

TRANSISTOR MODULE (THREE PHASES BRIDGE TYPE)

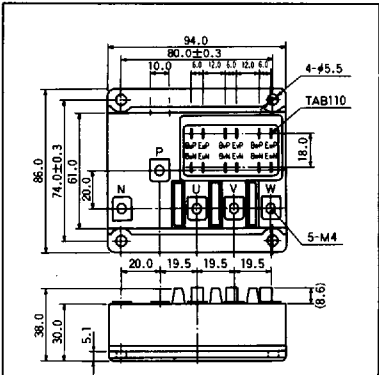
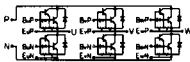
QF50AA40/60

QF50AA is a six pack Darlington power transistor module which has six transistors connected in three phase bridge configuration. 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.

- $I_C = 50A$ $V_{CEX} = 400/600V$
- Low saturation voltage for higher efficiency.
- High DC current gain h_{FE}
- Isolated mounting base
- $V_{EBO} 10V$ for faster switching speed.

(Applications)

Motor Control (VVVF), AC Servo, UPS



Unit : mm
 $T_j = 25^{\circ}C$

Maximum Ratings

Symbol	Item		Conditions	Ratings		Unit
				QF50AA40	QF50AA60	
V _{CB0}	Collector-Base Voltage			400	600	V
V _{CEX}	Collector-Emitter Voltage		V _{BE} = -2V	400	600	V
V _{EBO}	Emitter-Base Voltage			10		V
I _C	Collector Current		() = p _w ≤ 1ms	50 (100)		A
-I _C	Reverse Collector Current			50		A
I _B	Base Current			3		A
P _T	Total power dissipation		T _c = 25°C	300		W
T _j	Junction Temperature			-40~+150		°C
T _{stg}	Storage Temperature			-40~+125		°C
V _{ISO}	Isolation Voltage		A.C. 1minute	2500		V
	Mounting Torque	(M5)	Recommended Value 1.5~2.5 (15~25)	2.7 (28)		N·m (kgf·cm)
		Terminal (M4)	Recommended Value 1.0~1.4 (10~14)	1.5 (15)		
	Mass		Typical value	400		g

Electrical Characteristics

$T_j = 25^{\circ}C$

Symbol	Item		Conditions	Ratings		Unit
				Min.	Max.	
I _{CB0}	Collector Cut-off Current		V _{CB} = V _{CB0}		1.0	mA
I _{EB0}	Emitter Cut-off Current		V _{EB} = V _{EB0}		300	mA
V _{CE0(SUS)}	Collector-Emitter	QF50AA40	I _C = 1A	300		V
		QF50AA60		450		
V _{CEX(SUS)}	Sustaning Voltage	QF50AA40	I _C = 10A I _{B2} = − 5A	400		V
		QF50AA60		600		
h _{FE}	DC Current Gain		I _C = 50A V _{CE} = 2V	75		
			I _C = 50A V _{CE} = 5V	100		
V _{CE(sat)}	Collector-Emitter Saturation Voltage		I _C = 50A I _B = 0.67A		2.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage		I _C = 50A I _B = 0.67A		2.5	V
t _{on}	Switching Time	On Time	V _{CC} = 300V I _C = 50A I _{B1} = 1A I _{B2} = − 1A		1.0	μs
t _s		Storage Time			12.0	
t _f		Fall Tjme			2.0	
V _{ECO}	Collector-Emitter Reverse Voltage		− I _C = 50A		1.4	V
R _{th(j-c)}	Thermal Impedance (junction to case)		Transistor part		0.4	°C/W
			Diode part		1.3	

