

TRANSISTOR MODULE

SQD300A40/60

TOP



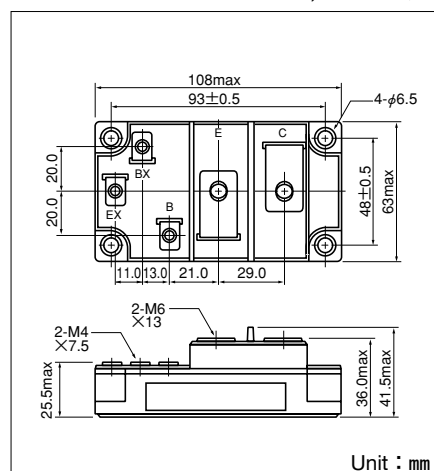
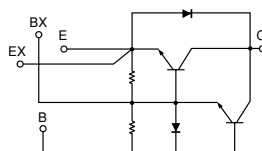
UL;E76102 (M)

SQD300A is a Darlington power transistor module which a high speed, high power Darlington transistor. The transistor has a reverse paralred fast recovery diode. The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction,

- $I_C=300A$, $V_{CEX}=400/600V$
- 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 (VVVF), AC/DC Servo, UPS,
Switching Power Supply, Ultrasonic Application



Maximum Ratings

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

Symbol	Item		Conditions	Ratings		Unit
				SQD300A40	SQD300A60	
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		() =pw≤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℃	1380		W
T _j	Junction Temperature			−40 to +150		℃
T _{stg}	Storage Temperature			−40 to +125		℃
V _{iso}	Isolation Voltage		A.C.1minute	2500		V
	Mounting Torque	Mounting (M6)	Recommended Value 2.5-3.9 (25-40)	4.7 (48)		N·m (kgf·cm)
		Terminal (M6)	Recommended Value 2.5-3.9 (25-40)	4.7 (48)		
		Terminal (M4)	Recommended Value 1.0-1.4 (10-14)	1.5 (15)		
	Mass		Typical Value	460		g

Electrical Characteristics

Symbol	Item		Conditions	Ratings		Unit
				Min.	Max.	
I_{CBO}	Collector Cut-off Current		$V_{CB}=V_{CBO}$		3.0	mA
I_{EBO}	Emitter Cut-off Current		$V_{EB}=V_{EBO}$		1000	mA
$V_{CEO(SUS)}$	Collector Emitter Sustaning Voltage	SQD300A40	$I_C=1A$	300		V
		SQD300A60		450		
$V_{CEX(SUS)}$		SQD300A40	$I_C=60A, I_{B2}=-10A$	400		V
		SQD300A60		600		
h_{FE}	DC Current Gain		$I_C=300A, V_{CE}=2V$	75		
			$I_C=300A, V_{CE}=5V$	100		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		$I_C=300A, I_B=4.0A$		2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		$I_C=300A, I_B=4.0A$		2.5	V
t_{on}	Switching Time	On Time	$V_{CC}=300V, I_C=300A$ $I_{B1}=6A, I_{B2}=-6A$		2.0	μs
t_s		Storage Time			12.0	
t_f		Fall Time			3.0	
V_{ECO}	Collector-Emitter Reverse Voltage		$-I_C=300A$		1.4	V
$R_{th(j-c)}$	Thermal Impedance (junction to case)		Transistor part		0.09	$^{\circ}C/W$
			Diode part		0.3	

