

TRANSISTOR MODULE (THREE PHASES BRIDGE TYPE)

QF20AA40/60

TOP

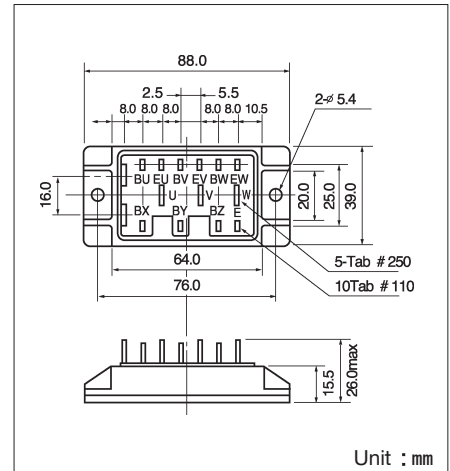
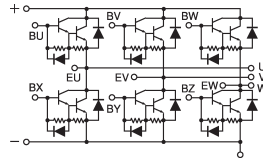


QF20AA is six pack Darlington power transistor module which has six transistors connected in three phase bridge configuration. Each transistor has a reverse paralleled fast recovery diode. The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction,

- $I_C=20A$, $V_{CEX}=400/600V$
- 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



Unit : mm

Maximum Ratings

($T_j=25^\circ C$)

Symbol	Item	Conditions	Ratings		Unit
			QF20AA40	QF20AA60	
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 $\leq 1ms$	20 (40)		A
$-I_C$	Reverse Collector Current		20		A
I_B	Base Current		2		A
P_T	Total power dissipation	$T_C=25^\circ C$	160		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)	2.7 (28)		N·m (kgf·cm)
	Mass	Typical Value	95		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	$V_{EB}=V_{EBO}$		200	mA
$V_{CE0(SUS)}$	Collector Emitter Sustaining Voltage	QF20AA40	300		V
		QF20AA60			
$V_{CEX(SUS)}$	Collector Emitter Sustaining Voltage	QF20AA40	400		V
		QF20AA60			
h_{FE}	DC Current Gain	$I_C=20A, V_{CE}=2V$	75		
		$I_C=20A, V_{CE}=5V$	100		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=20A, I_B=0.27A$	2.0		V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=20A, I_B=0.27A$	2.5		V
t_{on}	Switching Time	On Time	1.0		μs
t_s		Storage Time	12.0		
t_f		Fall Time	2.0		
V_{ECO}	Collector-Emitter Reverse Voltage	$-I_C=20A$	1.6		V
$R_{th(j-c)}$	Thermal Impedance (junction to case)	Transistor part	0.8		$^\circ C/W$
		Diode part	2.2		

