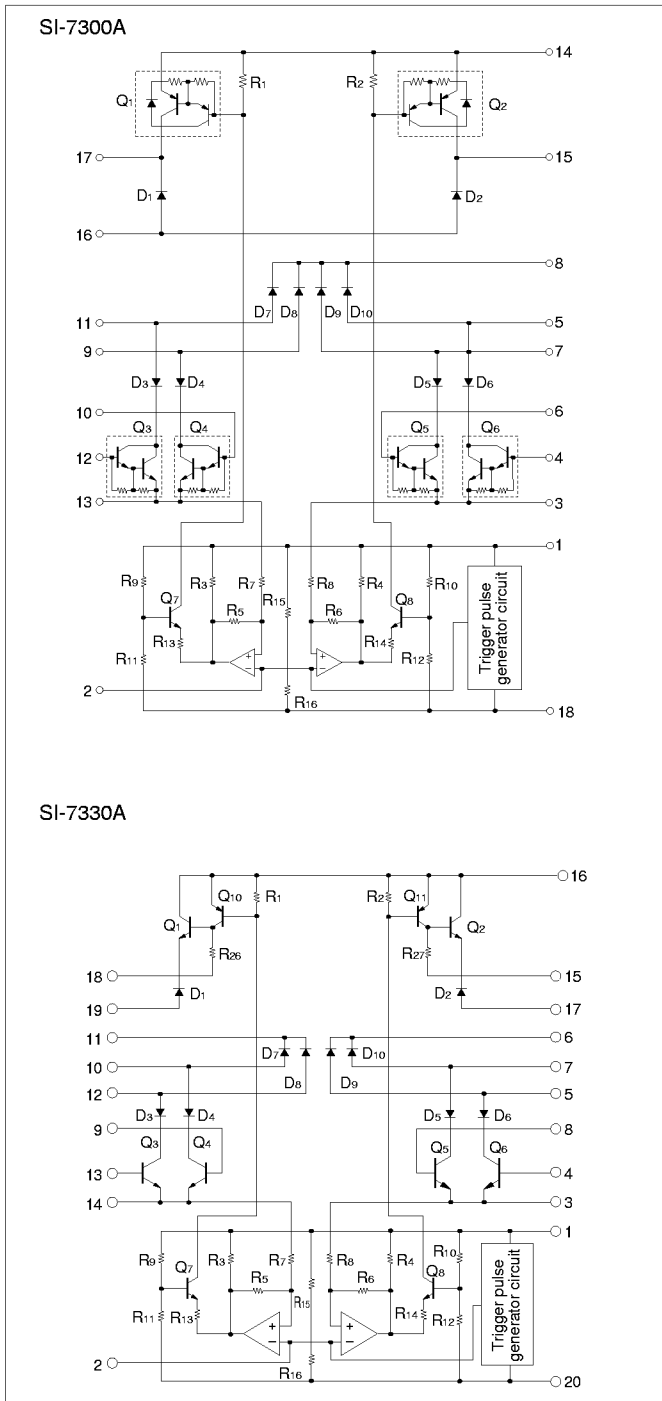


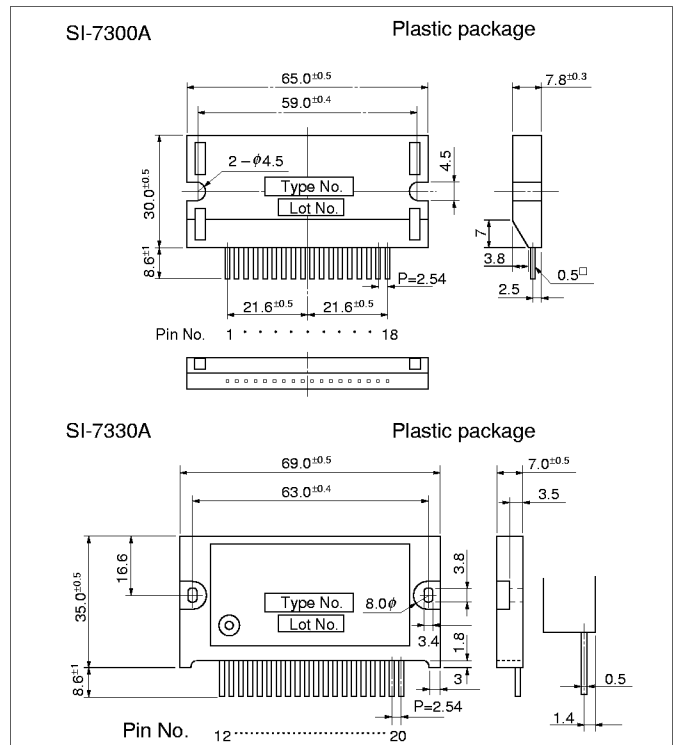
SI-7300 and SI-7330A

Equivalent circuit diagram

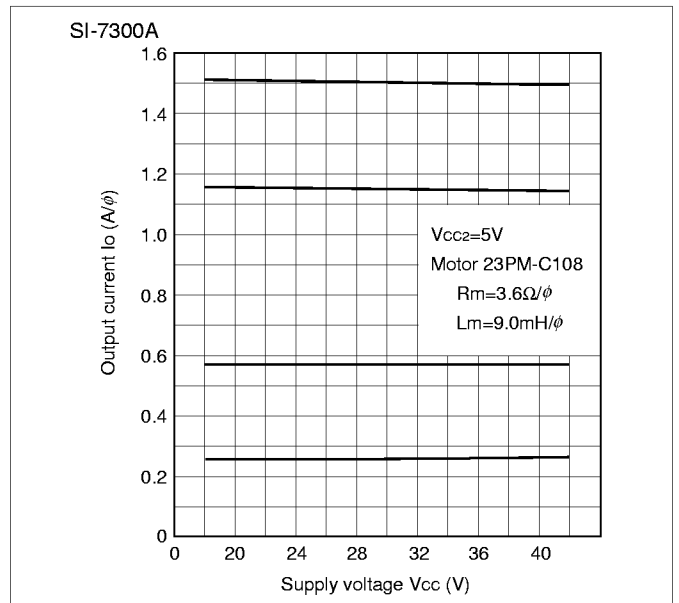


External dimensions

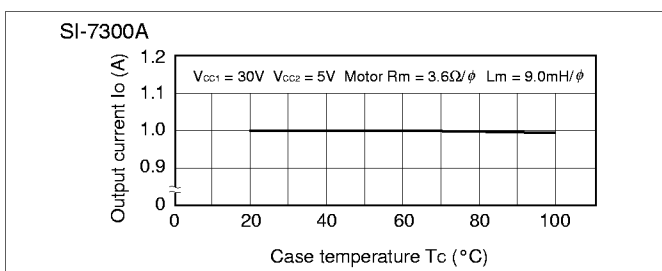
(Unit: mm)



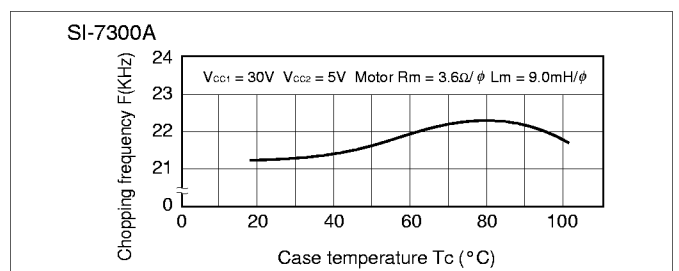
Supply voltage vs. Output current



Case temperature vs. Output current



Case temperature vs. Chopping frequency



SI-7300 and SI-7330A

Application Note

■ Determining the output current I_o (motor coil current)

The output current, I_o is fixed by the following circuit elements:

- R_s : Current detection resistor
- V_{CC2} : Supply voltage
- R_x : Variable current resistor

To operate a motor at maximum current level, set $R_x = \infty$ (open). Based on the specifications of SI-7300A, its output current I_o can be seen as:

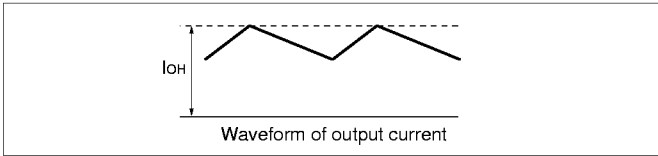
I_o (rms value): 535 to 625 mA

To compute I_o when different values are used for R_s and V_{CC2} , use the approximation formula below. The maximum ripple value I_{OH} of the output current waveform can be computed as follows:

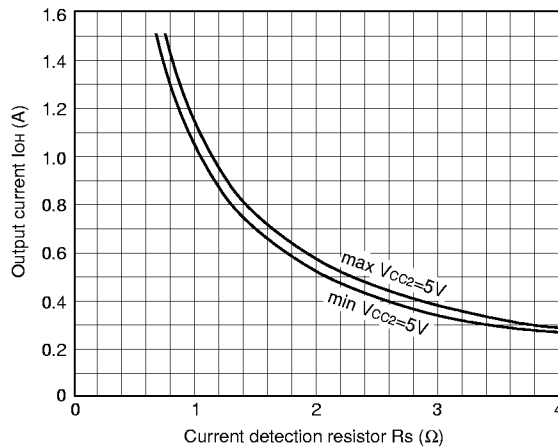
$$I_{OH(max)} \approx \frac{1}{R_s} (0.233 \cdot V_{CC2} - 0.026) \text{ [A]}$$

$$I_{OH(min)} \approx \frac{1}{R_s} (0.214 \cdot V_{CC2} - 0.021) \text{ [A]}$$

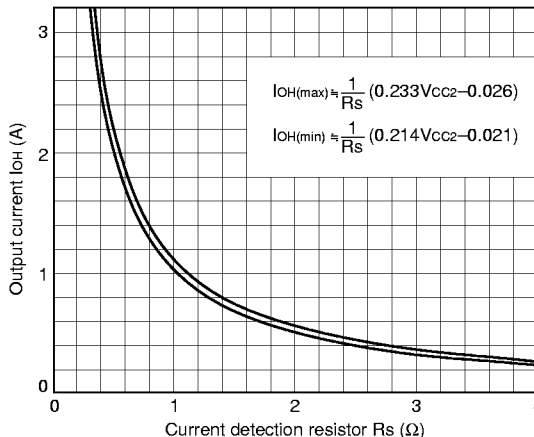
The graph of this equation is shown below.



SI-7300A Output current I_{OH} vs. Current detection resistor R_s

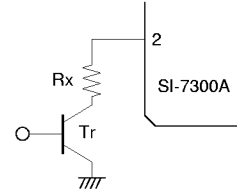


SI-7330A Output current I_{OH} vs. Current detection resistor R_s

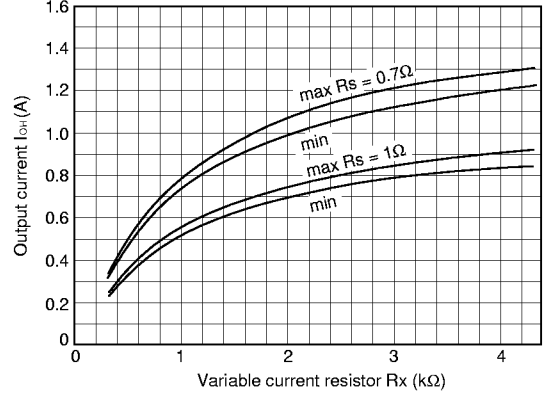


■ Power down mode

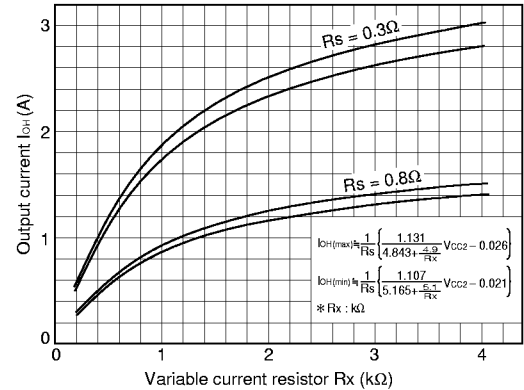
The SI-7300A can be operated in power down mode. The circuit is shown below. When transistor Tr is switched on, the reference voltage drops and the output current can be decreased.



SI-7300A Output current I_{OH} vs. Variable current resistor R_x



SI-7330A Output current I_{OH} vs. Variable current resistor R_x



■ Example of a Frequency vs. Torque characteristic

The graph shows the relationship between frequency and pull-out torque of SI-7300A.

SI-7300A Pull-out torque τ_{out} vs. Response frequency

