

# TRANSISTOR MODULE (THREE PHASES BRIDGE TYPE)

## QF30AA40/60

TOP

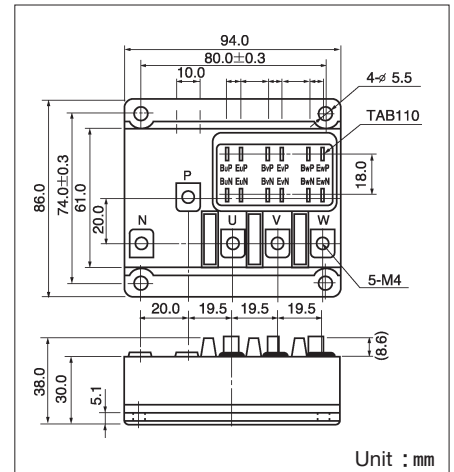
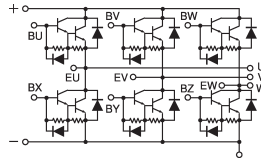


QF30AA is six pack Darlington power transistor module which has six transistors connected in three phase bridge configuration. Each transistor has a reverse paralleled fast recovery diode. The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction.

- $I_C=30A$ ,  $V_{CEX}=400/600V$
- 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 (VVF), AC Servo, UPS



### Maximum Ratings

( $T_j=25^\circ C$ )

Symbol	Item	Conditions	Ratings		Unit
			QF30AA40	QF30AA60	
$V_{CB0}$	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	( ) = $pw \leq 1ms$	30 (60)		A
$-I_C$	Reverse Collector Current		30		A
$I_B$	Base Current		2		A
$P_T$	Total power dissipation	$T_C = 25^\circ C$	250		W
$T_j$	Junction Temperature		$-40 \sim +150$		$^\circ C$
$T_{stg}$	Storage Temperature		$-40 \sim +125$		$^\circ C$
$V_{iso}$	Isolation Voltage	A.C.1minute	2500		V
	Mounting Torque	Mounting (M6)	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.	
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = V_{CB0}$		1.0	mA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = V_{EBO}$		300	mA
$V_{CE0(SUS)}$	Collector Emitter Sustaining Voltage	QF30AA40	300		V
		QF30AA60	450		
$V_{CEX(SUS)}$	Collector Emitter Sustaining Voltage	QF30AA40	400		V
		QF30AA60	600		
$h_{FE}$	DC Current Gain	$I_C = 30A, V_{CE} = 2V$	75		
		$I_C = 30A, V_{CE} = 5V$	100		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 30A, I_B = 0.4A$		2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 30A, I_B = 0.4A$		2.5	V
$t_{on}$	Switching Time	$V_{CC} = 300V, I_C = 30A$ $I_{B1} = 0.6A, I_{B2} = -0.6A$		1.0	$\mu s$
$t_s$				12.0	
$t_f$				2.0	
$V_{ECO}$	Collector-Emitter Reverse Voltage	$-I_C = 30A$		1.4	V
$R_{th(j-c)}$	Thermal Impedance (junction to case)	Transistor part		0.5	$^\circ C/W$
		Diode part		1.6	

