

TRANSISTOR MODULE (THREE PHASES BRIDGE TYPE)

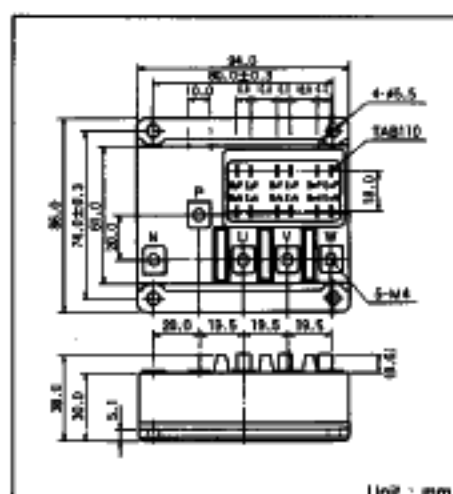
QF50AA40/60

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.

- $I_c = 50A$ $V_{CE} = 400/600V$
- Low saturation voltage for higher efficiency.
- High DC current gain h_{FE}
- Isolated mounting base
- $V_{CEO} 10V$ 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_{EB0}	Emitter-Base Voltage		10		V
I_c	Collector Current	() = $pw \leq 1ms$	50 (100)		A
$-I_c$	Reverse Collector Current		50		A
I_b	Base Current		3		A
P_T	Total power dissipation	$T_c = 25^\circ C$	300		W
T_j	Junction Temperature		-40 ~ +150		$^\circ C$
T_{stg}	Storage Temperature		-40 ~ +125		$^\circ C$
V_{iso}	Isolation Voltage	A.C. 1minute	2500		V
	Mounting Torque	(M5)	Recommended Value 1.5~2.5 (15~25)		N·m (kgf·cm)
		Terminal (M4)	Recommended Value 1.0~1.4 (10~14)		
	Mass	Typical value	400		g

Electrical Characteristics

$T_j = 25^\circ C$

Symbol	Item	Conditions	Ratings		Unit
			Min.	Max.	
I_{C0}	Collector Cut-off Current	$V_{CB} = V_{CB0}$		1.0	mA
I_{E0}	Emitter Cut-off Current	$V_{EB} = V_{EB0}$		300	mA
$V_{CE0(SUS)}$	Collector-Emitter Sustaining Voltage	QF50AA40	300		V
		QF50AA60	450		
$V_{CEX(SUS)}$	Collector-Emitter Sustaining Voltage	QF50AA40	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	$V_{CC} = 300V$ $I_c = 50A$ $I_{B1} = 1A$ $I_{B2} = -1A$	1.0		μs
t_s			12.0		
t_f			2.0		
V_{CE0}	Collector-Emitter Reverse Voltage	$-I_c = 50A$	1.4		V
$R_{th(j-c)}$	Thermal Impedance (junction to case)	Transistor part	0.4		$^\circ C/W$
		Diode part	1.3		

