

TRANSISTOR MODULE (THREE PHASES BRIDGE TYPE)

QF50AA40/60

TOP

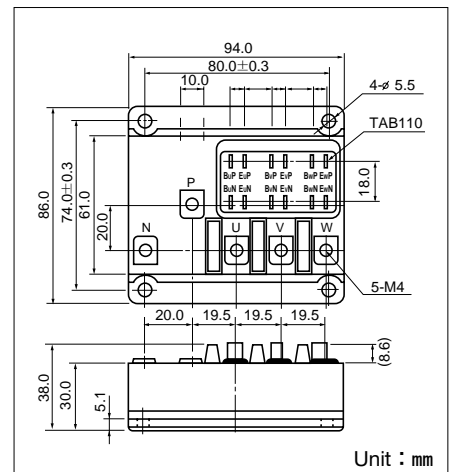
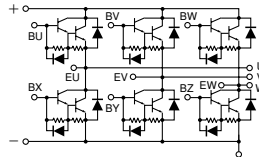


QF50AA is six pack Darlington power transistor module which has six transistors connected in three phase bridge configuration. Each transistor has a reverse paralleled fast recovery diode. The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction,

- $I_C=50A$, $V_{CEX}=400/600V$
- 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 (VWF), AC Servo, UPS



Maximum Ratings

($T_j=25^\circ C$ unless otherwise specified)

Symbol	Item	Conditions	Ratings		Unit
			QF50AA40	QF50AA60	
V_{CBO}	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	() = $p_w \leq 1ms$	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 to +150		$^\circ C$
T_{stg}	Storage Temperature		-40 to +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

Symbol	Item	Conditions	Ratings		Unit
			Min.	Max.	
I_{CBO}	Collector Cut-off Current	$V_{CB}=V_{CBO}$		1.0	mA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=V_{EBO}$		300	mA
$V_{CEO(SUS)}$	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	On Time		1.0	μs
t_s		Storage Time	$V_{CC}=300V$, $I_C=50A$ $I_{B1}=1A$, $I_{B2}=-1A$	12.0	
t_f		Fall Time		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	$^\circ C/W$
		Diode part		1.3	

