T-52-13-25

SI-7200E, SI-7230E Series

Stepping Motor Driver

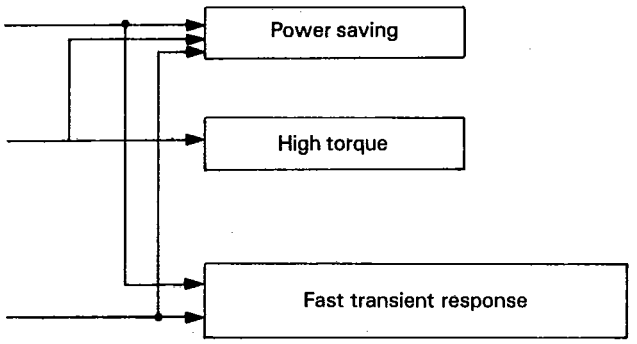
Features:

Effective power saving, high torque and fast transient response.

1) **Chopped constant current drive**
made it unnecessary to put series resistor.

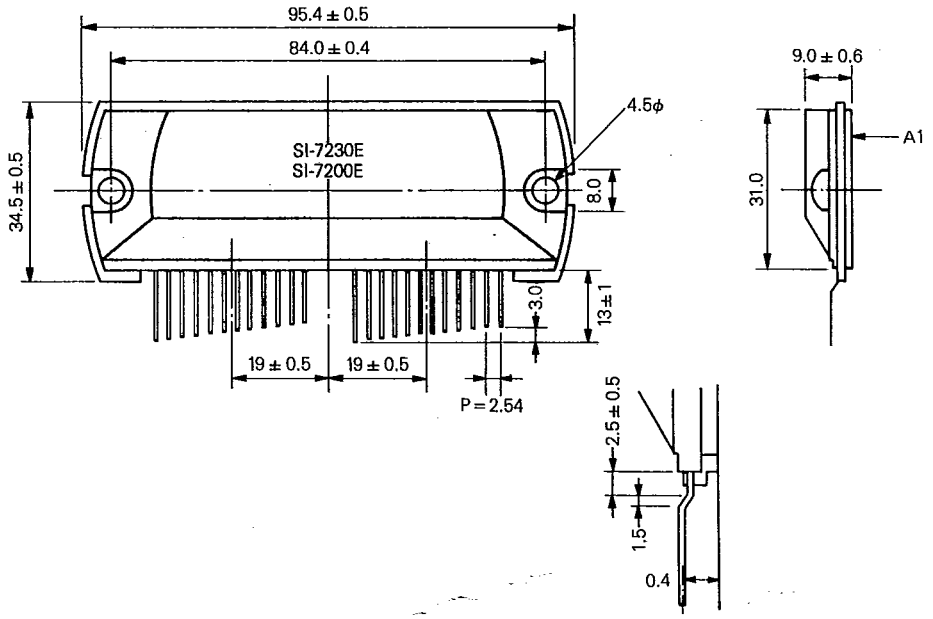
2) **Full bridge bipolar driver**
made it possible to use the coils of motor effectively.

3) **Surge voltage utilization**
reuses the inductive energy by charging it to capacitor, which does not require damping circuit.



The IC makes total system compact because of low power dissipation and because of integrated circuit utilization. Output torque can be controlled easily by PWM circuit. It can be applied to the double1-2 phase excitation motors.

Outline Drawings Unit: mm



Absolute Maximum Ratings (Ta = 25°C)

Description	Symbol	Unit	Rating	
			SI-7200E	SI-7230E
Supply Voltage	Vcc	V	60	
Surge Voltage	Vcc	V	70(Surge)	
Output Current	Io	A	1.2	3.0
Junction Temperature	Tj	°C	125	
Operating Temperature	Top	°C	−20~+80	
Storage Temperature	Tstg	°C	−30~+100	

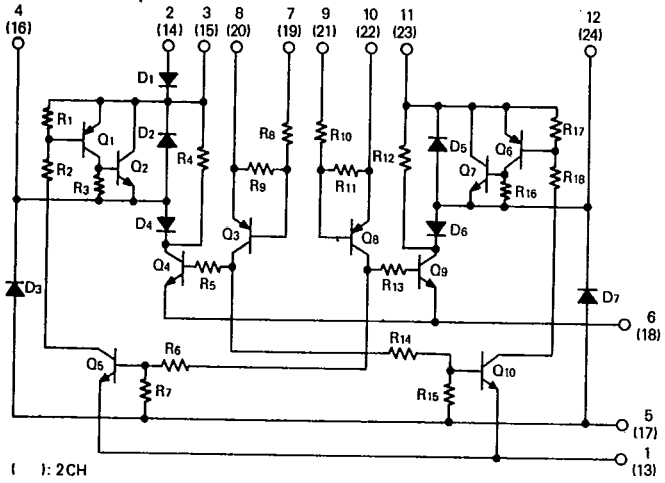
T-52-13-25

SI-7200E, SI-7230E Series

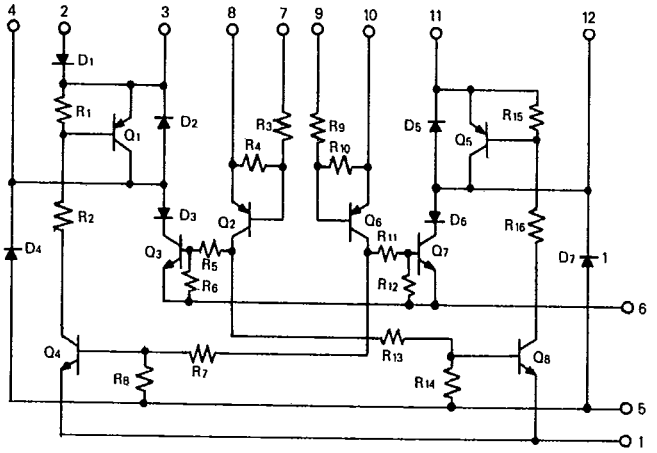
Electrical Characteristics (Ta=25°C)

Description	Symbol	Unit	Rating					
			SI-7200E			SI-7230E		
			MIN	TYP	MAX	MIN	TYP	MAX
Supply Voltage	Vcc	V	20		50	20		50
Output Current	Io	A			1.0			2.5
Input Current	IIN	mA			1.6			1.6

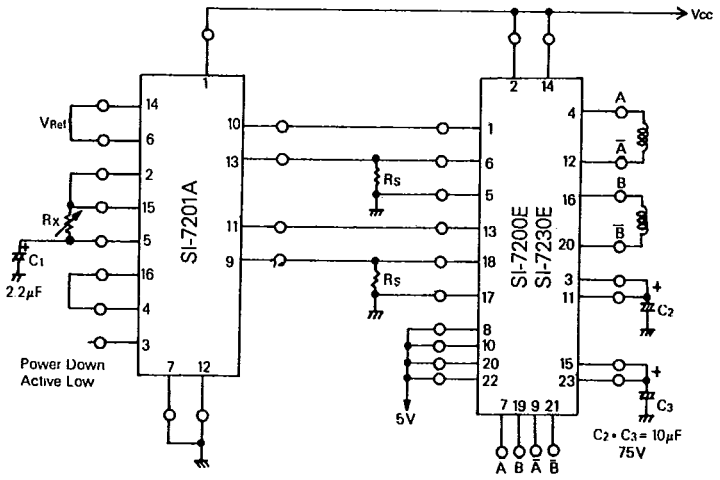
SI-7200E Equivalent Circuit



SI-7230E Equivalent Circuit



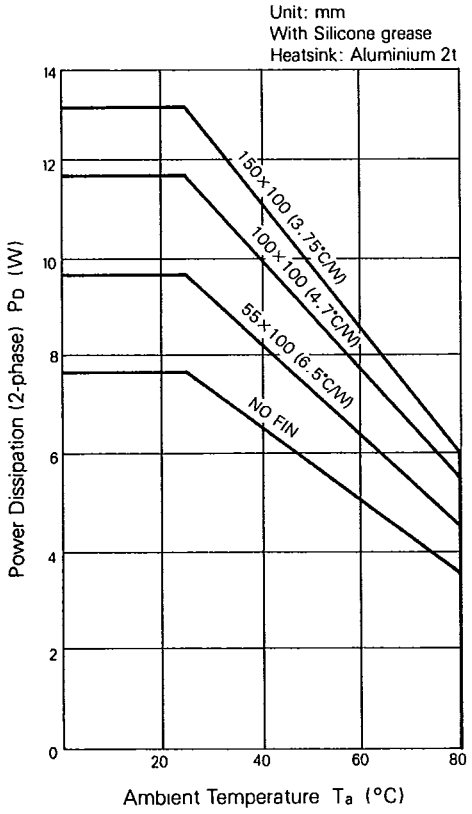
SI-7200E, SI-7230E Connections



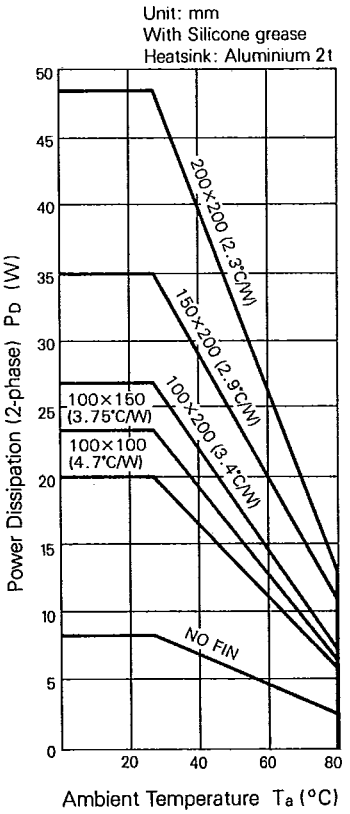
VRef=Reference Voltage (0.8V) Rx=0
Coil Current=$\frac{V_{Ref}}{R_S}$

1-phase, 2-phase or 1/2 phase
Active Low

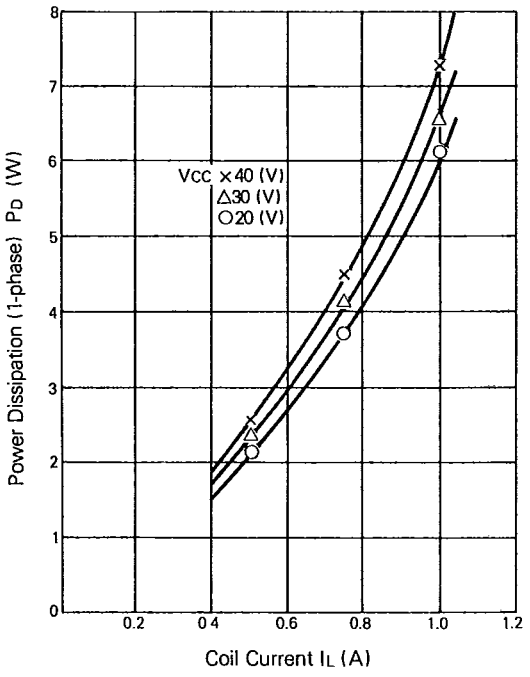
SI-7200E Derating



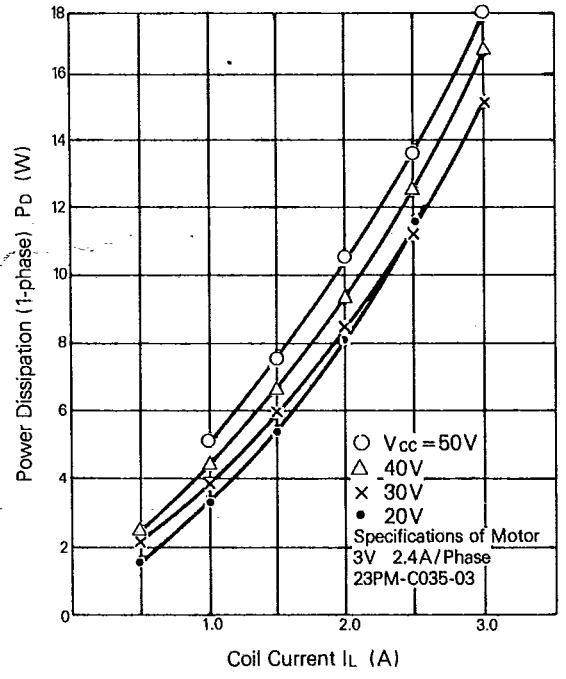
SI-7230E Derating



SI-7200E
Power Dissipation (1-phase) vs.
Coil Current Characteristics

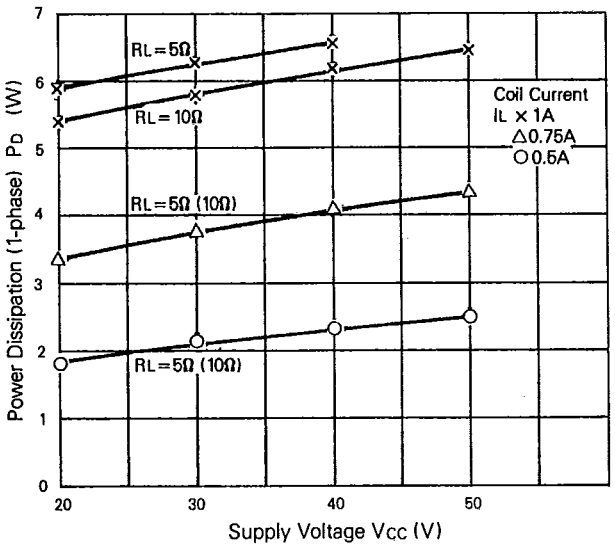


SI-7230E
Power Dissipation (1-phase) vs.
Coil Current Characteristics

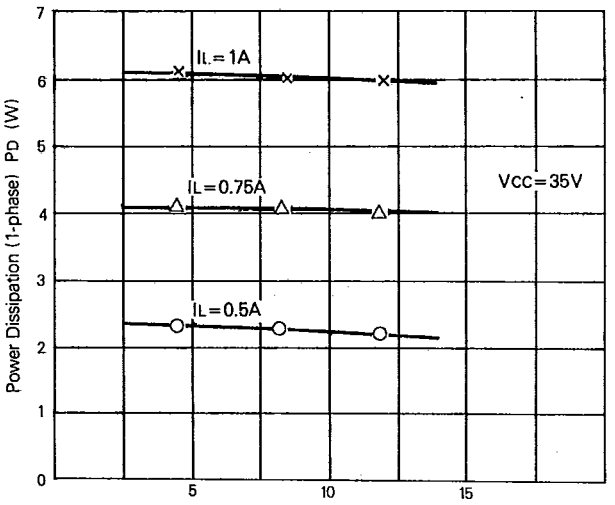


SI-7200E, SI-7230E Series

SI-7200E Power Dissipation (1-phase) vs. Supply Voltage Characteristics

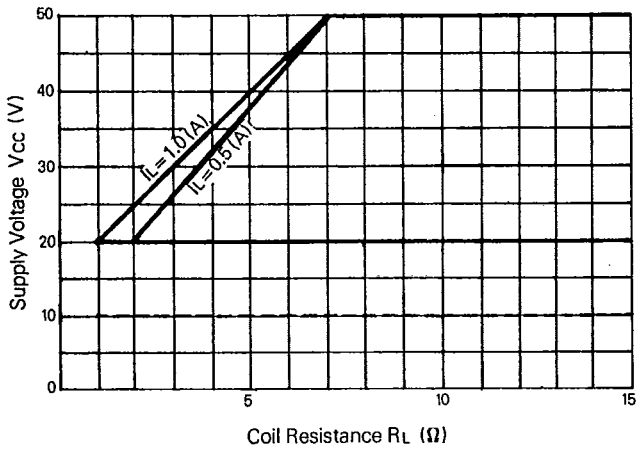


SI-7200E Power Dissipation (1-phase) vs. Coil Resistance Characteristics

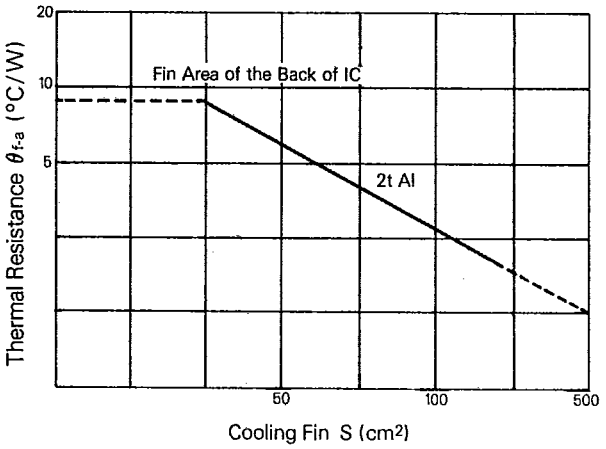


This resistance is to be double of the value specified in catalog of motor because of bi-polar drive.

SI-7200E Operating Voltage Range



SI-7200E Thermal Resistance vs. Fin Characteristics



Single—Dual Phase Excitation Time Chart

	A	B	$\bar{A}$	$\bar{B}$	Ad	Bd
1	0	1	1	1	1	1
2	0	0	1	1	1	0
3	0	0	1	1	1	1
4	0	0	1	1	0	1
5	1	0	1	1	1	1
6	1	0	0	1	0	1
7	1	0	0	1	1	1
8	1	0	0	1	1	0
9	1	1	0	1	1	1
10	1	1	0	0	1	0
11	1	1	0	0	1	1
12	1	1	0	0	0	1
13	1	1	1	0	1	1
14	0	1	1	0	0	1
15	0	1	1	0	1	1
16	0	1	1	0	1	0
1	0	1	1	1	1	1

