

QCA150A/QBB150A40/60

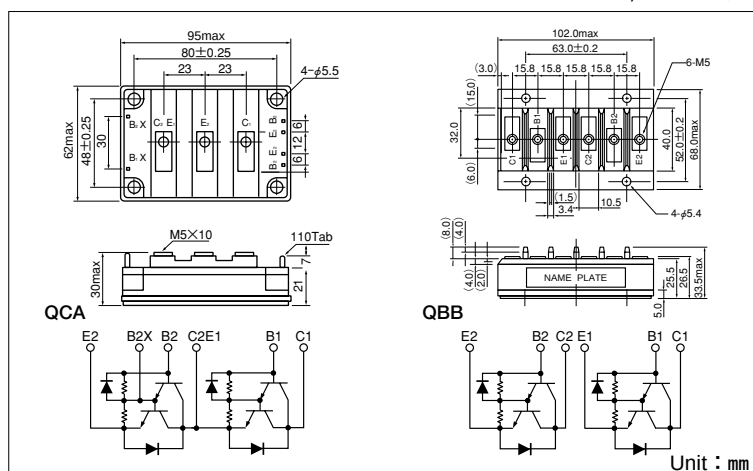
UL:E76102(M)

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



■ Maximum Ratings

(Tj=25°C unless otherwise specified)

Symbol	Item		Conditions	Ratings		Unit
				QCA150A40 QBB150A40	QCA150A60 QBB150A60	
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	150 (300)		A
-I _C	Reverse Collector Current			150		A
I _B	Base Current			9		A
P _T	Total power dissipation		T _C =25℃	690		W
T _j	Junction Temperature			-40 to +150		℃
T _{stg}	Storage Temperature			-40 to +125		℃
V _{iso}	Isolation Voltage		A.C.1minute	2500		V
	Mounting	Mounting (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)		N·m (kgf·cm)
	Torque	Terminal (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)		
	Mass	QCA150A/QBB150A	Typical Value	370/340		g

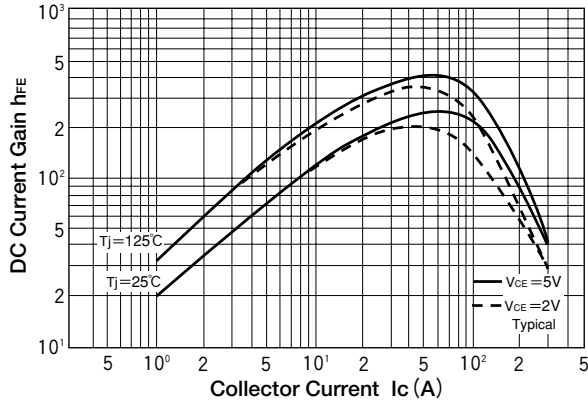
■ Electrical Characteristics

Symbol	Item		Conditions	Ratings		Unit
				Min.	Max.	
I _{CB} O	Collector Cut-off Current		V _{CB} =V _{CB} O		1.0	mA
I _{EB} O	Emitter Cut-off Current		V _{EB} =V _{EB} O		500	mA
V _{CEO} (SUS)	Collector Emitter Sustaning Voltage	QCA150A40 QBB150A40 QCA150A60 QBB150A60	I _C =1A	300		V
				450		
V _{CEX} (SUS)		QCA150A40 QBB150A40 QCA150A60 QBB150A60	I _C =30A, I _{B2} =-5A	400		V
				600		
h _{FE}	DC Current Gain		I _C =150A, V _{CE} =2V/5V	75/100		
V _{CE} (sat)	Collector-Emitter Saturation Voltage		I _C =150A, I _B =2.0A		2.0	V
V _{BE} (sat)	Base-Emitter Saturation Voltage		I _C =150A, I _B =2.0A		2.5	V
t _{on}	Switching Time	On Time	V _{CC} =300V, I _C =150A I _{B1} =2A, I _{B2} =-2A		2.0	μs
t _s		Storage Time			12.0	
t _f		Fall Time			3.0	
V _{ECO}	Collector-Emitter 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	°C/W

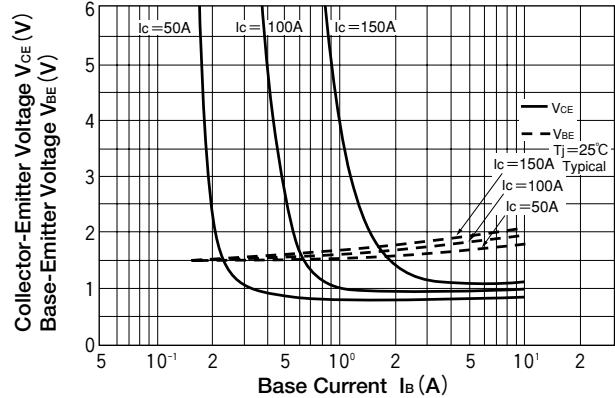
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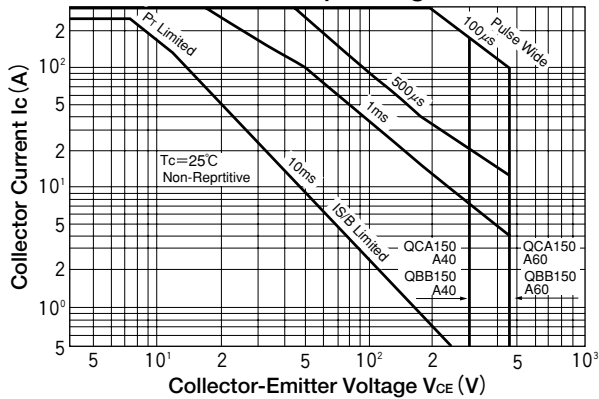
D.C. Current Gain



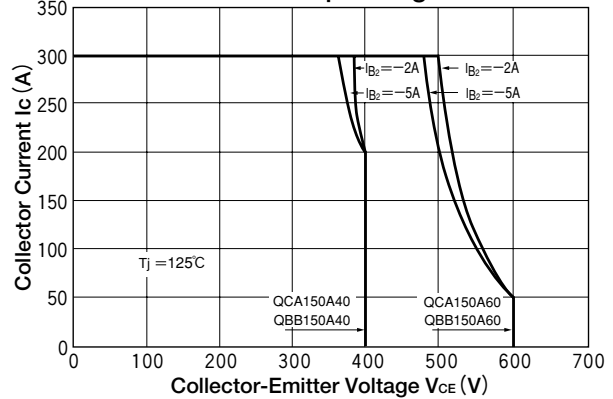
Saturation Characteristics



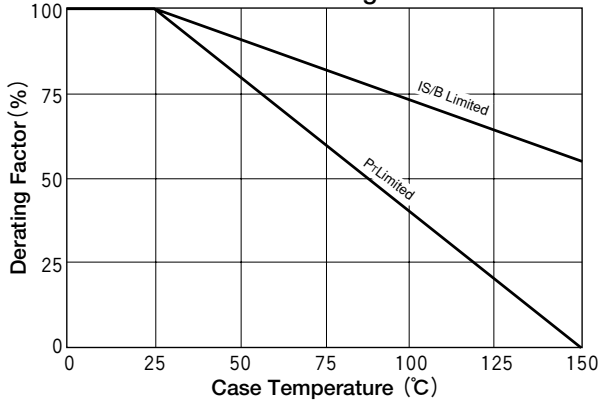
Forward Bias Safe Operating Area



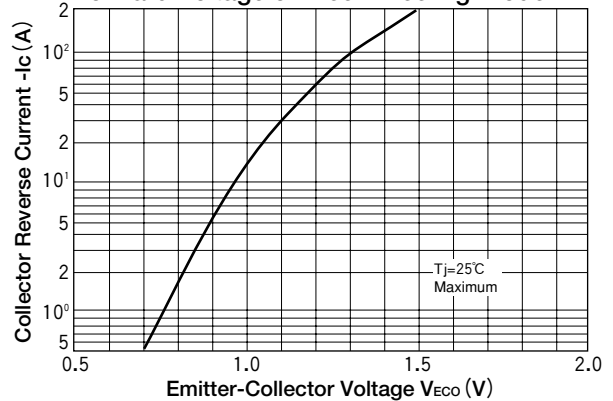
Reverse Bias Safe Operating Area



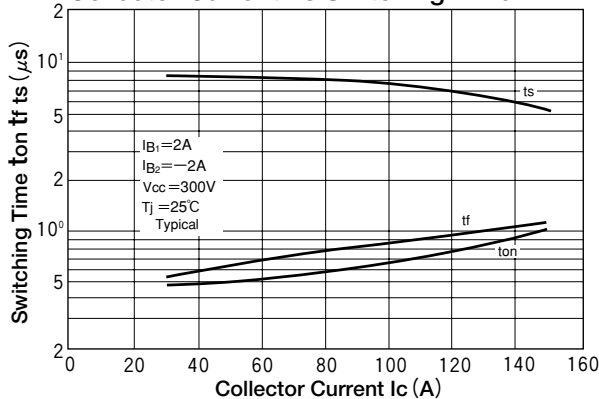
Collector Current Derating Factor



Forward Voltage of Free Wheeling Diode



Collector Current Vs Switching Time



Maximum Transient Thermal Impedance Characteristics

