

# TRANSISTOR MODULE

# QCA150AA120

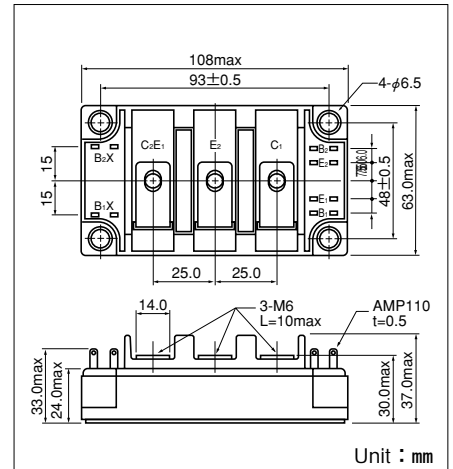
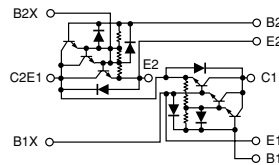
UL:E76102(M)

QCA150AA120 is a dual Darlington power transistor module which 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,

- $I_C=150A$ ,  $V_{CEX}=1200V$
- Low saturation voltage for higher efficiency.
- High DC current gain  $h_{FE}$
- Isolated mounting base

**(Applications)**

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



**Maximum Ratings**

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

Symbol	Item	Conditions	Ratings		Unit
			QCA150AA120		
V <sub>CB0</sub>	Collector-Base Voltage		1200		V
V <sub>CEX</sub>	Collector-Emitter Voltage	V <sub>BE</sub> =-2V	1200		V
V <sub>EBO</sub>	Emitter-Base Voltage		10		V
I <sub>C</sub>	Collector Current		150		A
-I <sub>C</sub>	Reverse Collector Current		150		A
I <sub>B</sub>	Base Current		8		A
P <sub>T</sub>	Total power dissipation	T <sub>C</sub> =25°C	1000		W
T <sub>j</sub>	Junction Temperature		-40 to +150		°C
T <sub>stg</sub>	Storage Temperature		-40 to +125		°C
V <sub>iso</sub>	Isolation Voltage	A.C.1minute	2500		V
	Mounting Torque	Mounting (M6)	Recommended Value 2.5-3.9 (25-40)		N·m (kgf·cm)
		Terminal (M6)	Recommended Value 2.5-3.9 (25-40)		
	Mass	Typical Value	470		g

**Electrical Characteristics**

Symbol	Item	Conditions	Ratings		Unit
			Min.	Max.	
I <sub>CB0</sub>	Collector Cut-off Current	V <sub>CB</sub> =1200V		2.0	mA
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>EB</sub> =10V		600	mA
V <sub>CEX(SUS)</sub>	Collector Emitter Sustaining Voltage	I <sub>C</sub> =30A, I <sub>B2</sub> =-6A	1200		V
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> =150A, V <sub>CE</sub> =5V	75		
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> =150A, I <sub>B</sub> =3A		3.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> =150A, I <sub>B</sub> =3A		3.5	V
ton	Switching Time	On Time		3.0	μs
ts		Storage Time	V <sub>CC</sub> =600V, I <sub>C</sub> =150A I <sub>B1</sub> =3A, I <sub>B2</sub> =-3A	15.0	
tf		Fall Time		3.0	
V <sub>ECO</sub>	Collector-Emitter Reverse Voltage	-I <sub>C</sub> =150A		1.8	V
R <sub>th(j-c)</sub>	Thermal Impedance (junction to case)	Transistor part		0.125	°C/W
		Diode part		0.6	

