

TRANSISTOR MODULE

SQD400AA100

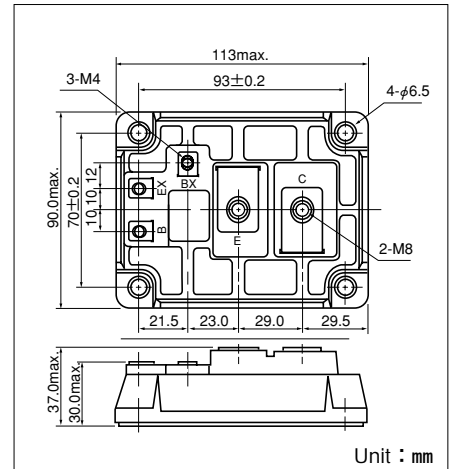
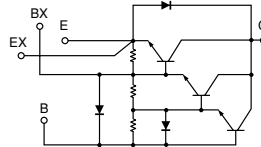
UL:E76102(M)

SQD400AA100 is a Darlington power transistor module with a high speed, high power Darlington transistor. The transistor has a reverse paralleled fast recovery diode. The mounting base of the module is electrically isolated from Semiconductor elements for simple heatsink construction.

- $I_C=400A$, $V_{CEX}=1000V$
- Low saturation voltage High DC current gain
- Isolated mounting base

(Applications)

Motor Control (VVVF), AC/DC Servo, UPS,
Switching Power Supply, Ultrasonic Application



Maximum Ratings

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

Symbol	Item	Conditions	Ratings		Unit
			SQD400AA100		
V_{CBO}	Collector-Base Voltage		1000		V
V_{CEX}	Collector-Emitter Voltage	$V_{BE}=-2V$	1200		V
$V_{CEX(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=-80A$, $I_B=-18A$	1000		V
V_{EBO}	Emitterr-Base Voltage		10		V
I_C	Collector Current		400		A
$-I_C$	Reverse Collector Current		400		A
I_B	Base Current		20		A
P_T	Total power dissipation	$T_C=25^\circ\text{C}$	3120		W
T_j	Junction Temperature		-40 to +150		$^\circ\text{C}$
T_{stg}	Storage Temperature		-40 to +125		$^\circ\text{C}$
V_{iso}	Isolation Voltage	A.C. 1minute	2500		V
	Mounting Torque	Mouting (M6)	Recommended Value 2.5-3.9 (25-40)	4.7 (48)	N·m (kgf·cm)
		Terminal (M8)	Recommended Value 8.8-10 (90-105)	11 (115)	
		Terminal (M4)	Recommended Value 1.0-1.4 (10-14)	1.5 (15)	
	Mass	Typical Value	670		g

Electrical Characteristics

Symbol	Item	Conditions	Ratings		Unit
			Min.	Max.	
I_{CBO}	Collector Cut-off Current	$V_{CB}=1000V$		3.0	mA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=10V$		1000	mA
h_{FE}	DC Current Gain	$I_C=300A$, $V_{CE}=2.8V$	75		
		$I_C=400A$, $V_{CE}=5V$	100		
$V_{CE(sat)}$	Collector-Emitter Sturation Voltage	$I_C=400A$, $I_B=8A$		2.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=400A$, $I_B=8A$		3.5	V
t_{on}	Switching Time	$V_{CC}=600V$, $I_C=400A$ $I_{B1}=8A$, $I_{B2}=-8A$		3.0	μs
t_s				16.0	
t_f				3.0	
V_{ECO}	$I_C=-400A$	Collector-Emitter Reverse Voltage		1.8	V
$R_{th(j-c)}$	Thermal Impedance (junction to case)	Transistor part		0.04	$^\circ\text{C}/W$
		Diode part		0.16	

