

# TRANSISTOR MODULE

# QCA200AA100



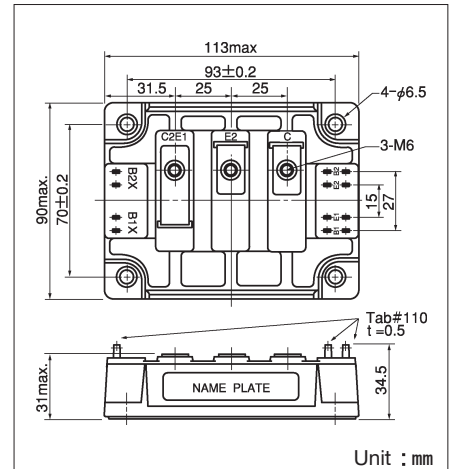
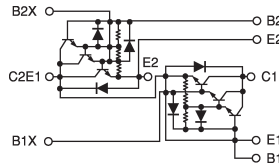
UL;E76102 (M)

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



### Maximum Ratings

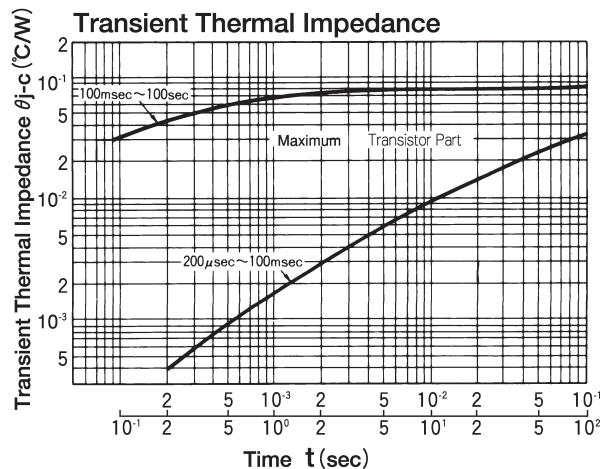
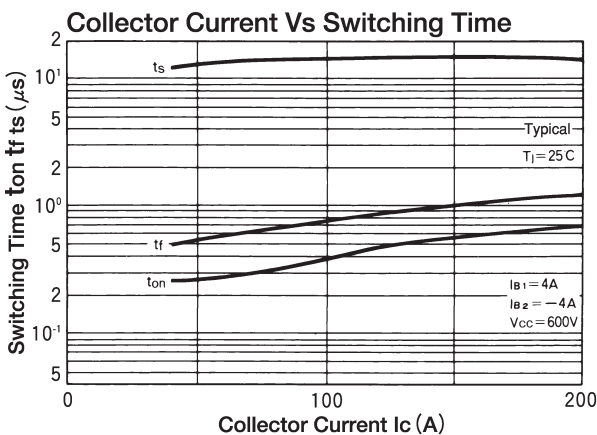
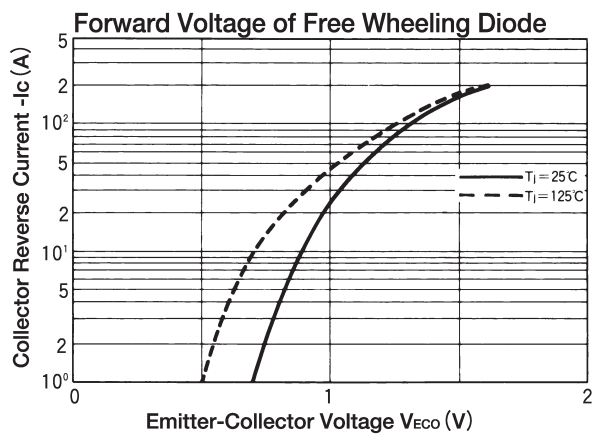
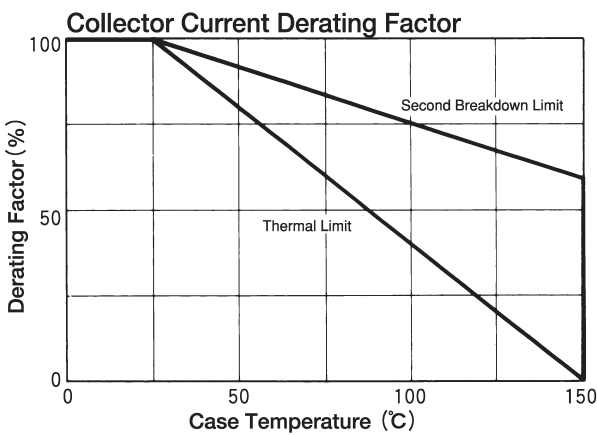
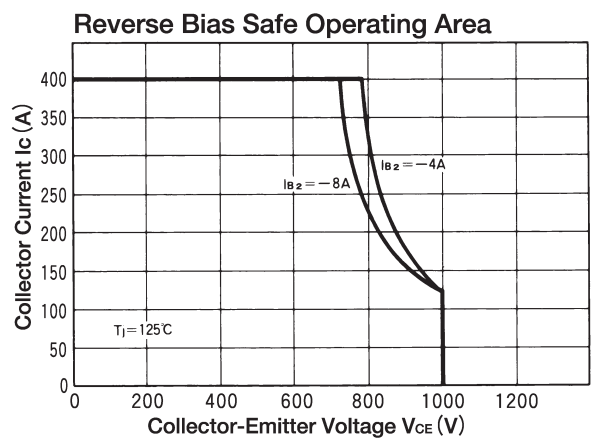
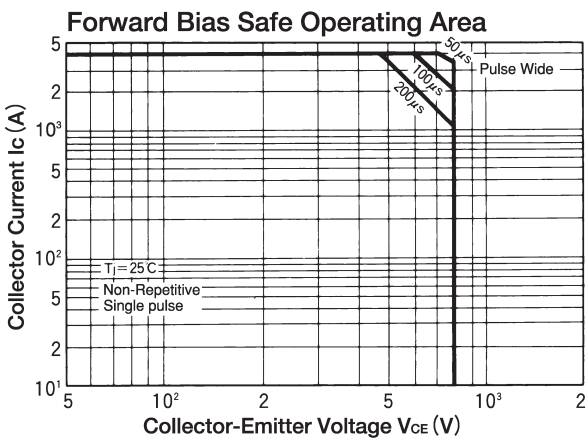
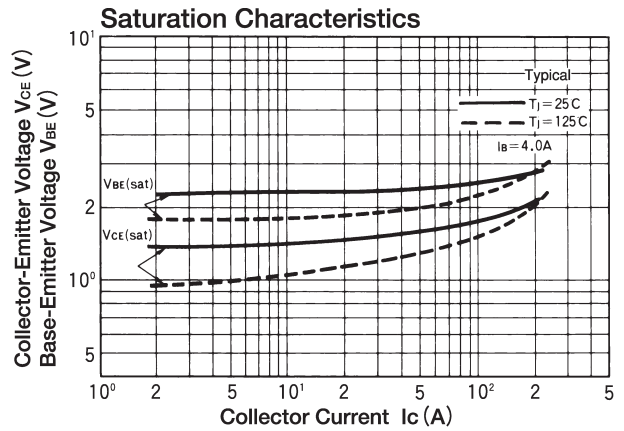
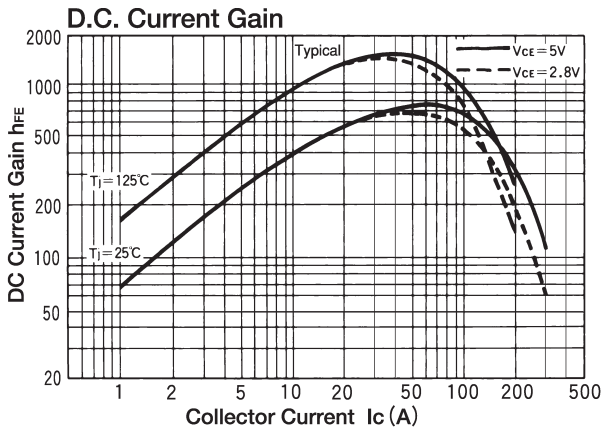
( $T_j=25^{\circ}C$ )

Symbol	Item	Conditions	Ratings	
			QCA200AA100	Unit
$V_{CBO}$	Collector-Base Voltage	Emitter open	1000	V
$V_{CEX}$	Collector-Emitter Voltage	$V_{BE} = -2V$	1000	V
$V_{CEX(SUS)}$	Collector-Emitter Sustaining 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	$T_C=25^{\circ}C$	1560	W
$T_j$	Junction Temperature		-40~150	$^{\circ}C$
$T_{stg}$	Storage Temperature		-40~125	$^{\circ}C$
$V_{iso}$	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

( $T_j=25^{\circ}C$ )

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	$I_C=200A$ , $V_{CE}=2.8V$	75		
		$I_C=200A$ , $V_{CE}=5V$	100		
$V_{CE(sat)}$	Collector-Emitter Sturation Voltage	$I_C=200A$ , $I_B=4A$		2.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=200A$ , $I_B=4A$		3.5	V
$t_{on}$	Switching Time	On Time		3.0	$\mu s$
$t_{stg}$		Storage Time	$V_{CC}=600V$ , $I_C=200A$	15.0	
$t_f$		Fall Tjme	$I_{B1}=4A$ , $I_{B2}=-4A$	3.0	
$V_{ECO}$	Collector-Emitter Reverse Voltage (Diode forward voltage drop)	$-I_C=200A$		1.8	V
$R_{th(j-c)}$	Thermal Impedance (Junction to case)	Transistor part		0.08	$^{\circ}C/W$
		Diode part		0.35	



# TRANSISTOR MODULE

# QCA200AA120



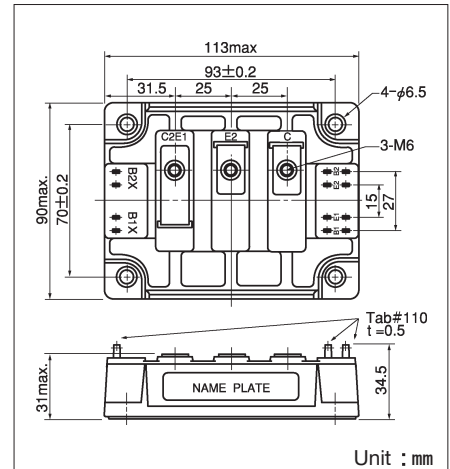
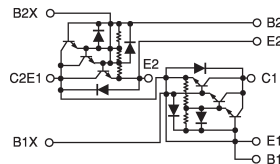
UL;E76102 (M)

QCA200AA120 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.

- $I_C=200A$ ,  $V_{CEX}=1200V$
- Low saturation voltage for higher efficiency
- High DC current gain  $h_{FE}$
- Isolated monuting base

**(Applications)**

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



**Maximum Ratings**

( $T_j=25^{\circ}C$ )

Symbol	Item	Conditions	Ratings	
			QCA200AA120	Unit
$V_{CBO}$	Collector-Base Voltage	Emitter open	1200	V
$V_{CEX}$	Collector-Emitter Voltage	$V_{BE} = -2V$	1200	V
$V_{CEX(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 40A$ , $I_{B2} = -5A$	1200	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	$T_C = 25^{\circ}C$	1560	W
$T_j$	Junction Temperature		-40~150	$^{\circ}C$
$T_{stg}$	Storage Temperature		-40~125	$^{\circ}C$
$V_{iso}$	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**

( $T_j=25^{\circ}C$ )

Symbol	Item	Conditions	Ratings		Unit
			Min.	Max	
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = 1000V$ Emtter open		4.00	mA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 10V$ Collector open		500	mA
$h_{FE}$	D.C. Current Gain	$I_C = 200A$ , $V_{CE} = 5V$	75		
$V_{CE(sat)}$	Collector-Emitter Sturation Voltage	$I_C = 200A$ , $I_B = 4A$		3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 200A$ , $I_B = 4A$		3.5	V
$t_{on}$	Switching Time	On Time		3.0	$\mu s$
$t_{stg}$		Storage Time	$V_{CC} = 600V$ , $I_C = 200A$ $I_{B1} = 4A$ , $I_{B2} = -4A$	15.00	
$t_f$		Fall Time		3.0	
$V_{ECO}$	Collector-Emitter Reverse Voltage (Diode forward voltage drop)	$-I_C = 200A$		1.8	V
$R_{th(j-c)}$	Thermal Impedance (Junction to case)	Transistor part		0.08	$^{\circ}C/W$
		Diode part		0.35	

