

TRANSISTOR MODULE

QCA50AA120

TOP



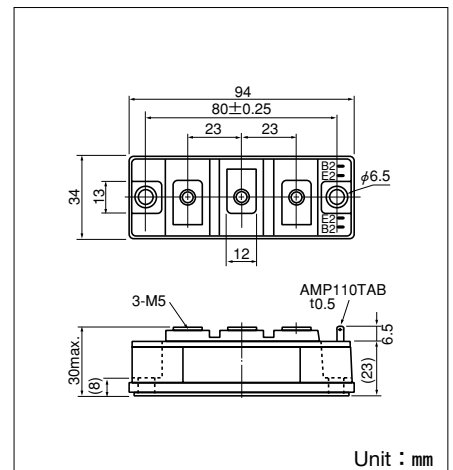
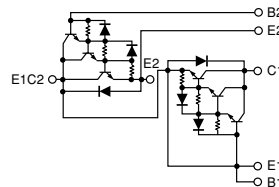
UL;E76102 (M)

QCA50AA120 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,

- $I_C=50A$, $V_{CEX}=1200V$
- 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
				QCA50AA120	
V_{CBO}	Collector-Base Voltage			1200	V
V_{CEX}	Collector-Emitter Voltage		$V_{BE}=-2V$	1200	V
V_{EBO}	Emitter-Base Voltage			10	V
I_C	Collector Current			50	A
$-I_C$	Reverse Collector Current			50	A
I_B	Base Current			3	A
P_T	Total power dissipation		$T_C=25^{\circ}C$	400	W
T_j	Junction Temperature			-40 to $+150$	$^{\circ}C$
T_{stg}	Storage Temperature			-40 to $+125$	$^{\circ}C$
V_{ISO}	Isolation Voltage		A.C.1minute	2500	V
	Mounting Torque	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)	
	Mass		Typical Value	210	g

Electrical Characteristics

Symbol	Item		Conditions	Ratings		Unit
				Min.	Max.	
I_{CBO}	Collector Cut-off Current		$V_{CB}=1200V$		1.0	mA
I_{EBO}	Emitter Cut-off Current		$V_{EB}=10V$		300	mA
$V_{CEX(SUS)}$	Collector Emitter Sustaining Voltage		$I_C=10A$, $I_B=-2A$	1200		V
h_{FE}	DC Current Gain		$I_C=50A$, $V_{CE}=5V$	75		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		$I_C=50A$, $I_B=1A$		3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		$I_C=50A$, $I_B=1A$		3.5	V
t_{on}	Switching Time	On Time	$V_{CC}=600V$, $I_C=50A$ $I_{B1}=1A$, $I_{B2}=-1A$		2.5	μs
t_s		Storage Time			15.0	
t_f		Fall Time			3.0	
V_{ECO}	Collector-Emitter Reverse Voltage		$-I_C=50A$		1.8	V
$R_{th(j-c)}$	Thermal Impedance (junction to case)		Transistor part		0.31	$^{\circ}C/W$
			Diode part		1.2	

