

TRANSISTOR MODULE (Hi- β)

SQD300BA60

TOP



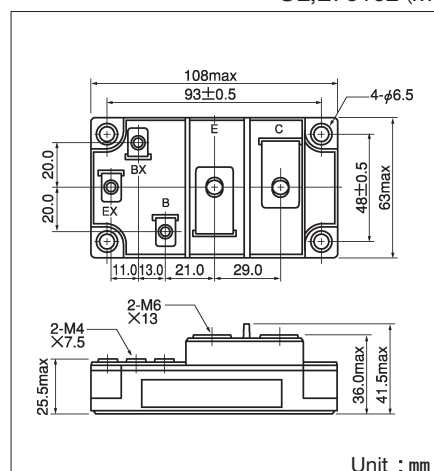
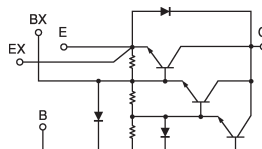
UL;E76102 (M)

SQD300BA60 is a Darlington power transistor module with a **ULTRA HIGH** h_{FE} , high speed, high power Darlington transistor. The transistor has a reverse paralleled fast recovery diode (t_{rr} : 200ns). The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction,

- $I_C=300A$, $V_{CEX}=600V$
- Low saturation voltage for higher efficiency.
- ULTRA HIGH DC current gain h_{FE} . $h_{FE} \geq 750$
- Isolated mounting base
- V_{EBO} 10V for faster switching speed.

(Applications)

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



Maximum Ratings

($T_j=25^\circ C$)

Symbol	Item	Conditions	Ratings	Unit
			SQD300BA60	
V_{CBO}	Collector-Base Voltage		600	V
V_{CEX}	Collector-Emitter Voltage	$V_{BE} = -2V$	600	V
V_{EBO}	Emitter-Base Voltage		10	V
I_C	Collector Current	() = $p_w \leq 1ms$	300 (600)	A
$-I_C$	Reverse Collector Current		300	A
I_B	Base Current		18	A
P_T	Total power dissipation	$T_C=25^\circ C$	1380	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	(M6)	Recommended Value 2.5~3.9 (25~40)	N·m (kgf·cm)
		Terminal (M6)	Recommended Value 2.5~3.9 (25~40)	
		Terminal (M4)	Recommended Value 1.0~1.4 (10~14)	
	Mass	Typical Value	460	g

Electrical Characteristics

($T_j=25^\circ C$)

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I_{CBO}	Collector Cut-off Current	$V_{CB}=V_{CBO}$			4.0	mA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=V_{EBO}$			1200	mA
$V_{CEO(SUS)}$	Collector Emitter Sustaining Voltage	$I_C=1A$	450			V
$V_{CEX(SUS)}$		$I_C=60A$, $I_{B2}=-10A$	600			
h_{FE}	DC Current Gain	$I_C=300A$, $V_{CE}=2.5V$	750			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=300A$, $I_B=400mA$			2.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=300A$, $I_B=400mA$			3.0	V
t_{on}	Switching Time	On Time			2.0	μs
t_s		Storage Time			8.0	
t_f		Fall Time			2.0	
V_{ECO}	Collector-Emitter Reverse Voltage	$I_C=-300A$			1.8	V
t_{rr}	Reverse Recovery time	$V_{CC}=300V$, $I_C=-300A$, $-di/dt=300A/\mu s$, $V_{BE}=-5V$		200		ns
$R_{th(j-c)}$	Thermal Impedance (junction to case)	Transistor part			0.09	$^\circ C/W$
		Diode part			0.3	

