

TRANSISTOR MODULE (Hi-β)**QCA300BA60**

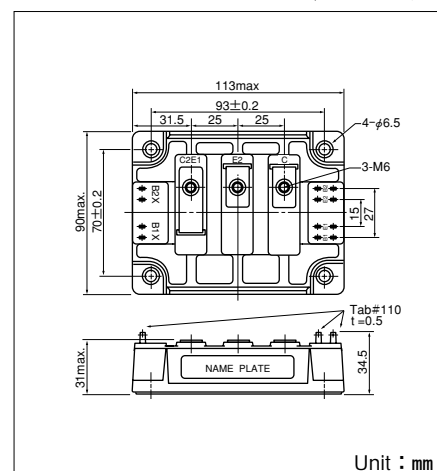
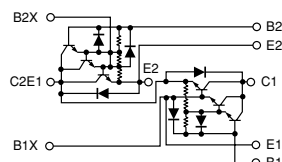
UL;E76102(M)

QCA300BA60 is a dual Darlington power transistor module which has series-connected **ULTRA HIGH** h_{FE} , high speed, high power Darlington transistor. Each transistor has a reverse paralleled fast recovery diode ($trr : 200ns$). The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction,

- $I_C = 300A$, $V_{CEX} = 600V$
- Low saturation voltage for higher efficiency.
- **ULTRA HIGH** DC current gain h_{FE} . $h_{FE} \geq 750$
- Isolated mounting base
- $V_{EBO} 10V$ for faster switching speed.

(Applications)

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



Unit : mm

Maximum Ratings(T_j=25°C unless otherwise specified)

Symbol	Item	Conditions	Ratings		Unit
			QCA300BA60		
V _{CB0}	Collector-Base Voltage		600		V
V _{CEX}	Collector-Emitter Voltage	V _{BE} =-2V	600		V
V _{CEX(sus)}	Collector-Emitter sustaining voltage	I _C =60V I _{B2} =-5A	600		V
V _{EBO}	Emitter-Base Voltage		10		V
I _C	Collector Current	() pw ≤ 1ms	300 (600)		A
-I _C	Reverse Collector Current		300		A
I _B	Base Current		18		A
P _T	Total power dissipation	T _C =25°C	1380		W
T _j	Junction Temperature		-40 to +150		°C
T _{stg}	Storage Temperature		-40 to +125		°C
V _{iso}	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	675		g

Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I _{CB0}	Collector Cut-off Current	V _{CB} =V _{CB0}			4.0	mA
I _{EBO}	Emitter Cut-off Current	V _{EB} =V _{EBO}			500	mA
h _{FE}	D.C. Current Gain	I _C =300A, V _{CE} =2.5V	750			
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C =300A, I _B =400mA			2.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C =300A, I _B =400mA			3.0	V
ton	Switching Time	On Time			2.0	μs
ts		Storage Time	V _{CC} =300V, I _C =300A I _{B1} =0.6A, I _{B2} =-6A		8.0	
tf		Fall Time			2.0	
V _{ECO}	Collector-Emitter Reverse Voltage	I _C =-300A			2.2	V
trr	Reverse Recovery time	V _{CC} =300V, I _C =-300A, -di/dt=300A/μs, V _{BE} =-5V		200		ns
R _{th(j-c)}	Thermal Impedance (junction to case)	Transistor part			0.08	°C/W
		Diode part			0.35	

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