

# UN222

## Transistor array to drive the small motor

### ■ Features

- Small and lightweight
- Low power consumption (low  $V_{CE(sat)}$  transistor used)
- Low-voltage drive
- Transistors with built-in resistor with 6 elements (SO-14)

### ■ Applications

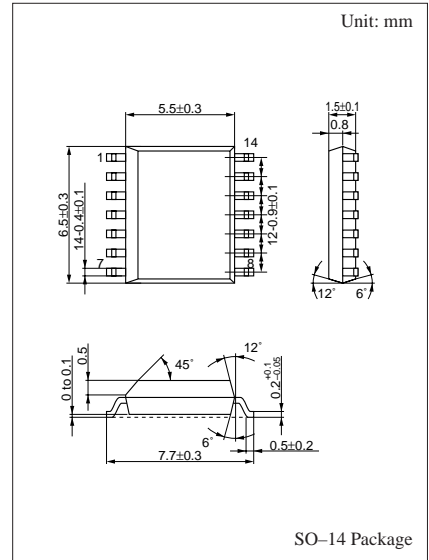
- Video cameras
- Cameras
- Portable CD players
- Small motor drive circuits in general for electronic equipment.

### ■ Absolute Maximum Ratings (Ta=25±2°C)

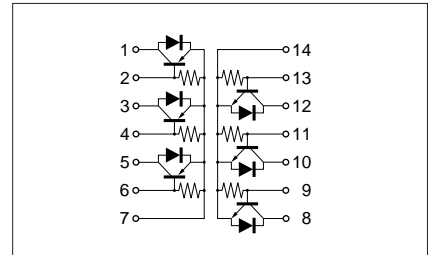
Parameter	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	±10	V
Collector to emitter voltage	$V_{CEO}$	±10	V
Collector current	$I_C$	±3	A
Total power dissipation	$P_T^*$	0.5	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

Note: ± marks used above: +: NPN part, -: PNP part

\*  $T_C = 25^\circ\text{C}$  only when the elements are active



### Internal Connection

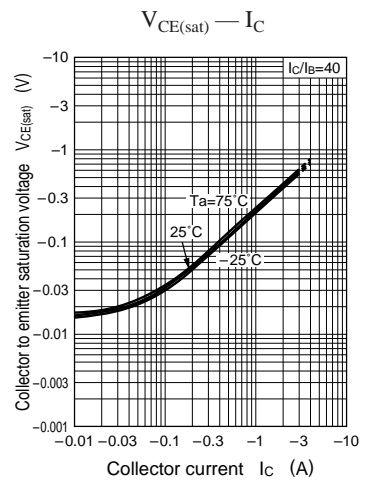
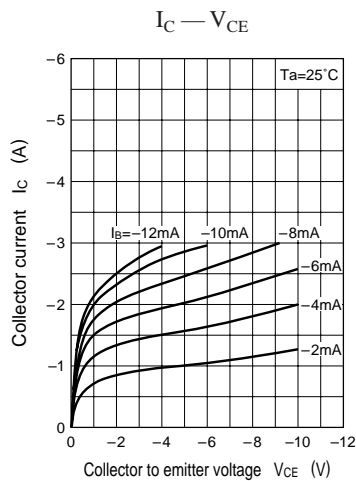
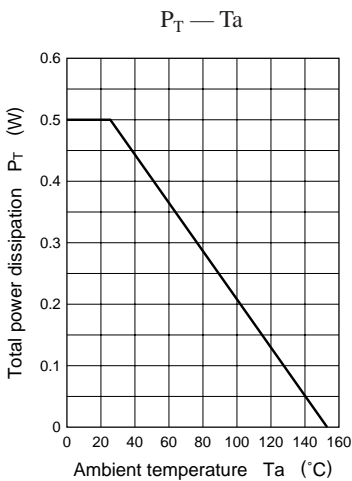


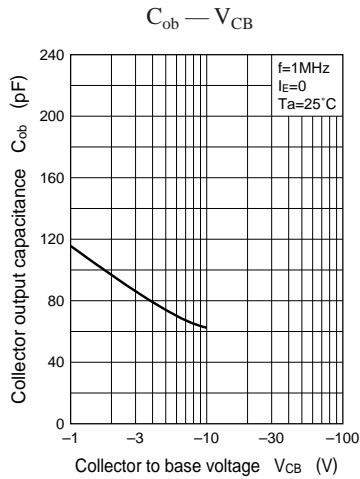
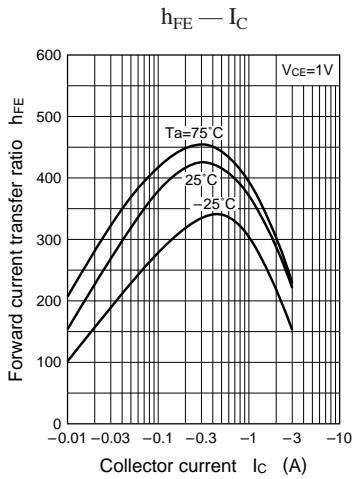
■ Electrical Characteristics (Ta=25±2°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I <sub>CBO</sub>	(NPN) V <sub>CB</sub> = 6V			1	μA
		(PNP) V <sub>CB</sub> = -6V			-1	
Collector to base voltage	V <sub>CBO</sub>	(NPN) I <sub>C</sub> = 10μA	10			V
		(PNP) I <sub>C</sub> = -10μA	-10			
Collector to emitter voltage	V <sub>CEO</sub>	(NPN) I <sub>C</sub> = 1mA	10			V
		(PNP) I <sub>C</sub> = -1mA	-10			
Forward current transfer ratio	h <sub>FE</sub>	(NPN) V <sub>CE</sub> = 1V, I <sub>C</sub> = 0.5A*	200		700	
		(PNP) V <sub>CE</sub> = -1V, I <sub>C</sub> = -0.5A*	200		700	
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	(NPN) I <sub>C</sub> = 2A, I <sub>B</sub> = 50mA*			0.25	V
		(PNP) I <sub>C</sub> = -2A, I <sub>B</sub> = -50mA*			-0.45	
Transition frequency	f <sub>T</sub>	(NPN) V <sub>CB</sub> = 6V, I <sub>E</sub> = -50mA, f = 200MHz		150		MHz
		(PNP) V <sub>CB</sub> = -6V, I <sub>E</sub> = 50mA, f = 200MHz		150		
Collector output capacitance	C <sub>ob</sub>	(NPN) V <sub>CB</sub> = 6V, I <sub>E</sub> = 0, f = 1MHz		50		pF
		(PNP) V <sub>CB</sub> = -6V, I <sub>E</sub> = 0, f = 1MHz		70		
Forward voltage (DC)	V <sub>F</sub>	(NPN) I <sub>F</sub> = 1A			1.5	V
		(PNP) I <sub>F</sub> = -1A			1.5	
Bias resistance	R <sub>EB</sub>		-30%	10	+30%	kΩ

\*Pulse measurement

Characteristics charts of PNP transistor block





Characteristics charts of NPN transistor block

