TRANSISTOR MODULE

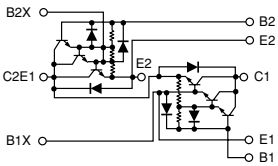
QCA200AA100

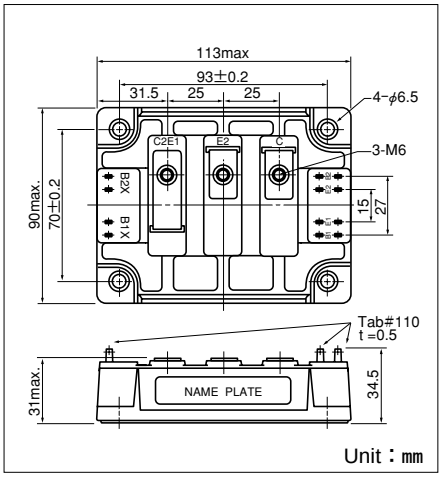
UL;E76102(M)

QCA200AA100 is a dual Darlington power transistor module with has series-connected high speed, high power Darlington transistors. Each transistor has a reverse paralleled fast recovery diode. The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction.

- I_C=200A, V_{CEX}=1000V
- Low saturation voltage for higher efficiency
- High DC current gain h_{FE}
- Isolated monuting base

(Applications)
Motor Control (VVVF), AC/DC Servo, UPS,
Switching Power Supply, Ultrasonic Application





■Maximum Ratings

(Tj=25℃ unless otherwise specified)

Symbol	Item	Conditions	Ratings	Unit
			QCA200AA100	
V_{CBO}	Collector-Base Voltage	Emitter open	1000	V
V_{CEX}	Collector-Emitter Voltage	V_{BE}=−2V	1000	V
$V_{CEX(SUS)}$	Collector-Emitter Sustaning Voltage	I_C=40A, I_{B2}=−5A	1000	V
V_{EBO}	Emitterr-Base Voltage	Collector open	10	V
I_C	Collector Current		200	A
−I_C	Reverse Collector Current		200	A
I_B	Base Current		10	A
P_C	Collector-Emitter power dissipation	T_C=25℃	1560	W
T_j	Junction Temperature		−40 to 150	℃
Tstg	Storage Temperature		−40 to 125	℃
V_{ISO}	Isolation Voltage(RMS)	A.C. 1minute	2500	V
	Mounting Torque (M6)	Recommended Value 2.5-3.9 (25-40)	4.7 (48)	N・m (kgf・cm)
	Mass	Typical Value	675	g

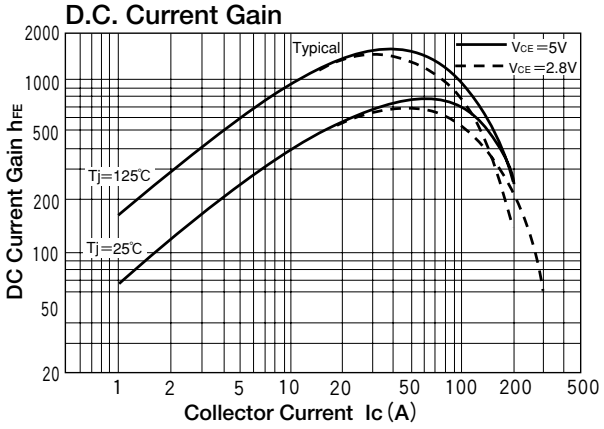
■Electrical Characteristics

Symbol	Item		Conditions	Ratings		Unit
				Min.	Max	
I_{CBO}	Collector Cut-off Current		V_{CB}=1000V Emitter open		4.00	mA
I_{EBO}	Emitter Cut-off Current		V_{EB}=10V Collector open		500	mA
h_{FE}	D.C. Current Gain		Ic=200A, V_{CE}=2.8V	75		
			Ic=200A, V_{CE}=5V	100		
$V_{CE(sat)}$	Collector-Emitter Sturation Voltage		Ic=200A, I_B=4A		2.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		Ic=200A, I_B=4A		3.5	V
ton	Switching Time	On Time	Vcc=600V, Ic=200A I_{B1}=4A, I_{B2}=−4A		3.0	μs
tstg		Storage Time			15.0	
tf		Fall Tjme			3.0	
V_{ECO}	Collector-Emitter Reverse Voltage (Diode forward voltage drop)		−Ic=200A		1.8	V
Rth(j-c)	Thermal Impedance (Junction to case)		Transistor part		0.08	℃/W
			Diode part		0.35	

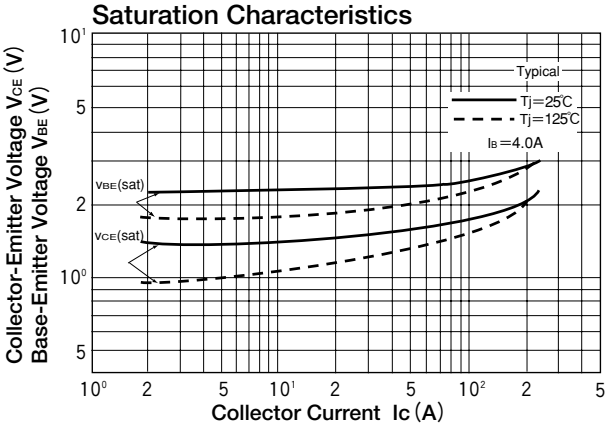
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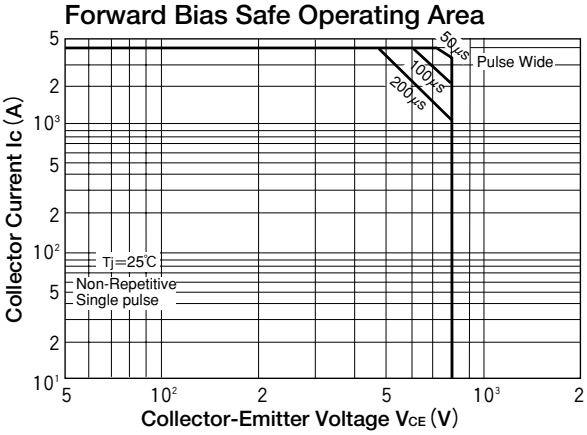
D.C. Current Gain



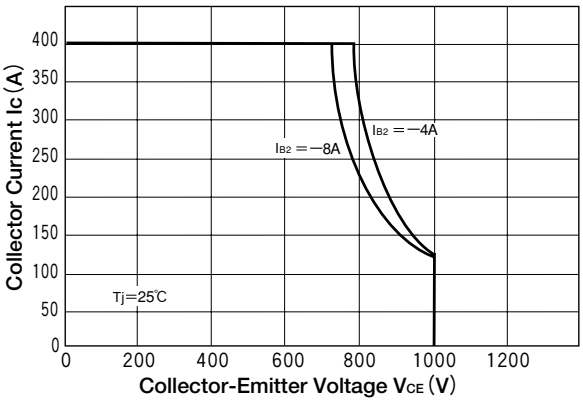
Saturation Characteristics



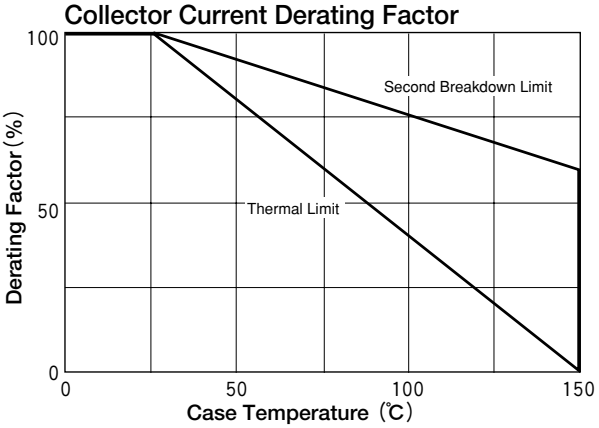
Forward Bias Safe Operating Area



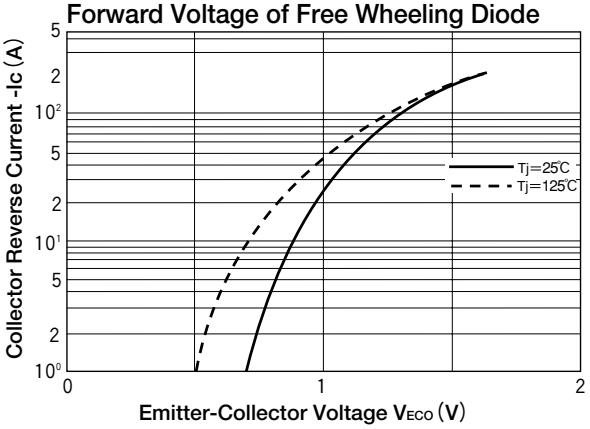
Reverse Bias Safe Operating Area



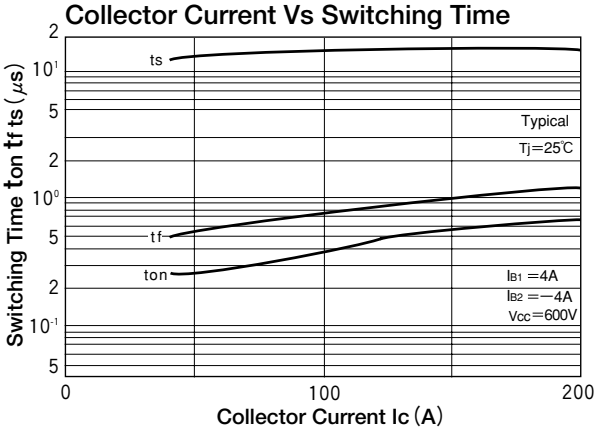
Collector Current Derating Factor



Forward Voltage of Free Wheeling Diode



Collector Current Vs Switching Time



Transient Thermal Impedance

