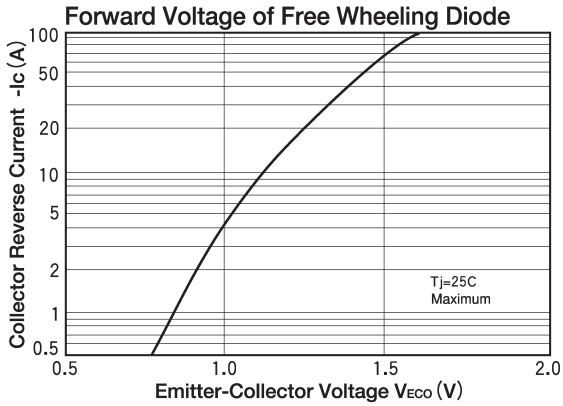

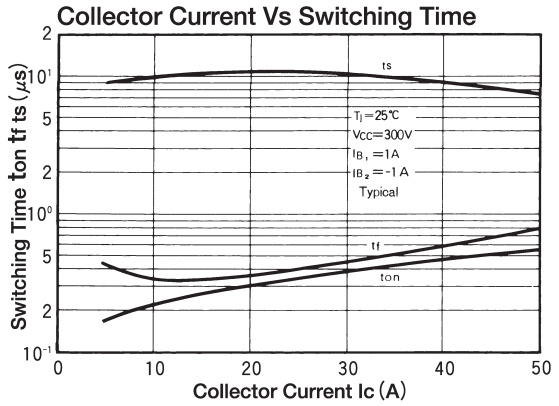

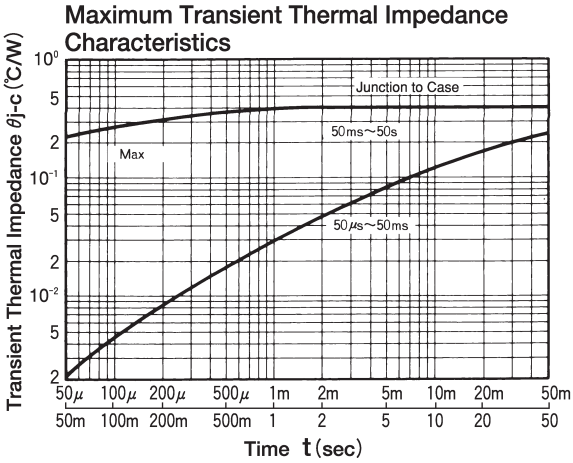

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